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Graduate Teaching Assistants' Knowledge and Attitudes Toward Students with Disabilities in Higher Education

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Graduate Teaching Assistants' Knowledge and Attitudes
Toward Students with Disabilities in Higher Education

by

Yanlys de la Caridad Palacios

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Curriculum and Instruction
with a concentration in Special Education
Department of Teaching and Learning
College of Education
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Keywords: social model of disability, inclusion, postsecondary, accommodations

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Dedication

First and foremost, I would like to dedicate this dissertation to God. Without him, I would not be where I am today. I am grateful for my journey, and I look forward to the blessings coming my way. Next, I dedicate this work to my precious mother, Marina Palacios, who is in heaven. She would always tell me, *un paso por paso y vas a llegar lejos- take one step at a time, and you will go far*. I also want to dedicate this work to my loving brother Joan M. Palacios and my grandparents Blanca and Froilan Palacios, who are no longer with us on this earth. Finally, I dedicate this masterpiece to my beautiful children, Tommy Ethan Alfonso and Emily Marina Alfonso, who inspire me every day. I love both of you to infinity and beyond!

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Abstract

Students with disabilities are entering higher education at increased rates (National Center Educational Statistics, 2016). The aim of this study was to investigate graduate teaching assistants' knowledge, attitudes, and professional development needs regarding students with disabilities in higher education. A modification of Sniatecki's (2015) *Faculty Attitudes and Knowledge Regarding College Students with Disabilities Survey* was used to gather responses from graduate teaching assistants through an online format. Results of the study indicate that graduate teaching assistants have positive attitudes towards students with disabilities yet lack specific knowledge on accommodations, disability law, and disability support services. Further, respondents expressed a willingness to participate in professional development regarding students with disabilities in higher education, as well as universal design for instruction.

Keywords: social model of disability, inclusion, postsecondary, accommodations

Chapter One: Introduction

As a former graduate teaching assistant with a learning disability, I have often encountered issues with other graduate teaching assistants regarding their understanding of students with disabilities. For example, one day, I was explaining my need for classroom accommodations to a professor, and a graduate teaching assistant from the Special Education program overheard the conversation. She said to me, "you don't need that." I immediately felt defensive, so I explained to the teaching assistant why I needed the accommodation.

Interestingly, she continued to challenge me, so I gave up trying to explain myself. I was left traumatized. The teaching assistant's attitude reinforced a misconception about adult students with disabilities and brought up painful memories of how I have often been treated in school. I have experienced time and time again that adult students with a disability (seen or unseen), must justify their individual needs to access support guaranteed by law in the United States. Experiences like this one have led me to wonder if other graduate teaching assistants struggle to understand and appreciate the needs of college students with disabilities, and what attitudes and beliefs might drive misconceptions around adult college students with disabilities (SWD).

Background

The role of graduate teaching assistants was introduced in the late 1800s in the United States (US) to attract potential candidates to graduate studies (Hendrix,1995). “Graduate teaching assistants are full-time students who provide a service to the university in exchange for

a stipend, and in some cases, additional benefits such as tuition waivers and health insurance” (Flora, 2007, p. 315). According to Park (2004), the role of the graduate teaching assistant (GTA) has evolved and changed in status over time and is now considered a niche role within higher education. Although graduate teaching assistant positions were initially used as vehicles for graduate students to pay for school and later used to attract candidates for study, many graduate teaching assistants today carry significant portions of the undergraduate teaching load (Douglas et al., 2016). As stated by Miller et al. (2014) graduate teaching assistants serve as instructors who are "like new teachers ... learning how to teach" (Hill & Orchinik, 2016, p.2). Thus, many graduate teaching assistants are assigned to teach undergraduates, despite an absence of pedagogical training (Shannon et al., 1998). Mentorship of graduate teaching assistants by professors or other faculty is not a common practice (Henderson, 2010). Graduate teaching assistants learn through experiences as they discover what it entails to be a teacher, as well as a graduate student (Park, 2004). As stated by Sohoni et al. (2013), "Given the increased responsibilities of GTAs and their impact on student learning, preparing GTAs to be effective teachers is critical not only in retaining undergraduates and improving students' learning and engagement, but also in retaining qualified college instructors" (p.4).

Not only are many graduate teaching assistants assigned to teach undergraduate students without support in post-secondary teaching pedagogy in general, they also receive far less training to work with students with disabilities in higher education (Justice et al., 2017; Russell, 2009). There are limited studies on graduate teaching assistants' perceptions of students with disabilities. McCallister et al. (2014) delineated a gap in the literature related to graduate teaching assistants' attitudes, beliefs, and knowledge about students with disabilities, as well as awareness of institutional and federally mandated procedures.

In addition, professional job development as a means of learning about institutional and pedagogical procedures is often unavailable to graduate teaching assistants (McCallister et al., 2014). Gallego (2014) illustrated that the self-identified needs and self-assessed weak pedagogical knowledge of graduate teaching assistants resulted in fragmented student relationships. Embry and McGuire (2011) discussed that graduate teaching assistants needed to develop inclusive classroom environments that leveraged differentiated teaching approaches, such as Universal Design for Instruction (UDI).

Statement of the Problem

Graduate teaching assistants are considered part of the faculty in higher education, and as such, graduate teaching assistants are responsible to teach courses while completing their own programs of study. Since graduate teaching assistants are considered instructors (Parker et al., 2015) and teach students with disabilities, there are several areas of concern related to graduate teaching assistants' roles as instructors of students with disabilities in higher education. Graduate teaching assistants often report challenges with understanding their duties and responsibilities, pedagogy, and federal mandates applicable to post-secondary students with disabilities (Sohoni et al., 2013). These priority knowledge points may become problematic as graduate teaching assistants need to be experts in many areas, including but not limited to: managing the adult classroom environment, balancing being students themselves with the demands of teaching and record-keeping, producing differentiated learning opportunities to a diverse student population, and providing legally mandated accommodations for students with disabilities (Damiani & Harbour, 2015).

The need to explore graduate teaching assistants' attitudes, beliefs, procedural and pedagogical knowledge is critical to a successful experience for both student and instructor.

Examining graduate teaching assistants' knowledge and attitudes regarding adult students with disabilities is critical work. Findings may lead to the possible reduction of barriers to success for adult students with a disability. A significant dearth in the literature related to graduate teaching assistants and adult students with disabilities begs more in-depth study of the elements of the graduate teaching assistant role as they impact adult students with a disability.

Federal Mandates

Individuals teaching in higher education include regular faculty, adjuncts, and graduate teaching assistants. There is a need amongst these individuals to be aware of legislation, policies, and practices regarding students with disabilities to ensure student success, legal compliance, and effective teaching practice (McCallister et al., 2014). The literature suggests that higher education institutions should work on best practices to disseminate federal law and policies that affect students (McCallister et al., 2014). Faculty, adjuncts, and graduate teaching assistants aid in directing students with disabilities to support services and aid in the provision of accommodations. Research has revealed an inconsistency in instructors' awareness of federal laws and school policies which protect students with disabilities, specifically in higher education (Black et al., 2014). Pertinent legislation governing higher education includes Section 504 of the Rehabilitation Act, The Americans with Disabilities Act (ADA), and the Higher Education Opportunity Act (HEOA) (Madaus, et al., 2012).

Federal mandates such as the ADA and Section 504 were established to provide accessibility for individuals with disabilities concerning education and employment (Madaus, Kowitt, Lalor, 2012). Section 504 ensures that individuals with disabilities receive reasonable academic accommodations. Further, in compliance with Section 504, institutions need to provide access to all components of higher education, which includes admissions, classroom

accommodations, testing, and participation in school functions. According to the ADA, students must have appropriate accommodations, and the law protects students with disabilities against discrimination (US Department of Education, 2020). A tenant of the recent revision to the HEOA provides students with intellectual disabilities access to higher education and provides these students with financial aid assistance (HEOA, 2008). As a result of the expansion in the HEOA legislation, universities updated policies regarding students with disabilities. Without appropriate professional development to keep faculty aware of ever changing laws, unwitting instructors could infringe on the right to equal access for students with disabilities.

For example, an expanded policy at the institutional level contains a safeguard provision of accessibility for students with disabilities, such as a new policy on technology usage in the classroom as a form of accommodation. If faculty and graduate teaching assistants do not receive this information, they cannot act on it (Murray et al., 2009). Subpart E of the Rehabilitation Act (1973) states that any postsecondary education institution that receives federal funding must provide safeguards for students with disabilities (U.S.C 705 (20), 2010). Safeguards must be present in all aspects of admissions, in the treatment of students, in academic adjustments, in housing, in financial aid, and in employment assistance to students, as well as in non-academic services.

Faculty Attitudes Toward Students with Disabilities in Higher Education

Polo Sánchez et al. (2018) conducted a survey on attitudes toward students with disabilities in a higher education institution. The researchers gathered information from college students without disabilities, college students with disabilities, administrators, and staff. The results indicated that non-disabled college students had positive attitudes toward students with disabilities. In the Polo Sánchez et al. (2018) study, instructors overwhelmingly reported positive

beliefs about individuals with disabilities, and the faculty expressed beliefs that students with disabilities are intelligent and have the potential to become professionals. Amongst all respondents in the study, the faculty had the most positive images of students with disabilities (Polo Sánchez et al., 2018). While the Polo Sánchez et al. (2018) study reported overall positive attitudes, other researchers have reported that male faculty had negative attitudes towards students with disabilities (Greenberger, 2016). Greenberger (2016) also reported that faculty lacked knowledge of students with disabilities, and faculty with less experience had negative attitudes.

Similarly, a study conducted by Zeedyk et al. (2019) focusing on engagement with students with Autism (a disability category covered under educational access laws in the United States) revealed mixed attitudes. The study aimed to uncover the perspectives of faculty regarding students with Autism. A mixed methodology approach was employed for the study. Faculty were surveyed regarding their knowledge about students with Autism, as well as pedagogical practices of accommodations relating specifically to Autism (Zeedyk et al., 2019). The findings indicated four central themes: (1) faculty believed if a disability is not visual, it does not exist, and students indicated invisible disabilities go unappreciated; (2) both students and faculty reported a lack of awareness of students with disability services; (3) students indicated faculty possessed limited knowledge of Autism, which faculty in concurrence, also reported; and (4) student and faculty reported both positive and negative engagement (Zeedyk et al., 2019). Since many graduate teaching assistants later become college faculty, it is critical to understand what underlies instructors' attitudes towards students with disabilities (McCallister et al., 2014).

Faculty attitudes towards students with disabilities may, in large part, develop early on in a professor's career, tracing back to the time they may have taught as graduate teaching assistants. Attitudes toward students with disabilities in higher education can be contradictory, according to research. Black et al. (2014) affirmed that faculty attitudes could create a barrier for students with disabilities based on a lack of familiarity and training related to students with disabilities, their needs, and accommodations. For example, faculty with less awareness of students with disabilities and accommodations had negative views and fewer experiences with Universal Design for Instructional strategies (Wynants & Dennis, 2017). Based on the study by Black et al. (2014), faculty who provided accommodations for students with disabilities had positive attitudes and felt comfortable with students with disabilities, while faculty who had negative attitudes towards students with disabilities felt uncomfortable (Black et al., 2014).

Further, a study conducted by Murray et al. (2009) replicated and extended the findings of Bigaj et al. (1999), which stated that faculty with more training on students with disabilities had positive attitudes towards students with disabilities. As a result, faculty who chose not to participate in professional development on students with disabilities continued to perceive students with disabilities negatively (Murray et al., 2009). Murray et al. (2009) expressed that many faculty members do not attend professional development for students with disabilities because of a lack of support from their department or college. Therefore, the authors concluded that faculty with less training on students with disabilities created potential barriers for students related to willingness to teach and to provide exam accommodations.

The results of these studies suggested that professional development training and having a relationship with students with disabilities affect faculty attitudes towards them. The more

exposure instructors had to students with disabilities, and the more training they attended, the more positive attitudes they held (Black et al., 2014).

Role and Responsibilities of Graduate Teaching Assistants

The roles and responsibilities of graduate teaching assistants vary from lecturing and assisting in labs to tutoring or providing moral support to undergraduate students. Large universities rely on graduate teaching assistants to perform most undergraduate teaching responsibilities (Holmes et al., 2013). Many graduate teaching assistants are responsible for teaching undergraduate students, despite limited experience as an instructor (Holmes et al., 2013). Most graduate teaching assistants are responsible for designing courses, grading assigned work, holding office hours, and maintaining content knowledge (Hoessler et al., 2015). Research has revealed that graduate teaching assistants who are also graduate students have challenging roles with many demands (Hoessler et al., 2015). These demands often include but are not limited to: home and family concerns, coursework, and health and wellbeing.

Graduate Teaching Assistants' Knowledge and Attitudes Towards Teaching

Knowledge

According to Hill and Orchinik (2016), graduate teaching assistants should have an awareness of assessments, pedagogy, content knowledge, knowledge of students, and knowledge of the curriculum. A highlight in the study of Hill and Orchinik (2016) was that graduate teaching assistants had a limited understanding of students' prior knowledge, as well as instructional strategies. At first, most graduate teaching assistants taught, in the same manner, they were taught, through lectures. However, as graduate teaching assistants progressed through training, their methodology of teaching evolved from teacher-centered to student-centered (Hill & Orchinik, 2016). Graduate teaching assistants increased their knowledge of students and

awareness of instructional strategies (Hill & Orchinik, 2016), and began to place students in groups to problem solve and work collaboratively.

Graduate teaching assistants' depth of pedagogical knowledge can potentially affect student learning. The literature reveals that graduate teaching assistants need to acquire training in teaching diverse learners, need to increase wait time, and provide feedback for discussions related to higher-order thinking questions (Huffmyer & Lemus, 2019). Flaherty et al. (2017) claimed that graduate teaching assistants and undergraduate students must establish a positive rapport with each other. By doing so, graduate teaching assistants may create an environment that enhances both student learning and their perceptions of themselves as instructors (Flaherty et al., 2017).

Studies regarding graduate teaching assistants' knowledge of the instructional options when teaching students with disabilities are limited. Graduate teaching assistants' roles and responsibilities as instructors of record are to provide content knowledge to students and classroom accommodations to students with disabilities (McCallister et al., 2014). Graduate teaching assistants need support in the area of knowing how to work with students with disabilities, regardless of disability type (McCallister et al., 2014). Recommendations by McCallister et al. (2014) included training for graduate teaching assistants on disability types, accommodations, and instructional strategies.

Attitudes

A study conducted by Freyberg and Ponarin (1993) delineated two types of graduate teaching assistants: a pre-graduate teaching assistant who had never taught before and a graduate teaching assistant who had prior teaching experience. Pre-graduate teaching assistants had a strong commitment to their students but felt at times conflicted with their academic progress and

their teaching. Pre-graduate teaching assistants expressed self-doubt and alienation from students and faculty (Freyberg & Ponarin, 1993). Pre-graduate teaching assistants' attitudes toward undergraduate students were positive, as compared to graduate teaching assistants (Freyberg & Ponarin, 1993). In contrast to graduate teaching assistants, many pre-graduate teaching assistants described teaching as mind-numbing, spur-of-the-moment, and unenthusiastic (Freyberg & Ponarin, 1993). Nevertheless, they expressed care and concern about the teaching role (Freyberg & Ponarin, 1993). Graduate teaching assistants expressed less concern about the teaching role versus pre-graduate teaching assistants and were more loyal to their research agendas (Freyberg & Ponarin, 1993). Both pre and graduate teaching assistants expressed their frustrations in developing as future higher education professionals (Freyberg & Ponarin, 1993). Based on the findings of Freyberg and Ponarin (1993), graduate teaching assistants had mixed views towards teaching, depending on their prior teaching experience.

Individual attitudes can create or eliminate potential barriers for students with disabilities. Graduate teaching assistants are vital in reducing attitudinal barriers that may hinder a student's experience, especially for students with disabilities. McCallister et al. (2014) highlighted the importance of attitudes in reporting about graduate teaching assistants who had contact with students with disabilities. The researchers discovered that graduate teaching assistants who had favorable attitudes toward students with disabilities reduced attitudinal barriers (McCallister et al., 2014).

Barriers Faced by Students with Disabilities in Higher Education

Students with disabilities in higher education are a vulnerable population. Many variables have been cited in relation to undergraduate students leaving college (Chen et al., 2020). Such variables include socioeconomics, gender, ethnicity, and college experience (Chen et al., 2020).

For students with disabilities, these risks are often exacerbated. In one study, Joshi and Bouck (2017) found at the 4-year institutions included in their study, that students without disabilities enrolled at a rate of 37%, compared to 15% enrollment for students with disabilities. Moreover, students with disabilities are at risk of dropping out of college during their first year as undergraduates (Koch et al., 2018). In general, students with disabilities in higher education were found to assimilate less socially and academically during their tenure as undergraduate students as compared to non-disabled peers (Koch et al., 2018; Malakpa, 1997).

Better college integration and a focus on the experiences of students with disabilities are two key factors that may reduce the risk of students with disabilities dropping out (Chen et al., 2020; Fleming et al., 2018). Barefoot (2004) and Fleming et al. (2018) revealed that providing students with the necessary tools, such as first year-seminar classes, can help support students with disabilities with self-advocacy and learning about resources on campus, study strategies, and developing relationships with professors. In addition to these variables, Malakpa (1997) found that negative interactions with instructors may hinder the experience of students with disabilities in higher education. As such, this study was important not only to improve professional development for instructors but also to reduce barriers for students with disabilities in higher education.

Purpose of the Study

The purpose of this study was to examine graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education. The enrollment rate of students with disabilities in higher education was relevant to this study because it established their presence as enrolled members of the student body. Enrollment rates of students with a disability in the United States have continued to increase. According to the National Center for Education

Statistics (NCES) (2016), the enrollment of students with disabilities in higher education was 11.9% of the undergraduate student population for the 2011-2012 school year. In 2015-2016 approximately 19% of undergraduate students in American institutions of higher education reported having at least one disability (NCES, 2016).

Despite upward trends in the enrollment of students with a disability in college, research related to graduate teaching assistants' experiences in teaching students with disabilities lags behind. There is a lack of scholarly investigation regarding graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education. Based on an extensive search, one study was found that explored graduate teaching assistants' knowledge and attitudes regarding students with disabilities, which was further limited by only having addressed students with physical disabilities (McCallister et al., 2014). Scholars have remarked that this area is often ignored within the literature regarding college teaching (Embry & McGuire, 2011). Therefore, research regarding graduate teaching assistants' knowledge and attitudes towards students with seen and unseen disabilities is warranted. This study may have represented the first study of its kind, thereby expanding the discussion in a vital way, around graduate teaching assistants and students with a disability. The following questions guided this study of graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education:

Research Questions

- 1) *What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*
- 2) *How do graduate teaching assistants at a selected higher education institution rate their knowledge of accommodations, disability laws, and disability support services for students with disabilities?*
- 3) *Do graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education vary by:*
 - a) *Gender*
 - b) *Discipline areas*
 - c) *Program degree*
 - d) *Semesters teaching as a graduate teaching assistant*
- 4) *What are the professional development needs of graduate teaching assistants related to students with disabilities?*

Significance of the Study

It was critical to explore the barriers for post-secondary students with a disability in order to improve both the student experience and the readiness of instructors responsible for that success. This study contributed to the literature by revealing new knowledge regarding graduate teaching assistants' knowledge and attitudes towards students with disabilities. The data collected may inform higher education institutions about which elements of the college experience need to be improved for students with disabilities through graduate teaching assistants' experience and requirements. Exploring graduate teaching assistants' knowledge and attitudes towards students with disabilities provided insight into existing attitudes that create

potential barriers for students with disabilities. The study also revealed what graduate teaching assistants know about students with disabilities, as well as guidelines and accommodations related to their needs. A greater understanding of the experiences encountered and relationships forged between graduate teaching assistants and students with disabilities was gained.

In the individual sense, graduate teaching assistants are vital to the success of students with disabilities in higher education, particularly since they are required to provide students with required accommodations. The results of this study may assist future generations of graduate teaching assistants as they transition into faculty roles in higher education by bringing attention to the critical nature of their role.

Theoretical Framework

For this study, the researcher used the social model of disability to frame the study and as a lens to examine the data. Mike Oliver was a scholar and political activist who was the father of the social model of disability. Oliver and Barnes (2012) created the social model to bring awareness of the role of disability and how this role impacts the economy, politics, and cultural barriers that impede people with disabilities from being part of society. The social model targets public perception from disabling to empowering people with disabilities. Oliver (2004) expressed that the social model of disability is described as "[a society] ... no longer sees disabled people as having something wrong with them- it rejects the individual pathology model" (p. 27). Oliver stated the need to change the environment to meet the needs of those who have disabilities. Since the conception of the social model, there has been a lot of discussion and criticism, but the model itself has not changed over the last 40 years (Shakespeare, 2013). Grue (2015) stated that the social model is a byproduct of the Fundamental Principles of Disability (UPIAS) of 1976. Before the social model of disability and the UPIAS conference of 1976, most

people with disabilities were seen as "defective, deficient, and dependent" (Gallagher et al., 2014, p.1122).

The essence of the social model of disability is that society imposes environmental, cultural, and educational barriers to restrict people who have a disability (Oliver, 2004). Goodley (2016) suggested that the social model of disability is a framework that considers potential barriers and oppression experienced by those who have a disability and is oppositional to the dominant discourse of the individual model of disability.

Goodley (2016) and Shakespeare (2013) implied the need for the social model of disability to include the word impairment. They explained the need to explore the person's identity through impairment as a different way of identifying themselves (Shakespeare, 2013). Some impairments are static, others episodic, some degenerative, and others terminal (Goodley, 2016). The removal of the term impairment has further implications for "...quality of life, reproductive decisions, and debates around the right to die" (Goodley, 2016, p. 35).

Disability in the medical model sees a person with a disability as defective. From this perspective, a disability is seen as a disease to cure or fix. By choosing to use People First Language, one sees the person first, then the disability (Snow, 2009). When the social model of disability is used as a framework, communication with and the portrayal of people with disabilities is positive; this reduces social barriers and oppression. When society or individuals address a person with a disability, People First Language should be used. The disability is then seen through a lens of accessibility, not limitations (Snow, 2009). The social model of disability is a catalyst that highlights environmental barriers and negative social attitudes that are dangerous impediments to inclusive policies (Dirth & Branscombe, 2017). In addition, the social

model views interventions as the basis of full equality and civil rights, not on individual bodies (Dirth & Branscombe, 2017).

Shakespeare (2013) explained that the social model of disability should challenge social barriers and oppression, not impairment. Shakespeare (2013) stated the need to arrange structural changes to fit the needs of people with disabilities. Based on the findings of Moriña (2015), students with disabilities voiced their concern that accessibility to the classroom was a struggle. Many students with disabilities expressed there was a lack of appropriate ramp width and the participants expressed frustration over the classroom itself. According to Moriña (2015), the classroom furniture was an area of concern. The classroom tables were inadequate for accessibility, and chairs were another issue. One participant stated the table and chair were non-rigid and had to continually ask for assistance to have furniture that met her needs.

At the end of Moriña's (2015) study, the participants provided recommendations for the university. The recommendation for a classroom setup was that when allocating classrooms, the university should consider different groups of students who would use the classroom environment. Also, lighting, temperature, and the acoustics in the room were other considerations the university needed to consider (Moriña, 2015).

In addition to structural changes, the language used when speaking of persons with disabilities is a critical factor for social change. Schomberg and Hollich (2019) expressed the need to model People First Language to address people with disabilities. If society changes the form of communication towards people with disabilities, then a measure of social change has occurred (Shakespeare, 2013). The politics behind social change creates an environment where people with disabilities are members of society, and social change reduces social barriers and

oppression. Therefore, creating a society where members address a person with a disability using People First Language is critical.

Moriña (2015) also explained how a select number of participants with disabilities felt about instructors. The instructors mistreated them, making them feel like they were the problem. For example, a lecturer stated to a student with a disability, "do what you can, but it's your problem" (Moriña, 2015, p. 675). Communication is a critical aspect of the social model, and as such, clear communication is needed when working with a student with a disability in higher education.

A third barrier to overcome for people with disabilities are environmental factors that impede the academics of a person with a disability. Goodley (2016) explained that disability is a societal and political concern, so hence are "learning difficulties" (p. 211). Rees (2017) explained that maintaining the current curriculum to comply with inclusive practices presents a paradox wherein teachers are at a disadvantage because they may lack knowledge and understanding of how best to support students. Haegele and Hodge (2016) found that when teachers use the social model of disability, the teacher modifies activities not just for students with a disability, but for all students in a secondary setting. The finding from Haegele and Hodge (2016) indicated when a teacher chose the social model of disability, both verbal instructions and visual cues were applied universally, resulting in all students in a class being able to draw benefit.

Further, Haegele and Hodge (2016) discussed the need to implement Universal Design for Learning (UDL) as a model for instruction to help assist teachers when lesson planning as a well aligned resource for following the social model of disability. Another way to implement the social model of disability in higher education classrooms, as described in Moriña's study, is the use of information and communication technology in classrooms, paired with active participation

from all students to enhance student learning (Moriña, 2015). Contradictory findings were apparent in Moriña 's study. The lecturers who did not implement the social model of disability created barriers for students with a disability (Moriña, 2015). Lecturers inflexible with students' needs did not institute changes to help students with disabilities feel comfortable (Moriña, 2015). The lecturers continued to use rigid curriculum, and disregarded any student with a disability in the classroom (Moriña, 2015). On the other hand, some lecturers created an academic environment where students with disabilities could be successful (Moriña, 2015). They were flexible about deadlines, exams were innovative, and they related well to students' needs (Moriña, 2015).

In summary, the understandings regarding the social model of disability are critical to reduce potential barriers or oppressive interferences that students with a disability may encounter in higher education. Creating structural change is warranted under ADA, but more importantly, it provides a sense of belonging to an inclusive community of learning. In general, higher education institutions need to think in advance about how to lessen barriers for students with disabilities. For example, recognizing a need to create ramps with ample width is being cognizant that a person with a disability may need accessibility into a building, evaluator, and classroom. The treatment of students with disabilities is a pressing issue in higher education institutions. The social model of disability can inform universities how to reduce social barriers and oppression.

Social Model of Disability in Studies

There is much research drawing on the social model of disability. However, research specific to students with disabilities in higher education is scant. Past studies focused on environmental and informational barriers students with disabilities face. Also, these studies

focused on the perspective of students with disabilities, peers, faculty, staff, and disability resources centers.

In the aforementioned Moriña (2015) study, the author shared a number of points related to how students with a disability perceive their experiences, including but not limited to: highlighting that when procedures and policies are in place to reduce barriers, they are often not followed; classrooms could be better equipped to include a variety of low and high assistive technology; instructors could have more training in diversity, and improvements could be made to the delivery of information and in regards to instructional strategies (Moriña ,2015). Positive experiences were also shared in that students with disabilities expressed they sometimes had instructors who were approachable and innovative in their teaching approaches (Moriña, 2015).

Next, in a more expansive study, students' perspectives, as well as the views of faculty, administrative staff, and disability resources centers were explored by Collins et al. (2019). Faculty felt there were challenges with having too many resources on campus that resulted in dependence on the part of the students and that created space for the exploitation of students with disabilities (Collins et al., 2019). Students felt there was a need for further training of instructors since many students with disabilities felt their instructors were not helpful and lacked awareness of their needs (Collins et al., 2019).

Interestingly, the disability resource center and academic staff reported being trained on disability support, even though faculty had not received training to work with students with disabilities (Collins et al., 2019). Also, students without disabilities and administrative staff questioned what exactly the university was preparing students with disabilities for, given the very high levels of provided support (Collins et al., 2019). These questions arose when considering there is often no support in the workplace after graduation. Administrative staff also

recognized that students with disabilities were not registered with disability resource centers for multiple reasons (Collins et al., 2019). One reason was a lack of awareness about disability resource centers and an overload of information (Collins et al., 2019). Another dilemma reported by disability resource centers was that some students chose not to register over the fear of not being accepted (Collins et al., 2019).

Another study analyzed Universal Design for Instruction (UDI) through the Social Model of Disability in higher education. The article focused on how instructors used UDI before and after a professional development course. Park et al. (2017) claimed that instructors conceptualized UDI in two ways. The first way was a continuous learning process that was attainable, and the other way was stagnant and difficult to achieve. Furthermore, Park et al. (2017) emphasized the need for ongoing professional development in inclusive pedagogical practices since the results of the study revealed instructors missed opportunities to apply UDI principles. Another noteworthy and critical result was the use of the social model of disability as a factor that positively affects the implementation of UDI principles (Park et al., 2017).

The following study used UDL and assessment that focused on students with disabilities' experiences in a mathematics class. Nieminen and Valtteri Pesonen (2020) found that each student faced unique barriers and opportunities when UDL was implemented in online learning. Two of three students expressed satisfaction with the online learning platform, while one student faced challenges (Nieminen & Valtteri Pesonen, 2020). The authors expressed that mathematics instructors should be encouraged to use UDL principles in their teaching, as this might affect retention rates and participation of diverse learners (Nieminen & Valtteri Pesonen, 2020). The authors expressed that when self-assessment is not practiced, it might fall short of empowering students in the self-reflection of learning new material, which could reduce a barrier. Lastly,

Nieminen and Valtteri Pesonen (2020) stated that students with disabilities in mathematics are often silenced, and it is imperative to understand the perceptions of diverse learners when designing, implementing, and evaluating access to learning environments in higher education.

In summary, the studies reviewed above, presented perspectives of students with disabilities, peers without disabilities, faculty, and staff at a disability resource center using the social model of disability. Yet, no studies exploring graduate teaching assistants' knowledge and attitudes toward students with disabilities using the Social Model of Disability could be located.

Methodology

The researcher explored graduate teaching assistants' knowledge and attitudes toward students with disabilities. The methodology employed was a survey delivered to study participants through a web-based application called Qualtrics. The survey employed in this study, *Faculty Attitudes and Knowledge Regarding College Students with Disabilities (SWD)*, was first used in 2015 by Sniatecki et al. The original author gave the researcher permission to use and revise the survey for the purposes of this study. The Statistical Package for Social Science (SPSS) was used to analyze the data retrieved from participants' responses.

Limitations

A convenience sample was utilized to conduct the research study, which limits the generalizability of the findings. However, convenience samples have been proven to provide useful information in answering research questions (Creswell, 2015). The timing of the study may have presented a limitation in that graduate teaching assistants expressed feelings of being overwhelmed, as the release of the survey inadvertently coincided with midterm exams. Moreover, a limited number of graduate teaching assistants were available during the Fall semester because of the ongoing global COVID-19 pandemic.

Finally, a single survey may not adequately capture participants' development in terms of knowledge and attitudes towards students with disabilities. The study was administered one time during the Fall of 2020, and there was not a follow-up survey released to the same participants by which to gauge any changes in graduate teaching assistants' knowledge and attitudes towards students with disabilities.

Delimitations

Delimitations to the study were the sample size, geographical location, and the time of data collection. The sample of graduate teaching assistants was drawn from one higher educational institution located in Southwest Florida during the Fall of 2020.

Definition of Terms

For clarification purposes, the researcher used the following terms throughout this study.

Academic discipline- refers to a particular area of discipline.

Attitudes- a state of mind or a feeling (Pickett, 2002, p.89).

Graduate student- a student who holds a bachelor's degree and is working on a master's degree or higher.

Graduate teaching assistant- students enrolled in a graduate program while teaching undergraduate courses in a higher education setting.

Pre-graduate teaching assistant- a graduate student and potential teaching candidate who has never taught a higher education course.

Reasonable Accommodations- a person with a documented disability has access to services or goods. When accommodation is requested, the student must demonstrate an impairment, and the impairment must significantly limit one or more major life activities (Americans with Disabilities Act of 1990). Accommodations refer to the "appropriate academic adjustments as

necessary to ensure that it does not discriminate on the basis of disability” (U.S. Department of Education [USDOE], Office of Civil Rights, 2008). Examples of accommodations are the following: extended time for tests and quizzes, distraction-free testing locations, assistive technology, note taker, dictation software, and wheelchair services.

Student with disability- a person having (1) a physical or mental impairment that substantially limits one or more of the major life activities of a person; (2), a record of such impairment; (3) and having such an impairment (American with Disability Act of 1990; ADA, 2008).

Teaching Assistant- a student working on an Ed.D. or Ph.D. while assisting faculty in a course

Inclusive teaching- ... facilitating learning in *all* students, including those from historically underrepresented groups (Embry & McGuire, 2011, p. 87).

Summary

Background information regarding graduate teaching assistants was provided in this chapter. A statement of the problem on the related issues including federal mandates, general attitudes toward students with disabilities in higher education, role and responsibilities of graduate teaching assistants, graduate teaching assistants' attitudes towards teaching, and graduate teaching assistants' attitudes towards students with disabilities was provided. The purpose of the study, research questions, the potential significance, the conceptual framework that guided the research, methodology, the limitations and delimitations, and the important terms used throughout the dissertation were discussed. The researcher briefly explained the history of the social model and focused on structural changes necessary in higher education for students with disabilities, along with how language is a social and political movement when referencing people with disabilities, and in this case, students with disabilities in higher education. Finally, the researcher explained the way in which academia responds to the social model of disability

can reduce cultural barriers for students with disabilities at the higher education level. Chapter two provides the reader with a systematic review of the literature on graduate teaching assistants.

Chapter Two: Review of the Literature

Introduction

In chapter one, a detailed description was provided of why this study was warranted. The statement of the problem, the purpose of the study, and research questions were introduced. In chapter two, an extensive systematic literature review was conducted to review empirical studies about graduate teaching assistants and students with disabilities in higher education with inclusionary and exclusionary criteria. A total of 31 articles met the benchmark. Five themes about graduate teaching assistants emerged from the extensive systematic literature review: teaching beliefs, professional development with a concentration on instructional support, graduate teaching assistants' effectiveness centered around classroom management and communication and graduate teaching assistants' need for mentorship and inclusive teaching practices. Lastly, the researcher identified a gap in the literature from her review around graduate teaching assistants' inclusive teaching practices.

Literature Review

The purpose of the systematic literature review was to synthesize current research trends related to graduate teaching assistants in higher education. A systematic review is an “approach to the literature review that attempts to identify the best available evidence to answer specific questions” (Hemsley-Brown & Sharp, 2003, p. 450). Crossan and Apaydin (2010) stated that a systematic review brings together available research on a topic to establish trends in the literature and identify gaps. Furthermore, the authors explained that a systematic analysis offers a

concentration of existing literature to build on and identifies gaps among studies (Crossan & Apaydin, 2010). Lavalley et al. (2013) expressed a systematic review as providing relevant studies to analyze essential factors and synthesize the information from the studies. Therefore, the systematic approach was selected as a framework to guide the review of the literature. A combination of search terms was used to compile peer-reviewed empirical articles available on graduate teaching assistants.

Search Methods

The search engines used to gather literature on graduate teaching assistants included the following: Educational Resource Information Center (ERIC), also known as EBSCO, Education Source, ProQuest, and PsycINFO. Word combinations were used to retrieve articles on graduate teaching assistants (see Tables 1, 2, 3, & 4). The search was extensive, with a total of eleven searches conducted to compile literature on graduate teaching assistants. The search yielded a total of 342 articles.

Review of the Process

Inclusionary Criteria

The researcher read each abstract to determine relevancy to each of the research questions. Below are the questions that guided this study:

- 1) *What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*
- 2) *How do graduate teaching assistants at a selected higher education institution to rate their knowledge of accommodations, disability laws, and disability support services for students with disabilities?*
- 3) *Do graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education vary by:*
 - a) *Gender*
 - b) *Discipline areas*
 - c) *Program degree*
 - d) *Semesters teaching as a graduate teaching assistant*
- 4) *What are the professional development needs of graduate teaching assistants related to students with disabilities?*

The inclusion of articles for the systematic review included quantitative, qualitative, and mixed-methodology peer-reviewed publications ranging from 2008 to 2018 (see Figure 1). The researcher used the following terminology: (a) graduate teaching assistants' attitudes, perceptions of students with disabilities, (b) graduate or masters students' attitudes or perceptions of students with disabilities and teaching in higher education, (c) teaching assistants' attitude or perceptions on students with disabilities (d) graduate teaching assistant.

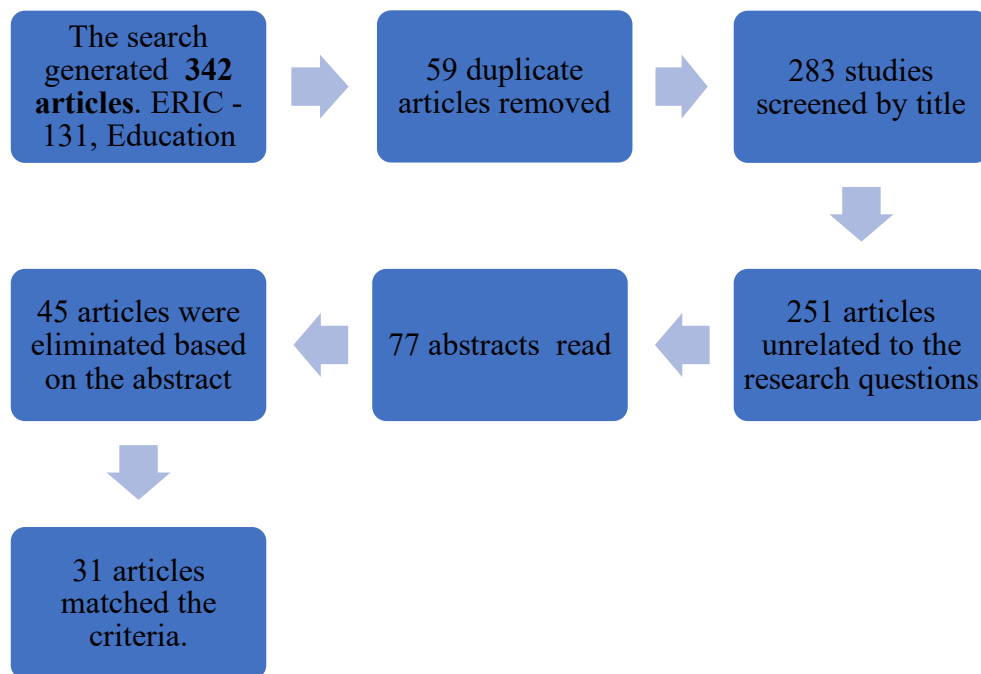
Exclusionary Criteria

The number of articles eliminated was extensive. The researcher eliminated a total of 311 articles that did not meet the parameters of the research questions. Examples of excluded topics include but are not limited to the following: repeated articles, undergraduate students'

perceptions of graduate teaching assistants, LGBTQ issues as graduate teaching assistants, digital drawing bio labs, reflective practice of bio classes, and graduate teaching assistant teaching sports.

Figure 1

The Process of Selecting Articles from Beginning to End



Themes

The researcher coded five themes that emerged from the systematic review (a visual summary can be found in appendix A). The first theme focused on graduate teaching assistants' teaching beliefs. The second theme was on professional development on instructional support. The third theme was graduate teaching assistants' effectiveness, specifically with classroom management and communication. Teachers' effectiveness on classroom management and communication were combined since one topic supports the other. The fourth theme was graduate teaching assistants' need for mentorship, and the final theme was graduate teaching assistants' inclusive teaching practices.

Teaching Beliefs

Teaching beliefs are at the core of an instructor's philosophy, and it is essential to understand graduate teaching assistants' teaching beliefs because they act as instructors of record. Graduate teaching assistants experience teaching challenges such as juggling their research agendas and coursework, while also teaching (Kinchin et al., 2009). Another challenge graduate teaching assistants endure difficulty with student-centered approaches vs. teacher-centered approaches (Douglas et al., 2016). Lastly, graduate teaching assistants encounter a lack of autonomy in their teaching (Justice et al., 2017).

The teaching issues that led to the teaching beliefs of graduate teaching assistants were equally as important. Kinchin et al. (2009) surveyed graduate teaching assistants on their epistemological conundrum of research versus teaching practices. The Kinchin et al. (2009) study revealed that graduate teaching assistants had a higher degree of aptitude for their research than for their teaching. Another study by Muzaka (2009) highlighted that graduate teaching assistants have a dynamic and multifaceted role as students, researchers, and instructors. Jordan and Howe (2018) conducted a mixed methodology study analyzing the teaching beliefs of graduate teaching assistants. Most graduate teaching assistants in the study felt that teaching had improved their knowledge of the subject and challenged their understanding of the subject, which led to a deeper understanding of the subject (Jordan & Howe, 2018).

Another facet of the challenges graduate teaching assistants face is the translation of teaching theory to practice. Gonsalves et al. (2009) interviewed graduate teaching assistants about their learning experiences to understand how they think about their teaching practices. Gonsalves et al. (2009) presented the challenge that graduate teaching assistants lacked an

understanding of thinking about learning and teaching. Most graduate teaching assistants focused on teaching instead of focusing on how others learn (Gonsalves et al., 2009).

In addition, Gallego (2014) captured graduate teaching assistants' concerns through journal entries they made while teaching courses. Gallego (2014) explained that graduate teaching assistants were less concerned with teaching methodology and made most comments on activities versus the learning. Cho et al. (2011) reported that graduate teaching assistants value their teaching practices, and found that those who enrolled in professional development courses had a positive outlook on student learning. Marbach-Ad et al. (2014) indicated that graduate teaching assistants believed in active learning and they were aware of different methodological practices. However, graduate teaching assistants continued to practice teaching through lectures (Marbach-Ad et al., 2014). Goertzen et al. (2010) researched graduate teaching assistants' teaching experience in the classroom through interviews. Goertzen et al. (2010) indicated that graduate teaching assistants' teaching was rigid and focused on correct answers when students responded, rather than probing student understanding of the material.

Several researchers focused on the delivery of instruction, which is vital to understanding the methodology graduate teaching assistants use. Judson and Leingang (2016) explored graduate teaching assistants' pedagogical content knowledge. Justice et al. (2017) delved into what graduate teaching assistants' beliefs are on content teaching methods and assessments. Miller et al. (2014) conducted a mixed-methodology inquiry on how graduate teaching assistants ascertain ways of teaching content material with pedagogical theory and found that graduate teaching assistants were able to express how the process of observation and reflection enabled them to discover new ways to teach content.

Muzaka (2009) found that graduate teaching assistants perceived that working in small groups helped increase their ability to work in challenging class scenarios. In addition, graduate teaching assistants were able to transfer and apply their knowledge in various environments and strengthened their public speaking skills and confidence (Muzaka, 2009). Douglas et al. (2016), explored graduate teaching assistants' beliefs and classroom practices through interviews. Douglas et al. (2016) reported that graduate teaching assistants held contradictory beliefs about the role of an instructor. For instance, graduate teaching assistants had teacher-centered beliefs on content and student-centered beliefs on learning. Many of the graduate teaching assistants reported in the study found teaching to be a challenging activity and at times consuming and demanding (Douglas et al., 2016).

Another example of a teaching belief study was conducted by (Zehnder, 2016), who examined graduate teaching assistants' attitudes and knowledge on teaching after teaching for four years. Zehnder (2016) discovered that graduate teaching assistants' confidence increased by the end of the semester as compared to the beginning. Most graduate teaching assistants were able to identify a constructive approach toward teaching by the end of the semester.

Furthermore, Zehnder (2016) claimed the results of the study indicated that graduate teaching assistants had a promising track to teach as instructors in higher education. Judson and Leingang (2016) revealed that most graduate teaching assistants recognized teaching as a critical component of their training. Nonetheless, of the seven graduate teaching assistants involved in the study, only one had a positive teaching experience. In general, graduate teaching assistant participants underestimated the knowledge of most undergraduate students when they taught a course (Judson & Leingang, 2016).

Lastly, graduate teaching assistants reported the lack of autonomy they have as instructors of record. Cho et al. (2011) surveyed graduate teaching assistants' teaching concerns about class control and their teaching responsibilities as instructors. Justice et al. (2017) explained that graduate teaching assistants expressed a lack of autonomy in the classroom, which led to varied perceptions of teaching beliefs. However, in the findings of Miller et al. (2014), most teaching assistants (TAs) involved in the study expressed how the process of observation and reflection enabled them to discover new ways to teach content by having a pedagogical theory in mind to put into practice.

Professional Development (Instructional)

Some studies showed the importance of professional development for graduate teaching assistants. For example, Leger and Young (2014) interviewed graduate teaching assistants about their teaching philosophies and learning activities during a professional development course. The independent observers stated that the graduate teaching assistants did not change their conceptions of teaching and learning as a result of the professional development. Green (2010) probed to discover graduate teaching assistants' experience and perceptions of a professional development course through a focus group. A third example, Parker et al. (2015), surveyed graduate teaching assistants' understanding of applied learning and teaching techniques. In a fourth example, O'Neill and McNamara (2016) used mixed methods to identify graduate teaching assistants' experiences through a collaborative approach to a professional development course. Moreover, Ridgway et al. (2017) surveyed graduate teaching assistants' preparedness after a professional development course.

While professional development is an essential component, the importance of graduate teaching assistants' beliefs while taking professional development courses is also imperative to

understand. Justice et al. (2017) surveyed graduate teaching assistants' preparation, beliefs, and pedagogical approaches to teaching. Russell (2009) claimed that more than 80% of graduate teaching assistants had limited teaching experience with undergraduate students prior to professional development. Also, Linenberger et al. (2014) found that graduate teaching assistants lacked prior experience and knowledge of instruction.

Leger and Young (2014) discussed the lack of studies on professional development for graduate teaching assistants, which affected their development as collegial graduate teaching assistants when teaching in higher education. Leger and Young (2014) explained that instructors reported that graduate teaching assistants' conception of teaching and learning had changed over time. However, results indicated that graduate teaching assistants had not changed their conception of teaching and learning while taking the professional development course (Leger & Young, 2014).

A study by Green (2010) found that graduate teaching assistants had limited information on pedagogy, content, and technology and how to incorporate those skills into their teaching. Moreover, Green (2010) stated that graduate teaching assistants were unsure of what to teach and what topics were relevant, which created a lack of self-confidence. The professional development course on pedagogical training for graduate teaching assistants revealed they were concerned with student needs and wants, and graduate teaching assistants wanted to improve their teaching. Green (2010) noted that graduate teaching assistants who had not taken a professional development course before teaching faced more challenges.

In other research, Parker et al. (2015) indicated significant changes in the difference in mean scores from pre and post-test items on graduate teaching assistants' ability to design and apply learning experiences for students after a professional development course. Parker et al.

(2015) explained the need to nurture graduate teaching assistants through professional development courses to ensure effective teaching.

O'Neill and McNamara (2016) explored graduate teaching assistants' opinions on topics for further exploration during a professional development course. A finding of the study showed that graduate teaching assistants need help interpreting policies and procedures to enhance their role as instructors. O'Neill and McNamara (2016) also reported that a community of practice emerged when faculty participated along with graduate teaching assistants in a professional development course. Graduate teaching assistants felt they were part of a community of learning.

A study by Ridgway et al. (2017) suggested that graduate teaching assistants' confidence in teaching increased over time when coupled with professional development courses. Ridgway et al. (2017) explained that graduate teaching assistants needed to implement backward-designed instruction as they took the professional development course. Moreover, Ridgway et al. (2017) indicated that graduate teaching assistants found it most useful when supported by a faculty member who helped with the backward planning preparation. Novice and mid-career graduate teaching assistants mentioned it would have been helpful to have had active learning experiences during their professional development course. Ridgway et al. (2017) also found that faculty felt overwhelmed when they participated in side-by-side planning with graduate teaching assistants. Lastly, Ridgway et al. (2017) found that graduate teaching assistants' interest did not align with faculty, which affected the culture within a department.

While some teaching assistants were comfortable teaching at the collegiate level, others felt inexperienced teaching in higher education. Justice et al. (2017) indicated that only 14% of graduate teaching assistants reported they had taken a professional development course. According to Justice et al. (2017), most graduate teaching assistants were not given an

opportunity to take professional development courses, specifically in college teaching. The researchers also discovered that 40% to 50% of graduate teaching assistants indicated they had not learned active teaching techniques for adult learning, such as UDI, cooperative groups, or assessment methods.

Professional development is necessary for graduate teaching assistants as they have limited content knowledge before teaching undergraduate students. According to Russell (2009), 85% of graduate teaching assistants did not perceive themselves as adequately trained. Also, Russell (2009) expressed the importance of instructional socialization and development issues faced by graduate teaching assistants as they transition into higher education employment.

Furthermore, there was a significant correlation between the prior experience of teaching methodology, how graduate teaching assistants were taught, and the degree to which they used those methods. This was consistent with prior research. For example, Linenberger et al. (2014) uncovered that graduate teaching assistants felt chaotic as they had to figure out the process of teaching without guidance and support. Not only does a lack of professional development affect graduate teaching assistants' ability to teach, but this also affects students, especially students with disabilities. Linenberger et al. (2014) developed learning communities for graduate teaching assistants on pedagogy development to enhance teaching. The aim was to provide a teaching foundation of practice. The results indicated that professional development for graduate teaching assistants helped them to understand inquiry-based instruction. These studies showed negative perceptions developed about teaching when graduate teaching assistants were expected to teach without proper preparation.

Teacher Effectiveness

Teaching effectiveness is a characteristic most graduate teaching assistants need to develop as instructors. It is necessary to understand graduate teaching assistants' thought processes of teaching, along with their competency in facilitating knowledge to their students. Other critical components to explore are the roles and responsibilities graduate teaching assistants bear. In addition, the effectiveness of graduate teaching assistants coupled with classroom management and communications were explored in the following articles.

Some studies on teacher effectiveness consider how graduate teaching assistants see themselves as teachers. Gonsalves et al. (2009) interviewed graduate teaching assistants about their teaching styles, while (Douglas et al., 2016) interviewed and videotaped graduate teaching assistants as they discussed beliefs about their classroom practices. Graduate teaching assistants had concerns about teaching since most of them had not taught before in higher education. Cho et al. (2011) investigated graduate teaching assistants' experiences in the classroom using a survey. Goertzen et al. (2010) video-recorded graduate teaching assistants during class instruction to gauge their instruction. Deacon et al. (2017) used a mixed methodology approach to gain information on the graduate teaching assistants' level of competencies when teaching undergraduate students. Lastly, Henry and Bruland (2010) interviewed graduate teaching assistants on their dynamic relationship with undergraduate students for four semesters. The findings revealed that graduate teaching assistants should revisit the experience of the first-year student, reinterpret student performance, rethink the course or curriculum from a student's perspective, as well as consider influences as they reflect on their pedagogy.

Students need teachers with effective classroom practice to maximize the facilitation of knowledge acquisition. Young and Bippus (2008) discussed similar findings of the importance of

graduate teaching assistants' ability to develop self-efficacy as part of their professional development. Self-efficacy in teaching refers to the ability to believe in one's ability to teach. Young and Bippus (2008) expressed the need for teachers to create a classroom environment where routines are in place to ensure smooth transitions from one activity to the next. To the same effect of classroom management, Gallego (2014) uncovered methodology and classroom management as essential aspects for graduate teaching assistants to develop. Methodology affected graduate teaching assistants' ability to incorporate class activities through planning, which in turn affected classroom management. In addition, most graduate teaching assistants acknowledge the need to improve their classroom management by providing a student-centered environment, maintaining discipline, and developing respect for the instructor-peer relationship (Gallego, 2014).

Graduate teaching assistants also need to understand their role and responsibility while teaching undergraduates. Tulane and Beckert (2011) and Muzaka (2009) surveyed graduate teaching assistants about roles and responsibilities. Tulane and Beckert (2011) indicated a wide range of job descriptions for graduate teaching assistants, which led graduate teaching assistants to struggle while teaching. Tulane and Beckert (2011) claimed graduate teaching assistants played the role of clerical personnel, which affected their performance to teach. Sohoni et al. (2013) and Muzaka (2009) surveyed faculty and undergraduate students on graduate teaching assistant roles and responsibilities. Results indicated that students and faculty felt graduate teaching assistants needed to improve teaching skills, such as clear communication $\alpha = .81$; student management $\alpha = .82$; preparation for feedback and assessment $\alpha = .77$; and course management/policy knowledge $\alpha = .77$ (Sohoni et al., 2013). Muzaka (2009) concluded that graduate teaching assistants saw themselves as doctoral students with limited teaching

responsibilities, which led to a conflict of responsibilities. Also, Muzaka (2009) reported that people skills were an essential component for graduate teaching assistants since their teaching experience often led to employment.

Further studies focused on graduate teaching assistants' pedagogy as part of their effectiveness as instructors. Gonsalves et al. (2009) explained that graduate teaching assistants were able to identify teaching versus learning, however, graduate teaching assistants needed additional support to articulate their teaching through thinking, and they lacked an understanding of how learning occurred. In this study, only a few graduate teaching assistants were able to articulate the complex layers of teaching. Douglas et al. (2016) uncovered a mix of teacher-centered and student-centered teaching approaches. More specifically, the researchers focused on students' active participation during learning. In addition, survey results from Cho et al. (2011), uncovered six concerns graduate teaching assistants experience:

- class control
- external evaluation
- task
- impact
- role/time
- communication

A hindrance to communicating effectively with students stems from graduate teaching assistants' concerns they have about themselves as instructors (Cho et al., 2011). Goertzen et al. (2010) claimed that graduate teaching assistants' effective communication with students was vital to students' learning. The idea was centered around when graduate teaching assistants knew when students understood the material. Graduate teaching assistants needed to scaffold students

by guiding them to a conclusion to effectively communicate with others (Goertzen et al., 2010).

Clear communication between the graduate teaching assistant and the student about what content a student was not understanding was necessary. Also, Muzaka (2009) revealed that graduate teaching assistants needed to develop further communication skills when interacting with students, public speaking, and working to develop their confidence (Young & Bippus, 2008).

Also, Deacon et al. (2017) indicated five areas of importance to prepare graduate teaching assistants:

- clear and effective communication
- meaningful discussion
- concerns for students
- fairness and consistency
- high level of expertise

Clearly, good communication was a crucial characteristic of successful graduate teaching assistants (Deacon et al., 2017). Graduate teaching assistants' ability to provide information and share ideas clearly and effectively with students was essential (Deacon et al., 2017). A study by Henry and Bruland (2010) revealed that graduate teaching assistants' positionalities of teaching and learning acquired evidenced a learner-centered approach across time. Graduate teaching assistants were able to monitor their attitudes and beliefs about students as they shaped their pedagogy (Henry & Bruland, 2010). However, graduate teaching assistants required additional support in managing a variety of classroom activities while simultaneously communicating effectively with students (Henry & Bruland, 2010).

Mentoring

A review of the extant literature found mentoring was not a top priority for most universities, yet is a critical factor for graduate teaching assistants. Researchers explored the need to provide mentorship for graduate teaching assistants who had a disability and the lack of time for mentorship opportunities.

A mixed methodology approach was used by some to examine the extent of mentorship for graduate teaching assistants. In a study conducted by Gilmore et al. (2014), results indicated that the extent of mentorship provided was typically in passing conversations. For example, the conversations were unstructured, infrequent, or not directly with the mentor. Other findings revealed that even when graduate teaching assistants were mentored related to their teaching, at times the mentorships were not supportive. However, it was emphasized that this was not always the case (Gilmore et al., 2014).

Damiani and Harbour (2015) investigated through interviews the need to mentor graduate teaching assistants who had a disability. Graduate teaching assistants with disabilities were always in an in-between space between a student and instructor. The metaphor “wizard behind the curtain” (Damiani & Harbour, 2015, p.399) explained the layers that most graduate teaching assistants with a disability experience during their role as an instructor needing accommodations (Damiani & Harbour, 2015). The authors explained that the complexities of being a student while needing accommodations as an instructor can be an intense experience in order to provide academic rigor. Research supports the notion that graduate teaching assistants with disabilities need mentors during their time as doctoral students. Parker et al. (2015) pointed out that it is imperative to continuously provide feedback to graduate teaching assistants. Graduate teaching assistants need time to process strategies being implemented and require mentorship to fully

blossom as instructors. Damiani and Harbour (2015) explained that graduate teaching assistants needed support from faculty. If there was a lack of mentoring for graduate teaching assistants with a disability, their teaching and health suffered (Damiani & Harbour, 2015).

According to Henderson (2010), time spent with a mentor was essential when mentoring graduate teaching assistants. Henderson (2010) explained that most graduate teaching assistants needed more time with a mentor than they needed to plan for a class. Results also showed that graduate teaching assistants needed to develop a student-centered approach to teaching. Another dilemma graduate teaching assistants experienced during their tenure was a lack of connection with faculty. For example, Gilmore et al. (2014) revealed that more than 20% of graduate teaching assistants were not assigned mentors, and those with mentors were matched by research interest instead of teaching duties.

Inclusive Teaching

Few studies were found in the literature review that has investigated graduate teaching assistants' inclusive teaching practices, specifically those with a disability. Some studies focused on graduate teaching assistants with disabilities' inclusive teaching practices through a UDI approach as a topic of interest. There was also scant research that focused on graduate teaching assistants' attitudes towards students with disabilities. Lastly, little research was found exploring graduate teaching assistants with disabilities about their inclusive teaching practices.

A unique factor to consider in research is how graduate teaching assistants who have a disability themselves incorporate inclusive teaching practices for students who have disabilities. Two studies explored the type of accommodations graduate teaching assistants asked for as teaching instructors (Damiani & Harbour, 2015; Fedukovich & Morse, 2017). Fedukovich and Morse (2017) investigated the culture of a transformation on accessibility and teacher

preparation as a complex social process. The question remains as to what approach would help support graduate teaching assistants' experiences with students with disabilities. Perhaps support should be provided through a specific professional development course, as suggested by McCallister et al., (2014). Fedukovich and Morse (2017) explained the complex intricacies of graduate teaching assistants' pedagogy of accessibility and UDI for all students as they struggled with a disability. The need to learn from graduate teaching assistants as students with disabilities was a valuable tool to provide a better quality of instruction for students (Fedukovich & Morse, 2017).

Another area of research relevant to graduate teaching assistants surrounds Universal Design for Instruction (UDI). According to Damiani and Harbour (2015) Universal Design for Instruction to support graduate teaching assistants is part of the process "to move beyond individualized response and responsibility for accommodations, ...change Oz instead of changing the wizard" (p. 409). Perhaps the best way to practice inclusive teaching practice is through UDI. Embry and McGuire (2011) noted graduate teaching assistants' teaching strategies aligned with UDI. However, there was a discrepancy among graduate teaching assistants' inclusive beliefs from science, technology, engineering, and mathematics (STEM) disciplines. For example, Embry and McGuire (2011) discovered graduate teaching assistants wanted to include everyone by providing additional time; however, some graduate teaching assistants expressed there would always be student(s) who had difficulties with the content material.

Another area with little research in the literature review was graduate teaching assistants' attitudes towards students with disabilities. One study by McCallister et al. (2014), replicated methods from previous studies on faculty attitudes towards students with disabilities. The study indicated that the more aware faculty was about a person who had disabilities, the more likely

they were to accommodate students (McCallister et al., 2014). The results from the online survey indicated graduate teaching assistants wanted to learn about instructional strategies but had limited information on students with disabilities.

Lastly, there is a need to understand graduate teaching assistants who have disabilities and their understanding of inclusive teaching practices. Damiani and Harbour (2015) explained that many of their participants with disabilities struggled to create their teaching presentations without help from others. Graduate teaching assistants also struggled to provide an inclusive pedagogy. Damiani and Harbour (2015) claimed a way to accommodate graduate teaching assistants with a disability was to provide them with necessary tools such as UDI and mentoring.

Gaps

Graduate teaching assistants' teaching beliefs are complex and dynamic. The literature suggests they need support in all areas of teaching to develop as instructors. There is a gap between teaching methodology approaches of student-centered versus non-student centered. Another factor to consider is that graduate teaching assistants have limited or no experience teaching undergraduate students and much less experience teaching students with disabilities. Professional development is where graduate teaching assistants are taught new teaching methodologies, specifically for college teaching, such as using UDI as an approach. Another dilemma that needs further investigation is how graduate teaching assistants from the STEM disciplines incorporate inclusive teaching. The need to provide graduate teaching assistants mentoring is warranted to help guide graduate teaching assistants to become facilitators of knowledge, not transmitters of knowledge.

Furthermore, there is a gap in graduate teaching assistants' ability to further develop in the following areas: communication, classroom management awareness of their role and

responsibilities, presentation skills, and listening skills (Sohoni et al., 2013). The need to support graduate teaching assistants with the skills mentioned above is essential. To date, no study has explicitly looked at graduate teaching assistants' knowledge and attitudes towards students with disabilities, and how graduate teaching assistants navigate higher education to meet the needs of their students and themselves.

Summary

In conclusion, the exploration of graduate teaching assistants is gaining momentum, specifically in teaching practices. Based on the literature review, five themes surfaced on the current state of graduate teaching assistants. Graduate teaching assistants' trajectory as future instructors could benefit from these five areas of improvement:

- teaching beliefs
- professional development
- effectiveness (classroom management and communication skills)
- mentorship
- inclusive teaching practice

Teaching beliefs are deeply rooted in the delivery of content to students. It is imperative to understand graduate teaching assistants' willingness to provide accommodations to students with disabilities. Tethered to the teaching beliefs of graduate teaching assistants is professional development. According to the literature, professional development is an essential component of the transition from student to instructor. Professional development is a bridge for molding an instructor's teaching beliefs, effectiveness, and equally as important, inclusive teaching practices. Graduate teaching assistants struggle to be effective instructors in classroom management and in communication with students. Challenges in these areas can potentially affect students with

disabilities if graduate teaching assistants have a difficult time articulating their thinking effectively about how learning occurs. Also, graduate teaching assistants' ability to cultivate a student-centered classroom environment versus a teacher-centered is critical. In conjunction with an instructor's teaching effectiveness is mentorship. Mentorship is paramount for graduate teaching assistant needs. A connection between mentorship, teaching beliefs, classroom management, and inclusive teaching practices affects students with disabilities. Ultimately, inclusive teaching practices are a concern. Graduate teaching assistants' inclusive teaching practices have been explored minimally in the literature. Inclusive teaching practices are at the core of teaching students with disabilities. Teaching beliefs and instructors' effectiveness are all inclusive teaching practices.

Chapter Three: Methodology

As explained in chapter two, the justification for the study was to address issues related to graduate teaching assistants, which surfaced from a systematic literature review. This study investigated graduate teaching assistants' knowledge and attitudes toward students with disabilities in higher education. The issues highlighted in the literature review revealed that research investigating graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education was scant. One study conducted by McCallister et al. (2014) focused only on graduate teaching assistants' knowledge and attitudes toward students with physical disabilities. The methodology used by McCallister et al. (2014) to measure attitudes toward students with physical impairments was through a survey format.

To be specific, McCallister et al. (2014) used a survey called the *Disabled Persons Scale* to explore several research questions. The research conducted on graduate teaching assistants' needs by Cho et al. (2011) also used a survey format. Jordan and Howe (2018) surveyed graduate teaching assistants on benefits and problems as doctoral students. Justice et al. (2017) used a survey focused on graduate teaching assistants' beliefs, practices, and preparation for teaching. Kinchin et al. (2009) surveyed graduate teaching assistants on their knowledge of learning dimensions. Marbach-Ad et al. (2014) surveyed graduate teaching assistants on science teaching beliefs and their teaching perceptions. Muzaka (2009) surveyed graduate teaching assistants' perceptions and reflections on teaching. This research topic of graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education was unique because it focused on multiple disabilities, including Learning Disabilities,

Intellectual Disability, Other Health Impairments, Hearing Impairments, and Visual Impairments, unlike trends in the literature to focus solely on physical impairments (McCallister et al., 2014).

Moreover, there were no studies exploring graduate teaching assistants' knowledge and attitudes towards students with disabilities that used the social model of disability as a framework to analyze the data. This study aimed to contribute to the literature on graduate teaching assistants' knowledge of and attitudes towards students with a range of disabilities. The study was further warranted as an effort to decrease barriers for students with disabilities in higher education by illuminating graduate teaching assistants' needs concerning teaching pedagogy. Also, this study provided valuable information for professional development facilitators, as well as university personnel who work with graduate teaching assistants to inform policy changes surrounding students with disabilities in higher education

Research Questions

The following research questions guided this study:

- 1) *What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*
- 2) *How do graduate teaching assistants at a selected higher education institution rate their knowledge of accommodations, disability laws, and disability support services for students with disabilities?*
- 3) *Do graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education vary by:*
 - a) *Gender*
 - b) *Discipline areas*
 - c) *Program degree*
 - d) *Semesters teaching as a graduate teaching assistant*
- 4) *What are the professional development needs of graduate teaching assistants related to students with disabilities?*

Methods and Procedures

Methods

Quantitative research was employed for this study. According to Creswell (2015), quantitative research identifies a problem based on trends or the need to explain how something occurs. Through quantitative research, numbers are gathered to explain the data (Check & Schutt, 2012). This research can be descriptive, explanatory, and evaluative (Check & Schutt, 2012), or an objective and statistical analysis of numbers used to understand and explain a

wonder (Ary et al., 2010). Also, quantitative research explains relationships among variables, so the researcher can make comparisons to past research studies (Creswell, 2015).

For this study, survey research was employed to address the research questions. In a survey research design, a researcher can obtain systematic and generalizable results that can be replicated in the future by others (Ary et al., 2018). Survey research delves into information from a group of individuals responding to given questions (Check & Schutt, 2012). Using this method, data can be compiled and used to explain a story (Fowler, 2014). It also works well on “a small group of people called the sample to identify trends in attitudes, opinions, behaviors, or characteristics of a larger group of people called the population” (Creswell, 2015, p. 21); it is a way to learn about a population, and a means to explain the results. In a survey research design, descriptive statistics measure the average tendencies in data, such as mean, mode, and median (Creswell, 2015). The researcher used this type of descriptive analysis to explain the results of this study. Descriptive statistics formed the basis of a story using numbers. The numbers provided a detailed account of the dispersion of variance, standard deviation, and mean scores and revealed any correlations among variables.

According to Creswell (2015), “variables are attributes [such as] attitudes towards the school bond issue or characteristics of individuals (e.g., gender) that researchers study” (p.13). There are independent variables and dependent variables. The independent variable is “...hypothesized to cause, or lead, variation in another variable group” (Check & Schutt, 2012, p.35). The dependent variable is “...hypothesized to vary depending on, or under the influence of another variable” (Check & Schutt, 2012, p.35). The independent variables for this study include gender, discipline area, degree, and the number of semesters teaching as a graduate teaching

assistant. Dependent variables are the graduate teaching assistants' knowledge and attitudes of students with disabilities.

Instrument

The researcher implemented a tool that was used previously by Sniatecki et al. (2015). The original survey instrument (Appendix B) was distributed to faculty at a mid-size public liberal arts university in upstate New York. The survey was titled *Faculty Attitudes and Knowledge Regarding College Students with Disabilities (SWD)*. The instrument was also previously used in 2009 by the University of Oregon to measure faculty members' attitudes and knowledge toward students with disabilities for internal data purposes (Sniatecki et al., 2015). The first author of the survey granted permission to use the survey (Appendix C) for this study. With permission from the author, the researcher made slight revisions to the questions and deleted irrelevant items and created the revised survey (Appendix D) to meet the needs of the study. The researcher removed three items from the original survey (see Appendix E). The items removed were based on the graduate teaching assistants' role. For example, to determine if accommodations were necessary without documentation and to advise a student to change his/her major due to limitations associated with his/her disability. The final item removed from the survey was related to supervision of staff within a department. Lastly, all questions were reworded to reflect positive statements. According to Fowler (2014) by rewording questions positively this essentially reduces any type of strong biases a participant may have towards a specific concept. Therefore, the instrument was purposefully reworded to reduce personal bias towards students with disabilities.

The original survey instrument was composed of 35 items and designed to measure faculty members' attitudes and knowledge of students with disabilities with regards to

accommodations, disability services, disability laws, and professional development needs. The survey assessed the following seven themes:

- Graduate teaching assistants' demographics
- Knowledge of students with disabilities
- Knowledge of services for students with disabilities
- Attitudes towards varying types of disabilities
- Mentorship of graduate teaching assistants
- Laws on disabilities
- Professional development for students with disabilities.

For this study, the researcher focused on the sections presented above. The survey contained 4-point Likert-type items (strongly disagree, disagree, agree, strongly agree) on knowledge, attitudes, accommodations, and graduate teaching assistants' interest in learning more about students with disabilities, along with a few questions related to laws and policies that pertain to students with disabilities in higher education. Furthermore, the researcher added four new items to the survey (see Appendix E). One of the items added was related to attitudes toward providing accommodations such as providing an alternative assignment to a student with a disability. Another item was added to ascertain whether or not graduate teaching assistants had communication with the Office of Disability Services. The final two items added were related to specific laws that provide safeguards for students with disabilities.

Reliability

Reliability suggests that scores from an instrument are consistent and stable (Creswell, 2015). Reliable survey results must provide steady information (Fowler, 2014). For example, the instrument must show internally consistent results. Cronbach's article (as cited by Mohajan,

2017) explained that “alpha values above 0.7 are generally considered satisfactory, above 0.8 are usually considered quite good, and above 0.9 are considered to reflect exceptional internal consistency” (p. 70). Sniatecki et al. (2015) found the internal consistency of some of the original survey items had a Cronbach's Alpha of .89, suggesting relatively high internal consistency, which is favorable for this study. Sniatecki et al. (2015) provided internal consistency measures for attitude questions only. In the current study, the measurement instrument measured knowledge and attitudes regarding students with disabilities in higher education. Although the instrument was originally developed to measure faculty attitudes and knowledge regarding students with disabilities in colleges, it applies to graduate teaching assistants since graduate teaching assistants often serve as instructors of record in institutions of higher education. Therefore, the researcher chose to use this tool for data collection.

Validity

Many researchers attempt to keep their studies free from error, but there is always a possibility of error. These errors could threaten the validity and reliability of a study, so the researcher must account for validity in addition to reliability. According to Fowler (2014), validity describes the relationship between an answer and a measure of a score. The goal of a survey is to reduce errors to reflect average scores. To measure validity is to adequately measure what is intended (Albarracin et al., 2005). There are three types of validity measures to measure variables: validity, generalizability, and causal validity, known as internal validity. Based on the survey instrument, measurement validity exists because it measures what it intends to measure (Check & Schutt, 2012). The selected instrument, *Faculty Attitude and Knowledge Regarding College Students with Disabilities (SWD) Survey*, has been proven to measure knowledge and attitudes towards students with disabilities and was assessed through content validity. The

authors of the survey used a few questions from the original instrument and used a review of the literature to explore elements.

Also, the survey included characteristics that reflected the institution and elements that would assist the office of disability services. The revised survey had content validity in that the researcher had a content area expert examine the content. The expert suggested slight changes to the survey, which were made by the researcher. Content validity occurs when experts provide opinions and review the literature that identifies aspects of the topic. For example, Sniatecki et al. (2015) stated the original survey was modified to explore faculty attitudes based on three types of disability since the three are the most prevalent types of disability a faculty member may encounter. Therefore, it measured the variables it intended to measure. In this same vein, this researcher reviewed the survey items in relation to the context and need of the study to strengthen content validity.

Although the method of data collection was quantitative, generalizability was not sought in this study. The researcher used non-probability-based sampling as defined by Check and Schutt (2012). Non-probability is a rigorous inquiry on a small population (Check & Schutt, 2012). This method was chosen because of its flexible sampling as anyone in the population is able to participate in a study. Therefore, a small portion of graduate teaching assistants from one higher education institution reveals a story. Lastly, causal validity, also known as internal validity, was given careful consideration during the selection of participants, instruments, and for attrition.

Population and Sampling

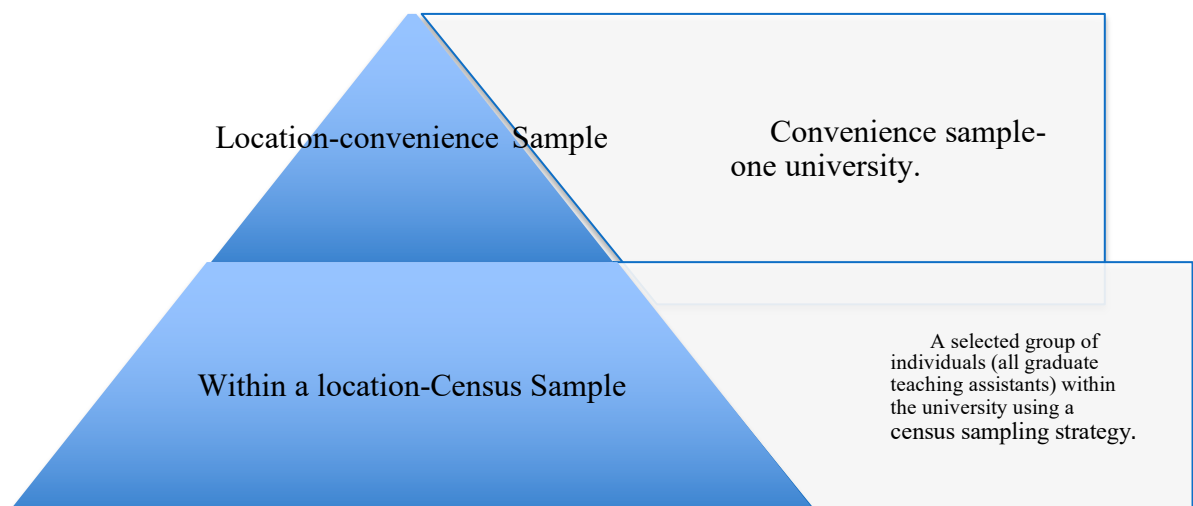
To conduct the survey, the researcher first needed to identify a population, sample frame, or target population, and create a plan to recruit a sample from the target population. To

statistically study an entire population, the sample population must have one characteristic that is unique to the group (Creswell, 2015; Moore et al., 2013). The sample of the population refers to a subset of the population (Check & Schutt, 2012). Since the researcher was not able to study an entire population, a selected subset of the population was chosen for this study. The population for the proposed study consisted of graduate teaching assistants from one university.

Therefore, the researcher implemented a multi-tiered sampling plan for this study. The multi-layered sampling plan was performed systematically (Lavrakas, 2008). The first level of the sampling strategy is related to location, or the university where the study took place. The second level was a census sample, in which all graduate teaching assistants from this university were invited to participate. As a result, the researcher included a convenience sample and a census sample, which qualify as non-probability approaches. See Figure 2 for a visual representation of this sample frame.

Figure 2

Multi-Layered Sampling Plan



The targeted population was graduate teaching assistants in the United States, and the sample frame was graduate teaching assistants from a research institution in southwest Florida.

The researcher chose this location due to the convenience of the locale being accessible by the researcher. According to Fink (2013), a convenience sample is a type of nonprobability sampling used to pull a sample simply because they are conveniently located in the population. Fink (2013) argued that convenience sampling could potentially create bias unless otherwise proven. The sample population was approached as a census, including all graduate teaching assistants from different disciplinary areas within the campus location.

According to Salant and Dillman (1994), there are four domains that constitute a good survey: 1) reduced coverage error to cover the population; 2) reduce sampling error and the research maximizes a large sample from the population in order to be representative of the population; 3) reduce measurement error and the researcher used a good instrument with clear questions, and 4) reduce non-response error where the researcher employed all necessary measures to achieve a high response rate. Ary et al. (2010) claimed that a census sampling strategy encompasses an entire population with a smaller portion. After careful examination of the target population or sample frame, a group of individuals was selected because it was small and easily identifiable, thus a sampling strategy can be used (Creswell, 2015). Hence, the use of a census approach can be used to provide descriptive statistics to explain a population (Creswell, 2015). For this study, the researcher used a census approach and descriptive statistics to describe the data from the sample size. The sample size was all current graduate teaching assistants from various discipline areas.

For this study, the researcher used non-probability sampling. The targeted population was graduate teaching assistants in the United States and the sample frame was a small population of graduate teaching assistants from a research institution in southwest Florida. The sample population included all graduate teaching assistants from different disciplinary areas within one

campus and can be described as purposive sampling within non-probability. Non-probability sampling was arranged with statistical control rather than volunteers or those who are available (Groves et al., 2009). Based on these features of a non-probability sample, bias was increased. Ary et al. (2010) explained that researchers should never assume results of findings are typical of a population but that results are predictable across time. The researcher explained standard errors with confidence that reflect the possibility of varied results across duplicates of the sample, just as Groves et al. (2009) did in their study.

Participants

Potential participants were graduate teaching assistants from a research university in the southeast region of the United States. The researcher emailed the Graduate Teaching Assistants Union and obtained permission to forward the researcher's intent of the study along with the link to the survey (Appendix F). The Graduate Teaching Assistants Union granted permission, and the email was sent to teaching assistants (Appendix G). The Graduate Teaching Assistants Union sent the researcher's email to all graduate teaching assistants along with the survey link weekly, for a total of six weeks. The email included a short introduction, which the researcher was, along with the survey link found in (Appendix H). In the email, the researcher explained the need to explore the perspective of graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education and explained the importance of the survey. Before the participants answered questions in the survey, each signed a consent form where participants agreed to the terms and acknowledged that their information and details in the survey would be kept confidential. They were also informed that data retrieved from the survey would not affect the status of employment or as a student. The participants were from a variety of colleges within the university. The number of graduate teaching assistants who responded to the survey was 126

out of 1443. The response rate was approximately nine percent of those invited. Demographic characteristics will be discussed further in chapter four.

Human Subjects Approval

Given approval from the research committee, the researcher submitted the proposal to the Institutional Review Board (IRB). Once approved, the researcher began the process of conducting the survey. The request and approval from the IRB at the home institution of the researcher can be found in Appendix I. An email was sent to the Graduate Teaching Assistants' Union to begin the recruitment process for the data collection portion of the study about graduate teaching assistants.

Procedures

The researcher surveyed participants through an online survey system. Fink (2013) explained that an online survey system provides real-time information, meaning it provides immediate information once a participant completes the survey, and it provides the total number of people who completed the survey. Another asset to the online survey system was the flexibility and low cost (Check & Schutt, 2012). Creswell (2015) suggested there were several online survey systems, such as Qualtrics or Survey Monkey, to choose from. The researcher chose and uploaded the survey to Qualtrics.

Ary et al. (2010) noted that email surveys had been successful on college campuses with students and faculty, companies, and their employees because of having universal email access. Fink (2013) contended that to increase the response rate, the researcher must have an awareness that respondents have accessibility to complete the survey. In addition, follow-ups with participants must be made, and all responses should be kept confidential. The response rate of a survey is an important consideration when conducting an online survey. The Graduate Teaching

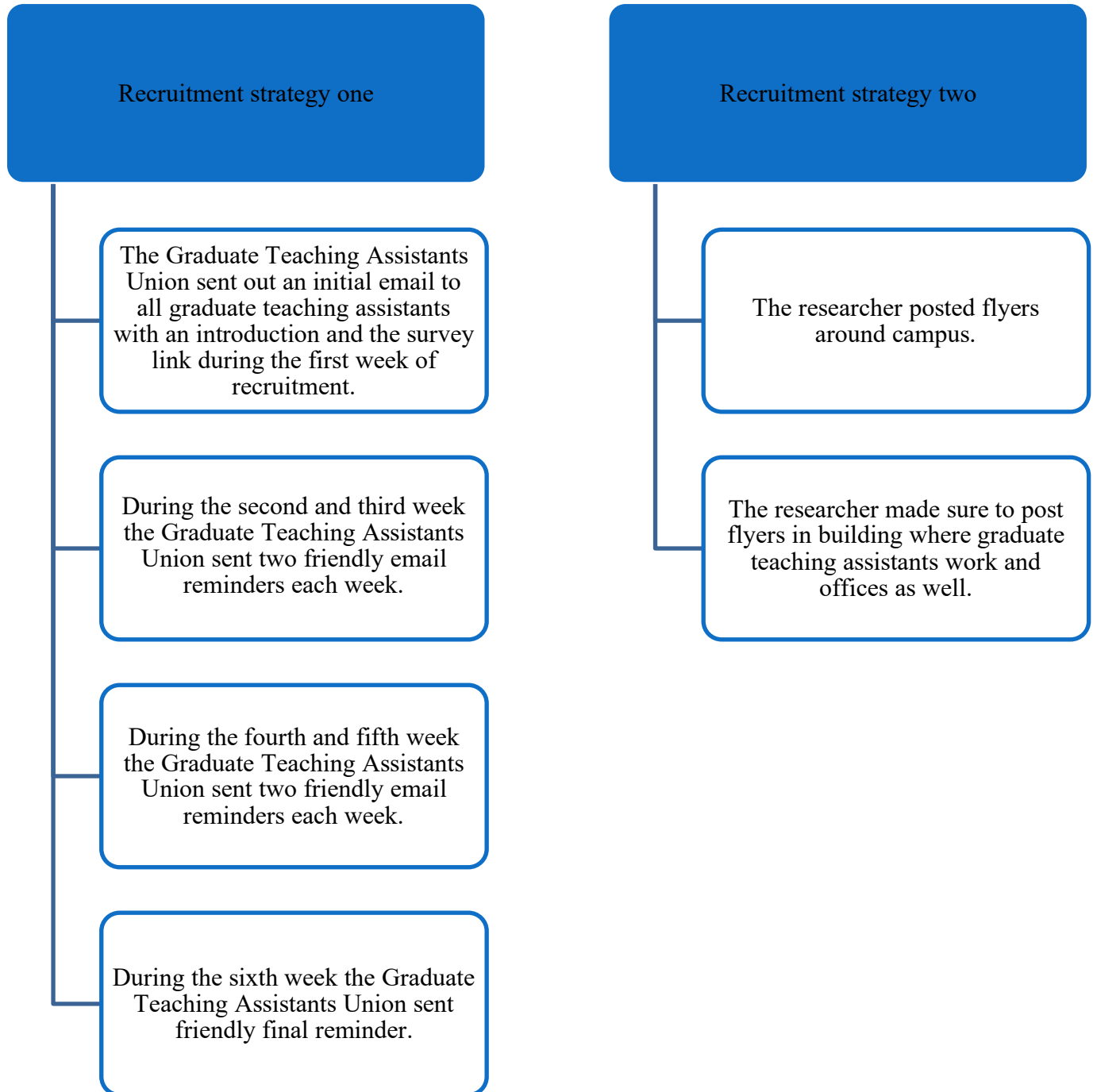
Assistants Union sent follow-up emails to potential participants to recruit participants several times over the course of six weeks. For an online survey, there are three procedures to increase the participants' response rate, and the researcher used two of these strategies. The first strategy used was to send an introductory message along with a survey link and ask participants to participate. During the second and third weeks of data collection, friendly reminders were sent to graduate teaching assistants who had not responded. The final strategy was for the Graduate Teaching Assistants Union to send a final friendly reminder to push for participants to complete the survey (Creswell, 2015). The Graduate Teaching Assistants Union agreed with those methods and sent out the researcher's message in an email along with the survey link for the study. The email included the purpose of the study, the reasons why graduate teaching assistants should participate, potential benefits, and the link to the survey. The informed consent form (Appendix J) explained the survey was voluntary, the purpose of the study, why graduate teaching assistants should participate, study procedures, alternative/voluntary participation/withdrawal, benefits and risks, privacy, and confidentiality, contact information, and lastly, a place to indicate if they agreed to take part in the study. Depending on consent, a link directs the recipient accordingly. For example, once the participant gave consent, the survey appeared. If a participant did not give consent, a "thank you" appeared, and the survey was not accessible. The survey took approximately 20-25 minutes to complete through Qualtrics.

A second strategy used was to post flyers on campus (Appendix K). Lavrakas (2008) explained that the use of flyers was a way to communicate indirectly and in advance, as a strategy to recruit participants. The flyer explained where the research was to take place, identified the lead investigator, explained the purpose of the study, told who was eligible and described the benefits, time commitment, and compensation. It also included a link to the survey.

The flyers were posted around campus to recruit graduate teaching assistants in addition to the email. For example, flyers were displayed in the graduate student lounge on bulletin boards for all to see. Also, flyers were posted inside offices where there were bulletin boards on display. The flyers were posted once given approval from the IRB and taken down after the sixth week of recruitment. The following were the necessary procedures for this study (Figure 3).

Figure 3

Procedures for Recruitment



The survey was open to all graduate teaching assistants for six weeks during the Fall 2020 semester. The survey was closed at the end of the survey window.

Ethics

Social research studies should design ways to minimize the risk to participants, respondents, and interviewers (Fowler, 2014). Survey research typically has fewer ethical dilemmas than experimental or field research design (Check & Schutt, 2012). Therefore, the researcher took appropriate measures to protect against ethical dilemmas. The researcher first informed potential participants who the researcher was and provided a statement outlining the purpose of the study and the benefits of the research. Also, the researcher assured potential participants that the study was voluntary, and those who chose to participate could withdraw consent to participate in the study at any time. The researcher protected the respondents' rights to privacy whether they chose to participate in the study or not.

Confidentiality

In addition to ethical considerations, the researcher also took measures to ensure confidentiality. Fink (2013) explained that confidentiality is a safeguard to protect participant information by keeping it private. According to Check and Schutt (2012), the most important ethical consideration is confidentiality; only researchers who conduct a study should have access to the information that respondents provide. The information provided should not identify any respondent or their information, nor should their responses (Creswell, 2015). This information should be stored in a safe, private location; only those working on the project should have access (Check & Schutt, 2012). Following this philosophy, the next step for the researcher was to use a credible and protected website to gather data. The researcher used a safeguarded server that was

arranged by the university, hence, only the researcher and members of the research committee, upon request, had access to the information.

Once participants had access to the survey, they completed the survey on their laptops, desktops, notebooks, tablets, and even their mobile phones (Fink, 2013). Respondents had a choice of when to complete the survey and where they wanted to complete the survey. The researcher was committed to participant privacy and maintained confidentiality during and after the study to protect their identities (Check & Schutt, 2012). Lastly, the data was saved on a protected web-based storage site acquired by the university to safeguard the confidentiality of the data.

Data analysis

When reporting data, the researcher noted the non-response rate and described the data using descriptive analysis for all questions on the survey (Creswell, 2015). Also, the researcher adjusted for all non-responses to the survey (Fowler, 2014). It is essential to select the most appropriate statistical analysis before conducting a study and later obtain conclusions from those statistics (Ary et al., 2010). The data was entered into SPSS and analyzed. The analysis focused on nominal data, which refers to when participants check off one or more categories that describe their trait (e.g., gender) (Creswell, 2015). The researcher explained the demographics of participants in section one of the data analysis.

Research questions were then analyzed by question. A visual representation of the data analysis can be found in Appendix L.

Research Question One

1. *What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*

Attitudes of graduate teaching assistants were measured on four-point Likert scales for items 18-22 & 24-26, where response options of “strongly disagree” equaled one and “strongly agree” equaled four.

The researcher presented the data and provided the missing responses of each question, mean, median, standard deviation, and percentage agreement. Percentage agreements were calculated by adding strongly disagree and disagree to strongly agree and agree. The questions were four-point Likert scale type questions with statements measuring whether the graduate teaching assistants believed students with specific disabilities can be successful and competitive in higher education (questions 18-26). Graduate teaching assistants’ responses regarding ability of students with disabilities to be successful and to compete academically based on the disability type (Learning Disabilities, Autism, Intellectual Disabilities, Other Health Impairments, Hearing Impairments, Visually Impairments, Speech or Language Impairments, Emotional Disturbances, Orthopedic Impairments, and Traumatic Brain Injuries) were analyzed. The data from questions surrounding each disability category were analyzed and displayed in a table format (see chapter four) which shows the average scores from responses.

Research Question Two

2. How do graduate teaching assistants at a select higher education institution rate their knowledge of accommodations, disability laws, and disability support services for students with disabilities?

Data from knowledge of students with disabilities questions were presented in various formats. Awareness of accommodation questions was presented in a categorical response and percentage of response rate for each item. Questions addressing graduate teaching assistants’ awareness of the Office of Student Disability Services were analyzed using the average

percentage of “yes” or “no” responses. Data was presented in a chart, including the sample size, means, frequencies, and percentages of response for each item. The pictorial representation of the data displayed frequency and percentages of response for each item.

The first set of questions, items 14-15, related to knowledge about services was analyzed by the percentage of “yes” or “no” responses. Question 16, related to the resources available to students with disabilities, was analyzed by percentage for each possible answer. Question 17 was designed as a four-point Likert scale with response options of “strongly disagree” to “strongly agree.” The question was analyzed by the sample size, mean, frequency, and percentage of response rate. Furthermore, categorical response data to specific questions on knowledge base items 5-13 were represented by providing the response rate of each question, means, frequencies, and the percentages of responses for each item. Lastly, response data from disability laws questions were analyzed by the response rate of each question, means, frequencies, and the percentages of responses for items 27-29 on the survey. Responses to disability law statements were analyzed and presented based on the values for Likert responses where zero equaled “strongly disagree,” one equaled “disagree,” two equaled “agree,” and three equaled “strongly agree.” Also, data was displayed for each question, along with the average mean score for each statement.

The next set of response data was collected on graduate teaching assistants’ awareness of the Office of Student Disability Services. These questions were analyzed using the average percentage of “yes” or “no” responses to questions or statements. The table included the total responses by a percentage of a “yes” or “no” to each question and statement. One question was analyzed based on the values for Likert responses which were set as follows: zero equaled “strongly disagree,” one equaled “disagree,” two equaled “agree,” and three equaled “strongly

agree.” Also, data was displayed for each question, along with the average mean score for each question and statement.

In addition, the sets of questions on Accommodations, Disability Services laws, and Disability Laws were presented by the percentage of agreement for correlation exploration. Therefore, a Pearson Correlation was performed to answer the correlation among these variables. As such, there was a conversion process for these responses; for example, questions that yielded a “yes” response were given a value of one, and response of “no” was given a value of zero. The Likert scale response “strongly agree” and “agree” responses were given a value of one and questions responses that were “disagree” and “strongly disagree” were given a value of zero for a correlation analysis among the three-separate categories and among attitudes about these three categories.

Research Question Three

3. Do graduate teaching assistants’ knowledge and attitudes of students with disabilities in higher education vary by:

- a) Gender*
- b) Discipline areas*
- c) Program degree*
- d) Semesters teaching as a graduate teaching assistant*

Question three was answered using data analysis within variations such as gender, discipline area, program degree and number of semesters teaching as a graduate teaching assistant. A One-Way ANOVA was performed at an alpha level .05 for analysis. Depending on mean scores for the categories mentioned above, the researcher further investigated the between and within the group variations by gender, discipline area, program

degree, and a number of semesters teaching as a graduate teaching assistant. Also, the F test was performed, and the degrees of freedom were calculated to determine if there were any significant differences among the varying groups. In addition, a Post-hoc Analysis (Tukey's HSD) delineated any difference in graduate teaching assistants' responses. The researcher represented the data by providing the percentage agreement average. These questions were answered on a four-point Likert scale with response options of "strongly disagree" to "strongly agree." For analysis purposes, these questions were converted into percentage agreement for knowledge and attitudes.

Research Question Four

4. What are the professional development needs of graduate teaching assistants related to students with disabilities?

Data from questions related to an interest in the professional development of students with disabilities were analyzed by response rate, frequencies, and the percentages of response for each item since these questions were answered on a four-point Likert scale, with response options of "strongly disagree" to "strongly agree" for questions 30-31. In addition, question 32 was a category specifically focused on professional development. Participants were asked to identify what type of professional development they felt they needed. The analysis for this question was represented by the response rate and frequencies, along with the percentage of responses for each item.

Demographics of Selected Institution

Below is a visual representation of the number of graduate teaching assistants in each college for the selected institution surveyed. A total of 1,443 were graduate teaching assistants for the Fall 2020 semester. The table shows a breakdown of how many graduate teaching

assistants were employed by the college. The response rate from all graduate teaching assistants was less than ten percent, which means this sample is not representative of the total population. However, this data is a starting point for conversations.

Table 5

Demographics of Selected Institution

Colleges	Number of graduate teaching assistants in each college
Arts and Sciences	752
Business	81
Behavioral and Community Science	86
Global Sustainability	1
Education	100
Engineering	227
College of the Arts	89
Marine Science	10
Nursing	7
Public Health	90
Total of graduate teaching assistant	1,443

Reflexivity

The reflexivity statement provides the reader with background information as to why the researcher aligned with a specific paradigm. Reflexivity is about being aware of one’s subjectivity as a researcher and how subjectivity affects one’s research (Peshkin, 1988). The researcher chose quantitative methodology purposefully since the researcher has a learning

disability and chose to limit imposing any biases or personal opinions regarding students with disabilities in the study. Creswell (2015) explained in a quantitative study, the study itself does not bear biases or personal opinions.

The researcher aligns with a post-positivism paradigm for this dissertation, post-positivism blends positivism and interpretivism perspectives. A positivist paradigm views scientific knowledge as knowledge that reveals the truth about reality (Kaboub, 2008). Further, that truth is the same for everyone at a given time and place (Sipe & Constable, 1996). In addition, the positivist paradigm focuses on the measurement and gathering of data with an objective design to best answer questions, offer explanations, and predict behavior (Ary et al., 2010). Positivists believe "... in what we know, what we can know, and how we can know it," (Paul, 2005, p.4).

In contrast to the positivist perspective of objectivity, interpretivism seeks to understand a person's reality (Check & Schutt, 2012). Interpretivism holds that there are many truths because there is no one absolute truth between what is known and the participant (Sipe & Constable, 1996). For example, interpretivism endeavors to understand experience by relying on a person's interpretation and attempts to make sense of those experiences (Grbich, 2013).

The researcher believes in a balanced approach to conducting a study because the researcher is emotionally invested in this research. Positivists believe there are no absolute truths, and what is believed to be true today may not be true tomorrow (Paul, 2005). Post-positivists believe in the objectivity of reality. They are aware of the empirical reality while acknowledging that complexity limits reality and any bias or other limitations brought to the study by the researcher (Check & Schutt, 2012). Post-positivism attempts to encapsulate reality

while acknowledging that reality cannot be fully acquired, only approximated (Denzin & Lincoln, 2013).

Furthermore, post-positivists are aware that the perceived objectivity of reality will never occur through the scientific method (Check & Schutt, 2012). Also, post-positivists believe in the need to reduce any personal bias and prejudices towards the research and the participants (Panhwar et al., 2017). The goal of a post-positivist researcher is to dissect the truth by examining what may affect the results (Panhwar et al., 2017). Researchers are aware that there is no singular truth and need to explore the event as much as possible (Panhwar et al., 2017).

As such, the researcher selected a survey tool to remain objective based on the researchers' experience as a graduate teaching assistant with a learning disability. The survey tool was the best way to distance her personal predisposition to uncover graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education.

Summary

Chapter three introduced a recap of the literature review from chapter two and justified the need to conduct a survey on graduate teaching assistants' knowledge and attitudes towards students with disabilities. The researcher presented research questions along with the methodological approach for the proposed study. Methods and procedures were explained to participants to maximize understanding of the proposed study. The researcher provided a history of the instrument, along with a description of each section of the survey. Next, the researcher conveyed the importance of reliability and validity in the research and then outlined the population and sampling of the proposed study. Also, the researcher explained who the participants were and the importance of the Institutional Review Board (IRB) for this proposed study. After that, the researcher discussed the process and the procedures for recruiting

participants for the proposed study. Then, the researcher explained the importance of maintaining an ethical stance in the research by emphasizing confidentiality and anonymity. One of the most important aspects of the research is data analysis. The researcher discussed the data collection process step by step. The researcher explained in detail how each question was analyzed and how each question is related to a research question, and then discussed reflexivity.

Chapter Four: Results

The purpose of this study was to explore graduate teaching assistants' knowledge and attitudes towards students with disabilities in a selected higher education institution. As presented previously in chapter three, a modified version of the survey instrument *Faculty Attitudes and Knowledge Regarding College Students with Disabilities* (Sniatecki et al., 2015) was used to gather data from graduate teaching assistants. Findings from this study about each of the research questions are presented in this chapter. A discussion of the findings in terms of the literature and implications for research and practice are provided in Chapter Five.

Research Questions

- 1) *What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*
- 2) *How do graduate teaching assistants at a selected higher education institution rate their knowledge of accommodations, disability laws, and disability support services for students with disabilities?*
- 3) *Do graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education vary by:*
 - a) *Gender*
 - b) *Discipline areas*
 - c) *Program degree*
 - d) *Semesters teaching as a graduate teaching assistant*

4) *What are the professional development needs of graduate teaching assistants related to students with disabilities?*

Data were collected through Qualtrics, an online data collection, and management system. The data was loaded into SPSS, a statistical computing program, and analyzed using descriptive and inferential statistical methods. Descriptive statistics were used to calculate frequencies, means, median, missing responses, and percentage agreement or disagreement. Three assumptions of One-Way ANOVA were met: Normality Distribution, Homogeneity of Variance, and Independence of Observation. A One-Way ANOVA was performed to interpret between and within-group variations by gender, discipline area, program degree, and semester teaching. An F test was performed, and degrees of freedom were calculated. Post-Hoc Analysis (Tukey's HSD) was performed to delineate any difference in graduate teaching assistants' responses.

Procedures

The researcher worked with the university Graduate Teaching Assistants Union to arrange to send out a letter of introduction about the study, information about the researcher, and the survey link to all graduate teaching assistants employed by the university. Additionally, a total of six reminders were sent following the initial correspondence. A total of 1,443 graduate teaching assistants were invited to participate in the survey. A total of 126 began the survey, with one respondent declining to participate at the informed consent step, resulting in 125 total participants. The researcher does not know information about the target population, and it is unknown to the researcher if the sample population is an accurate representation of the total population since the results were less than ten percent of the sample size. However, the response rate is not necessarily the only measure of representation. Fosnacht, et al. (2017) and Lambert

and Miller (2014) would argue that the low response rate does not always impact response representativeness in educational research.

Analysis

Before analysis, the data was cleaned. Cleaning the data meant inserting numerical values in place of Likert responses. The values for Likert responses were set as follows: one equaled “strongly disagree,” two equaled “disagree,” three equaled “agree,” and four equaled “strongly agree.” For true and false questions, “true” was given a value of one, and “false” a value of zero. Cleaning also entailed deleting any surveys that did not include demographics questions related to gender, discipline area, degree type, and semesters teaching as a graduate teaching assistant. A total of 125 responses were available for analysis, with non-responses treated as “not available.” The pre-published unmodified survey used in this study entailed 33 items, three of which were not used to investigate the research questions and thus are not reported in this chapter. Lastly, procedures were included in Chapter Three.

Results

Demographic information regarding respondents' gender, discipline areas, program degree, and the number of teaching semesters is depicted in Table 6. For the category of gender, 24 participants identified as “man,” representing 19.2 % of the total. Eighty-eight participants identified as “women,” representing 69.6% of the total. Nine participants identified as non-binary, representing 7.2% of the total. Participants were affiliated with six different colleges within the university: College of Arts, Arts and Sciences, Behavioral and Community Science, Education, Engineering, and Public Health (see Table 6).

The second area of demographic information dealt with college affiliation. There were six participants from the College of Arts, representing 5.3%; 56 from the College of Arts and

Sciences, representing 49.5%; 13 from the College of Behavioral and Community Sciences, representing 11.5%; 2 from the College of Business, representing 1.7%; 20 from the College of Education, representing 17.6%; nine from the College of Engineering, representing 7.96%; three from the College of Public health, representing 2.65%, two from the Division of Graduate Studies, representing 1.76%. Finally, the Colleges of Medicine and Nursing each had one participant, representing .88% each. The third area of information collected was regarding degree programs. Thirty-seven participants, representing 32.4% of the total, were working towards a master's degree. One participant, representing .87%, was pursuing a Specialist Degree. Seventy-four participants, representing 64.9% of the total, were pursuing a Ph.D., and two participants representing 1.75% of the total, reported they were seeking other degrees. The final demographic category included in the survey was the number of semesters the graduate assistant had been teaching. 78.5% percent of participants had taught between one to five semesters, 16.1% had taught six to ten semesters, and 4.46% had taught between 11 to 15 semesters.

Table 6*Demographic Characteristics of Graduate Teaching Assistants (N= 125)*

Basic characteristic	n	Percent
Gender		
Man	24	19.2
Woman	87	69.6
Non-binary	9	7.2
N/A	5	4
College Affiliation		
Arts	6	5.3
Arts and Science	56	49.5
Behavioral and Community Sciences	13	11.5
Business	2	1.76
Education	20	17.6
Engineering	9	7.96
Graduate Studies	2	1.76
Medicine	1	.88
Nursing	1	.88
Public Health	3	2.65
Degree Pursued		
Master's Degree	37	32.4
Specialist Degree	1	.87
Doctoral Degree	74	64.9
Other Degree	2	1.75
Semesters of teaching		
One to five semesters	88	78.5
Six to ten semesters	18	16.1
11 to 15 semesters	5	4.46
16 or more semesters	1	.89

Analyses and Findings

Findings concerning the research questions are presented in the following sections.

Research Question One

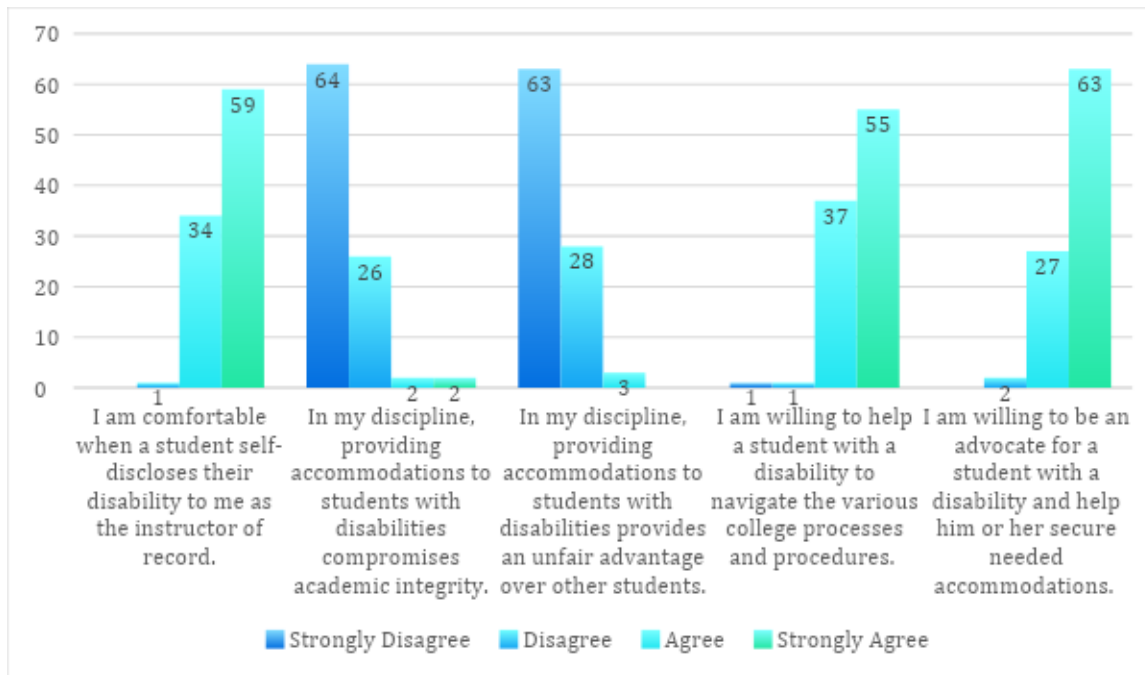
1. *What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*

To address this question, graduate teaching assistants were asked to rate a series of five statements related to attitudes towards students with disabilities (see figure 4). In addition, graduate teaching assistants were asked about specific disability categories. The mean results of the responses to these ten items produced an overall response average for research question one, as referenced in (Figure 4).

The first five statements in the series related to graduate teaching assistants' comfort level when students self-disclosed their disability status to them as instructors of record. The first statement provided for rating was, "I am comfortable when a student discloses their disability to me as an instructor of record." On average most participants answered between a three, which is agreed, and a four, strongly agree, yielding an average of ($M = 3.61$). The median was reported as strongly in agreement, which was four. The standard deviation score ($SD = .510$) indicates a broader range of variability of answers. The percentage agreement is 98%, which revealed a strong consensus among participants.

Figure 4

Attitudes Towards Students with Disabilities



The next item in the series dealt with accommodations for students with disabilities and academic integrity issues. The level of agreement with the statement, “In my discipline, providing accommodations to students with disabilities comprises academic integrity” was rated by respondents. The mean response of ($M = 1.38$) indicated most participants selected ratings between strongly disagree (one) and disagree (two), with the median being strongly disagree (one). The standard deviation score ($SD = .641$) and the percentage agreement was 42%, indicating most participants did not feel giving accommodations to students with a disability was compromising academic integrity.

Next, respondents were asked to express their attitudes about whether they thought students with disabilities were given unfair advantages. The statement provided for rating was: “In my discipline, providing accommodations to students with disabilities provides an unfair

advantage over other students.” The mean response of ($M = 1.36$) indicated participant ratings between strongly disagree (one) and disagree (two), and the median was reported as strongly disagreed (one). The standard deviation score ($SD = .545$) and the percentage agreement was 3%. Only a very small percentage of respondents felt accommodations created an unfair advantage. This data showed strong disagreement with the notion that providing accommodations to students with disabilities provides an unfair advantage over other students.

Next, participants were asked to express their willingness to help a student with a disability navigate various college processes and procedures. The statement rated was: “I am willing to help a student with a disability to navigate the various college processes and procedures.” As depicted in Table 7, the mean response of ($M = 3.55$) indicated participant ratings between strongly agree (four) and agree (three), with the median reported as strongly agree (four). The standard deviation score was ($SD = .579$), and 97% of participants indicated they felt comfortable helping when a student self-disclosed a disability.

Respondents were asked about their willingness to advocate for a student with a disability and help him or her secure needed accommodations. The statement was: “I am willing to be an advocate for a student with a disability and help him or her secure needed accommodations.” As depicted in Figure 4, the mean response of ($M = 3.66$) indicated participant ratings between strongly agree (four) and agree (three), and the median was reported as strongly agree (four). The standard deviation was ($SD = .519$), and the percentage of agreement indicated that 97% of participants were willing to advocate for a student with a disability.

Finally, the last set of five attitude questions related to specific disability categories. Participants were asked to respond to statements made about each of the thirteen disability categories. For example, respondents were asked to respond to statements such as: “I would like

more information about students with specific disabilities” and “I believe students with specific disabilities could be successful at the college level” for each disability category.

In Table 7, the disability categories are presented along with the mean scores, median, standard deviation of the responses, percent of agree and strongly agree, and missing responses. The researcher chose to focus the following discussion on the three disability categories with the highest percent agreement and the three disability categories with the lowest percent agreement, although all data are presented in (Table 7). The ranking was based on the highest and lowest percent agreement of responses by graduate teaching assistants; these data indicated positive attitudes towards these disability categories. Although all responses were positive in nature, there was a difference in the attitudes of graduate teaching assistants’ beliefs about which type of disabilities would most affect the success of students in higher education. There was a 12% difference between the highest percent and the lowest percent agreement. In addition, focusing on the percent agreement data rather than descriptive statistics is more easily understood. The discussion below focuses on the top three and bottom three disability categories in terms of percent of agreement with statements.

The highest percent of agreement regarding specific types of disabilities was regarding the Visually Impaired, with 98% agreement among graduate teaching assistants’ responses and a mean response of ($M = 3.53$). This indicated that most participant ratings were between strongly agree (four) and agree (three). Also, the median was reported as 3.6, and the standard deviation score was ($SD = .350$). This standard deviation is a close representation of the mean because it is tightly distributed by the mean. The disability category of Hearing Impaired had the second-highest percent agreement at 97% among graduate teaching assistant responses. The mean response of ($M = 3.54$), indicates that most participant ratings were between strongly agree (four)

and agree (three). Also, the median was reported as 3.6, and the standard deviation score was ($SD = .350$) indicating the agreement was tightly distributed by the mean. The categories of Other Health Impairments and Emotional Disturbance both had an agreement of 96% among graduate teaching assistant respondents and had the same median of 3.6, yielding the third-highest ranking. However, each consisted of different means and standard deviations. The mean score for Other Health Impairment was ($M = 3.49$) which indicated most participant ratings were between strongly agree (four) and agree (three), and the standard deviation was reported at ($SD = .372$), which indicated the agreement was tightly distributed by the mean. The mean score for Emotional Disturbance was ($M = 3.46$), which indicated most participant ratings were between strongly agree (four) and agree (three). The standard deviation was reported at ($SD = .415$), which indicated the agreement was loosely distributed by the mean.

Furthermore, the disability categories with the least percentage agreement were as follows: Intellectual Disability, followed by Autism, and Traumatic Brain Injury. The category with the least percent agreement was Intellectual Disability, with 86% agreement from respondents, and the mean response of ($M = 3.38$) indicated most participant ratings were between strongly agree (four) and agree (three). The median score was reported as 3.4, and the standard deviation score was ($SD = .436$), which indicated the agreement was loosely distributed by the mean. The percentage of agreement for Autism was 91% among graduate teaching assistants' responses, with the mean response of ($M = 3.51$), indicating most participant ratings were between strongly agree (four) and agree (three). The median score was reported as 3.6, and the standard deviation score was ($SD = .395$), which indicated the agreement was tightly distributed by the mean. The percent agreement was higher for Traumatic Brain Injury with 93% among graduate teaching assistants' responses, and the mean response of ($M = 3.38$) indicated

most participant ratings were between strongly agree (four) and agree (three). The median score was reported at 3.4, and the standard deviation score was ($SD = .423$), which indicated the agreement was loosely distributed by the mean. The mean ranged from ($M = 3.52$) to ($M = 3.38$), with just a small difference between the top and bottom means. All disability categories had 25 missing responses.

Table 7

Attitudes Towards Specific Disability Categories N= 100

Disability Category	Mean score	Median	Standard Deviation	Percent Agreement
Learning Disability	3.47	3.6	.373	95
Traumatic Brain Injury	3.38	3.4	.423	91
Autism	3.51	3.6	.395	93
Intellectual Disability	3.38	3.4	.436	86
Other Health Impairments	3.49	3.6	.372	96
Hearing Impairments	3.54	3.6	.350	97
Visually Impairments	3.53	3.6	.350	98
Speech or Language	3.51	3.6	.394	94
Emotional Disturbance	3.46	3.6	.415	96
Orthopedic Impairments	3.52	3.6	.378	94

The overall data on attitudes of graduate teaching assistants towards students with disabilities from a selected higher education institution was positive. The statements were averaged from the responses to create a summary of the data for research question one. Statements one, four, and five were framed as positive and supportive of students with a disability. The average mean response for these statements was 3.6. The mean indicates respondents chose ratings between agree and strongly agree in support of students with a disability. For statements framed in the negative, the average mean response was 1.37. This means respondents rated strongly disagree and disagree for statements that did not support students with a disability, with a tendency towards a strong disagreement of negative attitudes.

As far as disability categories, in general, graduate teaching assistants expressed positive attitudes towards students with disabilities across categories of disability. There was a 12% percent difference between the top highest percent agreement and the lowest percent agreement.

Research Question Two

2. *How do graduate teaching assistants at a select higher education institution rate their knowledge on accommodations, disability laws, and disability support services for students with disabilities?*

To address this question, graduate teaching assistants were given a series of items related to knowledge of accommodations, disability law, and disability support services. Participants were asked to indicate their familiarity with multiple concepts within each of these areas of knowledge.

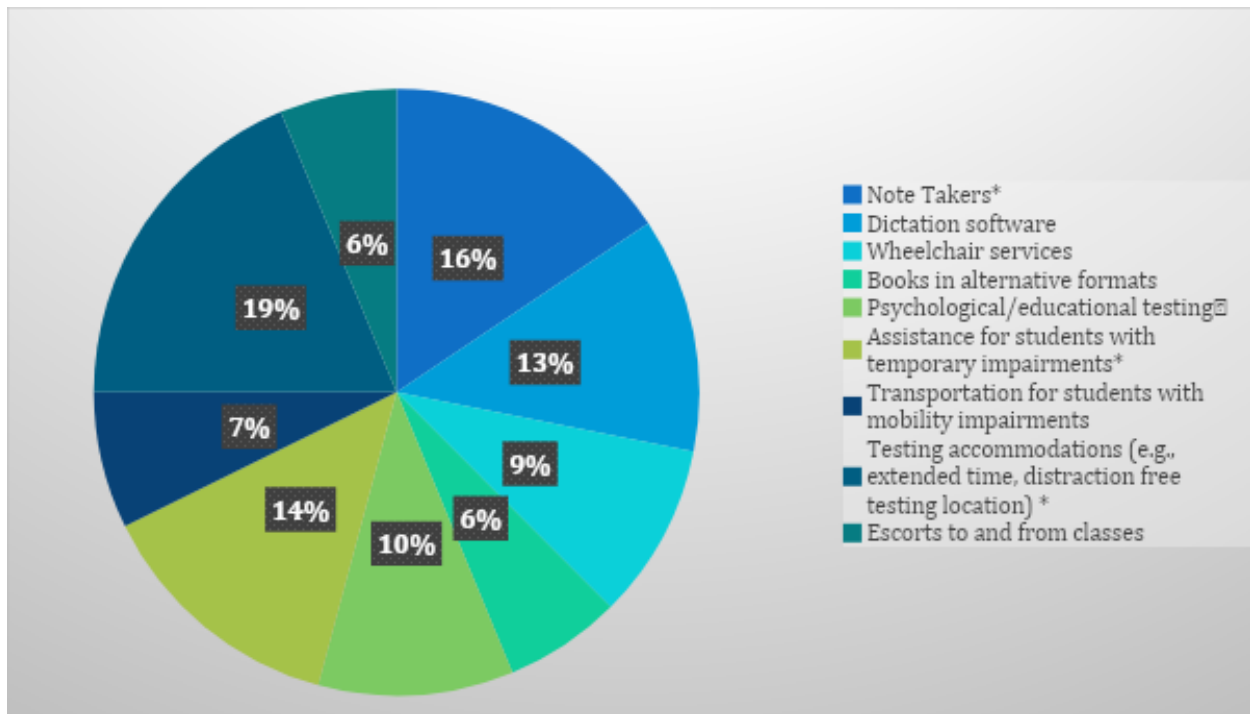
Accommodations

The first item in the series addressed graduate teaching assistants' knowledge about on-campus accommodations for students with disabilities. Respondents were given a list of nine

accommodations and were asked to check all that applied. Results indicated varying levels of knowledge regarding on-campus accommodations. Survey data showed that the participants were most knowledgeable about testing accommodations (e.g., extended time, distraction-free testing location) with 18% (n = 95) acknowledgment, note-taker with 15% (n = 78) acknowledgment, and assistance for students with temporary impairments with 13% (n = 68) acknowledgment. The participants were least knowledgeable about wheelchair services with 9% (n = 50) acknowledgment, transportation for students with mobility impairments with 7% (n = 36) acknowledgment, and escorts to and from classes with 6% (n = 32) acknowledgment (see Figure 5).

Figure 5

Knowledge of Accommodations



*Note: * Top three acknowledged accommodations. Percentages do not add up to 100% because participants could select more than one option on the list.*

Furthermore, respondents were asked a series of specific questions related to knowledge of accommodations. Ninety-nine percent of respondents stated that the university has an accessible collection of reference materials about students with disabilities. However, 30% of respondents felt that they had sufficient knowledge to make adequate accommodations for students with disabilities see (Table 8). Also, 27% of graduate teaching assistants reported receiving adequate support from their department/program unit in working with students with documented disabilities, and 81% of respondents also believed that the university campus is not accessible to students with disabilities. Lastly, 88% of the respondents were aware of procedures for students with physical disabilities in case of a fire or fire drill.

Table 8*Specific Accommodations Awareness*

Item	Total Responses	Percent Agreement Responses	Percent of Non-Agreement Responses	Mean Scores
My university has an easily accessible collection of reference materials about students with disabilities.	110	99	1	3.6
Currently, in my role, I have sufficient knowledge to make adequate accommodations for students with disabilities.	109	30	70	2.19
I received adequate support from my department/program/unit in working with students who have documented disabilities.	109	27	73	2.05
My university campus is accessible for students with disabilities.	108	19	81	2.03
I am aware of evacuation procedures for students with physical disabilities in the event of a fire or fire drill.	107	88	12	3.2

Note: Strongly agree and agree were combined, as was strongly disagree and disagree.

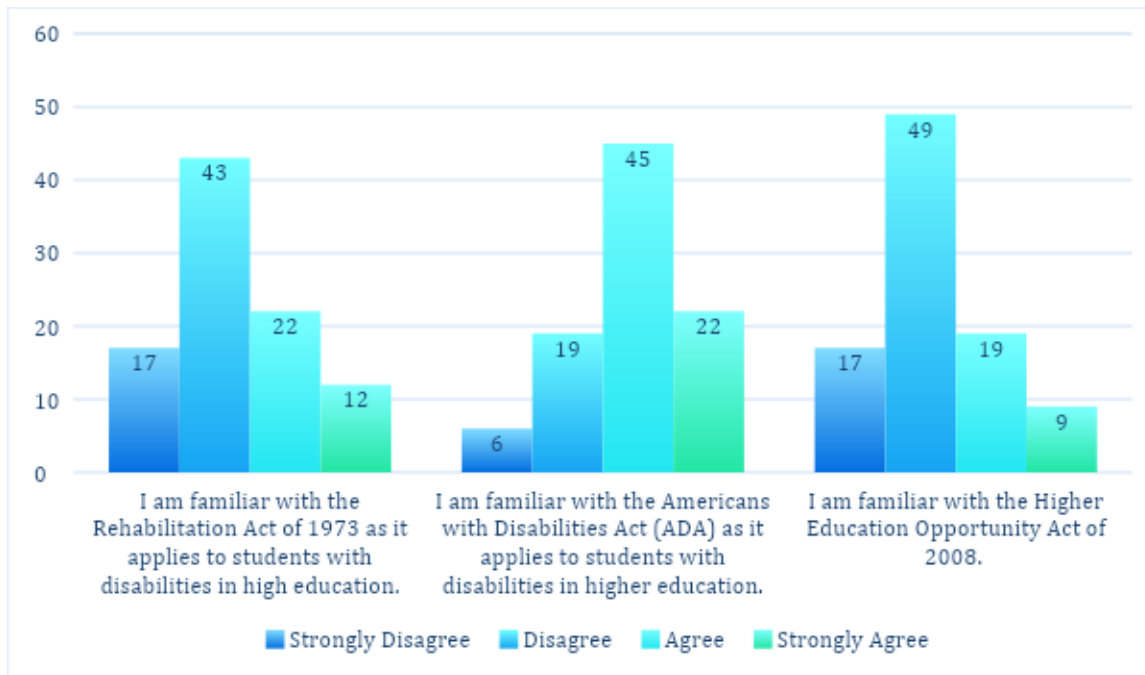
Disability Laws

The second item in the series addressed graduate teaching assistants' knowledge of three laws that safeguard students with disabilities in higher education (see Figure 6). A percentage agreement indicated whether participants had knowledge of the law. Response choices were: strongly agree, agree, disagree, and strongly disagree. Strongly agree and agree responses were coded together as a positive response to having knowledge of the law. Strongly disagree and disagree responses were coded together during the analysis phase as a negative response to knowledge of the law. This created a binary response of yes, there was knowledge or no, there was not.

Graduate teaching assistants were asked about three specific pieces of legislation. Responses to the survey indicated that 64% of graduate teaching assistants were unfamiliar with the Rehabilitation Act of 1973, which provides students with disabilities equal access to all aspects of higher education (U.S.C 705 (20), 2010). Seventy-one percent of respondents were unfamiliar with the Higher Education Opportunity Act (HEOA) of 2008, which provides resources and financial support for students with disabilities to attend higher education institutions (HEOA, 2008). To a lesser extent, only 27% of graduate teaching assistants were unfamiliar with the Americans with Disabilities Act (ADA), which safeguards students with disabilities against discrimination. Conversely, 73% percent of graduate teaching assistants reported being familiar with the Americans with Disabilities Act making it the single most recognized law.

Figure 6

Awareness of Disability Laws



Disability Support Services

The final items addressed graduate teaching assistants' knowledge of students with disabilities to students without disabilities ratios, familiarity with the university student disability office, knowledge of the services for students with disabilities, specific matters of instruction requiring accommodations, and guidance from the services office (see Table 9).

In general, graduate teaching assistants' responses indicated a lack of familiarity with higher education attendance demographics. In response to the question, "Do you know the proportion of students with disabilities who attend postsecondary schools in comparison to students who do not have disabilities," 65% of respondents indicated that they did not know that information. However, 69% of respondents indicated they were familiar with the Office of Students with Disabilities (OSD). When asked about contact with the Office of Students with

Disabilities (OSD), 20% of respondents reported making contact, and 80% reported they did not contact the OSD about students needing accommodations.

In terms of knowledge regarding the services and guidance available from the office for students with disabilities, graduate teaching assistants were asked if students with disabilities would receive support services at the university when the students self-disclosed their disability to the university. Results indicated that 93% of graduate teaching assistants agreed support would be available for students who self-disclosed their disability. Sixty percent of those respondents indicated that if a student with a disability was having difficulties, graduate teaching assistants would be certain about where they could find additional support on campus (see Table 9).

Lastly, respondents were asked whether they would allow for a course substitution for a student with a disability if the substituted course did not significantly alter the program requirements. Results indicated 97% of respondents would allow such a substitution.

Table 9*Knowledge of the Office of Disability Services*

Items	Total responses	Percentage of Agreement Responses	Percentage of Non-Agreement Responses
Do you know the proportion of students with disabilities who attend postsecondary schools in comparison to students who do not have disabilities?	113	35	65
If a department allowed a student with a documented disability to substitute an alternative course for a required course if the substitution did not dramatically alter the program requirements, I would.	109	97	3
Students with disabilities will receive support services at my university when they disclose their disability.	109	93	7
Are you familiar with the Office for Students with Disabilities (OSD) at your university?	104	69	31
In the past, I have contacted the OSD at my university with regard to my students needing accommodations.	104	20	80
Knowledge of disability support services			
Students with disabilities are having difficulties, I am certain about where I can find additional support on campus?	125	60	40

Note: Strongly agree and agree were combined. Same procedure was completed to strongly disagree and disagree.

Correlation Among Knowledge of Accommodations, Disability Laws, and Disability Support Services

The researcher wanted to explore if there was a correlation between attitude and knowledge. The literature on faculty attitudes towards students with disabilities revealed that

attitudes are dependent on the level of knowledge (Gonzalez & Elliott, 2016; Leyser et al., 2011). Therefore, the researcher conducted a Pearson Correlation Coefficient on attitudes based on the three knowledge categories, and then a final Pearson Correlation Coefficient within the three categories of knowledge-based questions.

A Pearson Correlation Coefficient was calculated to examine the strength of the relationships between graduate teaching assistants' attitudes and the three variables related to knowledge: accommodations knowledge, disability laws, and disability support services. A separate Pearson Correlation Coefficient was calculated to examine relationships among accommodation knowledge, disability laws, and disability support services (*see Table 10*).

First, the researcher categorized clusters of statements. The category 'Attitudes' had a total of eight questions, all on a four-point Likert scale. The accommodations category had a total of nine questions. This category had two questions that asked for a yes or no response and seven four-point Likert scale type statements. The 'Disability Law' category had a total of three, four-point Likert scale questions and the 'Disability Support Services' category had a total of five questions, two of which had four-point Likert scale questions, and three yes or no response questions. The mean of each category was then used to find correlations among the categories. Some items reflected an agreement and non-agreement, and the average scores were used to then perform the Pearson Correlation Coefficient among the various variables.

A Cronbach's Alpha was computed to provide internal consistency. The category for attitude had a Cronbach's Alpha of .698, and the overall knowledge had a Cronbach's Alpha of .663, which indicated a poor correlation. Acceptable internal consistency was found for the accommodations category with a Cronbach's Alpha of .827, and a knowledge of law category with a Cronbach's Alpha of .832. Support services knowledge had a Cronbach's Alpha

of .296, which indicated an unacceptable correlation and overall attitudes had Cronbach's Alpha of .886, which indicated good internal consistency.

Pearson correlations were run for all combinations between these four scales. The relationship between attitudes about students with disabilities and accommodation knowledge was statistically significant and positive, but the relationship was weak ($r = .250, p = .008$). The relationship between attitudes and disability laws was statistically significant and positive, but the relationship was weak ($r = .234, p = .023$). The relationship between attitudes and disability services yielded statistically insignificant results with no correlation ($r = .062, p = .525$). The relationship between accommodation knowledge and disability law was statistically significant and moderately positive, but the relationship was weak ($r = .351, p = .001$). The relationship between attitudes and accommodations knowledge was statistically significant and moderately positive, and the relationship was moderate ($r = .449, p = .001$). Finally, the relationship between disability support services and disability laws was statistically significant and positive, but the relationship was weak ($r = .347, p = .000$).

Table 10

A Pearson Correlation on Graduate Teaching Assistants' Relationship Between Attitudes Accommodations Knowledge, Disability Law Knowledge, and Disability Support Service Knowledge and Among Accommodation Knowledge, Disability Law Knowledge, and Disability Support Services Knowledge

	Attitudes	Accommodation Knowledge	Disability Law Knowledge	Disability Support Service Knowledge
Attitudes	1			
Accommodation Knowledge	0.2506009	1		
Disability Law Knowledge	0.2343288	0.3511678	1	
Disability Support Service Knowledge	0.06299408	0.4499693	0.3471492	1

Research Question Three

3. Does graduate teaching assistants' knowledge and attitude of students with disabilities in higher education vary by:

- a) Gender*
- b) Discipline areas*
- c) Program degrees*
- d) Semesters teaching as a graduate teaching assistant?*

Research question three explored selected survey responses by gender, discipline areas, program degree, and the number of semesters teaching as a graduate teaching assistant.

Respondents were asked to rate statements regarding their knowledge of students with disabilities. A total of 125 graduate teaching assistants responded to the survey. Before any

analysis was conducted, assumptions of One-way ANOVA were tested for knowledge and attitudes for each subcategory along with an F-Test for each subcategory. The three assumptions of One-way ANOVA performed were: Independence of Observations, Normality Distribution, and Homogeneity of Variance for each variation, such as gender, discipline area, program degree, and the number of semesters taught. Once all three assumptions were met, a One-way ANOVA was performed. The results are discussed below. Also, the test of Independence of Observations was met since the survey did not involve any matching independent variables by knowledge and attitudes questions.

Knowledge and Attitude by Gender

Assumptions of Normality Distribution

An average was taken to address knowledge delineated by gender. The normality distribution assumption was evaluated by using the Shapiro-Wilk's test of ($p > .05$) along with a visual inspection of the corresponding histograms. Normal Q-Q plots and box plots showed that the mean scores were approximately distributed for all genders. Results are presented in Table 11. The Shapiro-Wilk results for degrees of freedom indicated statistically significant differences in mean scores from non-normality for man df 22 with a $p < .001$ and woman df 82 with a $p < .001$, while the results for man and non-binary were insignificant differences in mean scores.

An average was taken to address attitudes delineated by gender. The assumption of normality distribution was evaluated using histograms and a Shapiro-Wilk's test at ($p > .05$) along with a visual inspection of the histograms. Normal Q-Q plots and box plots showed that the mean scores were approximately distributed for all genders. Results are presented in Table 11. The Shapiro-Wilk results for degrees of freedom indicated a statistically significant difference in mean scores for non-normality for women, df 70 with a $p < .031$, had significant

mean scores differences in attitudes towards students with disabilities in higher education.

Conversely, the results for man, df 19 with a $p < .506$, and non-binary, df 8 with a $p < .211$, as no significant differences in mean scores for students with disabilities in higher education.

Assumption of Homogeneity of Variance

The assumption of homogeneity of variance was tested for gender on knowledge and was satisfied based on Levene's Test, $F(2,117) = .067$, $p = .935$. Results from Levene's test indicated no violation had occurred with the assumption. The assumption of homogeneity of variance was tested for gender on attitude and was not satisfied based on Levene's Test, $F(2,97) = 3.38$, $p = .038$. Results from Levene's test indicated there are significant differences in mean scores for genders.

Descriptive Statistics

The descriptive statistic for knowledge of gender was a total mean score of 1.69. Although there were no significant differences in mean scores, all groups lacked an understanding of students with disabilities in higher education. Also, the descriptive statistic for gender attitudes towards students with disabilities illustrated the average response for a total mean score of 3.46. Even though there were significant differences in mean scores, each gender agreed with positive attitudes towards students with disabilities in higher education.

Table 11*Gender Descriptive on Knowledge and Attitude*

Descriptive	Mean	95% confidence interval for mean		Standard Deviations	Skewness	Kurtosis
		Lower Bound	Upper Bound			
Knowledge						
Men	1.74	1.42	2.07	.772	-2.09	5.06
Women	1.74	1.74	1.59	.726	-.953	.576
Non-binary	1.59	1.13	2.05	.597	-.460	-1.20
Attitudes						
Men	3.5	3.38	3.6	.251	-.581	.9793
Women	3.38	3.30	3.46	.350	-.293	-.866
Non-binary	3.5	3.23	3.80	.340	-.457	-1.50

Note: Number of participants for knowledge are as follows: Man (n=24), Women (n=87), and non-binary (n=9). A total of five non-responses for gender on knowledge-based questions.

Knowledge and Attitude by Discipline Areas*Assumption of Normality Distribution*

The assumption of normality distribution was met by evaluating histograms and the Shapiro-Wilk's test of ($p > .05$). Along with a visual inspection of the histograms, normal Q-Q plots and box plots showed that the mean scores were approximately distributed for all discipline areas. Results are presented in Table 12. The Shapiro-Wilk results for degrees of freedom are as indicated for the following colleges: the College of Arts a *df* 6 with a $p > .246$, the College of Behavioral and Community Science *df* 13 with a $p > .541$, the College of Education *df* 20 with a $p > .166$. Results from these tests indicated no significant difference in mean scores when comparing discipline areas for knowledge about students with disabilities in higher education.

However, the results from the three colleges indicated significant mean differences. They were the College of Arts and Sciences with a df 56 with a $p > .001$, the College of Engineering with a df 9 with a $p > .002$, and the College of Public Health with a df 3 with a $p > .000$.

The assumption of normality distribution was evaluated using histograms and a Shapiro-Wilk's test at ($p > .05$). A visual inspection of the histograms, normal Q-Q plots, and box plots showed that the mean scores were approximately distributed for all discipline areas. Results are presented in Table 13. The Shapiro-Wilk results for the degrees of freedom are as indicated for the colleges: the College of Arts a df 6 with a $p > .224$, the College of Arts and Sciences a df 48 with a $p > .063$, the College of Behavioral and Community Science df 12 with a $p > .619$, the College of Education df 19 with a $p > .546$, the College of Engineering df 7 with a $p > .797$ and the College of Public Health df 3 with a $p > .970$. These tests indicated no significant differences in mean scores when comparing discipline areas for attitudes towards students with disabilities in higher education.

Assumption of Homogeneity of Variance

The assumption of homogeneity of variance was tested for discipline areas on knowledge. Results from Levene's test, $F(7,103) = .984$, $p = .447$, indicated no assumptions were violated. The assumption of homogeneity of variances was tested for discipline areas on attitudes. The assumptions were not violated and were satisfied based on Levene's Test, $F(5,90) = .308$, $p = .907$.

Descriptive Statistics

The descriptive statistics for knowledge in discipline areas had a total mean score of 1.69. Although there were no significant differences in mean scores, all groups lacked an understanding of students with disabilities in higher education. Descriptive statistics for

discipline areas for attitudes towards students with disabilities had a total mean score of 3.4, which means there was an agreement of positive attitudes (see table 12).

Table 12*Discipline Areas Descriptive on Knowledge and Attitude*

Descriptive	Mean	95% confidence interval for mean		Standard Deviations	Skewness	Kurtosis
		Lower Bound	Upper Bound			
Knowledge						
Arts	1.57	.757	2.37	.774	-.328	-1.35
Arts and Science	1.86	1.71	2.02	.573	-1.32	1.95
Behavioral and Community Science	1.91	1.58	2.23	.535	-0.83	-.759
Education	1.83	1.60	2.07	.491	-.305	.364
Engineering	1.84	1.17	2.51	.866	-1.66	1.82
Public Health	1.85	.630	3.08	0.49	-1.73	N/A
Attitudes						
Arts	3.5	3.15	3.9	.353	-.779	-1.15
Arts and Science	3.6	3.26	3.46	.349	-.385	-.825
Behavioral and Community Science	3.4	3.22	3.6	.331	-.344	-1.08
Education	3.4	3.14	3.5	.319	-.733	.428
Engineering	3.4	3.14	3.76	.336	.457	.081
Public Health	3.4	2.72	3.21	.300	.081	N/A

Note: N means number of participants as follows: Arts (n=6), Arts and Sciences (n=56), Behavioral and Community Science (n=13), Education (n=20), Engineering (n=9) and Public Health (n=3). A total of 12 non-responses for discipline areas on knowledge and attitude questions. N/A means no data available.

Knowledge and Attitude by Program Degree

Assumption of Normality Distribution

Respondents' knowledge responses were averaged for each degree program. The responses were averaged to answer knowledge questions by program degree. The assumption of the normality distribution test was met by using histograms and the Shapiro-Wilk's test of ($p > .05$), along with a visual inspection of the histograms. Normal Q-Q plots and box plots showed that the mean scores were approximately distributed for all programs. The results of the test are presented in Table 13. The Shapiro-Wilk results for degrees of freedom indicated the master's degree programs had a df 37 with a $p > .008$, and the Ph.D. program had a df 73 with a $p > .001$, which indicated significant differences in mean scores when comparing program degrees. Lastly, there was no data to report on other degrees due to the lack of completion of the survey by graduate teaching assistants in those programs.

Graduate teaching assistants' responses to questions regarding attitudes were averaged for each degree program. The assumption of normality distribution was evaluated using histograms and a Shapiro-Wilk's test of ($p > .05$). A visual inspection of the histograms, normal Q-Q plots, and box plots showed that the mean scores were approximately distributed for all program areas. The results of the test are presented in Table 14. The Shapiro-Wilk results for degrees of freedom showed that the master's degrees program had a df 31 with a $p > .033$, indicating significant differences in mean scores. The Ph.D. degree program had a df 63 with a $p > .194$, indicating there were no significant differences in mean scores. Lastly, there were no data to report on other degrees due to the lack of survey completion by graduate teaching assistants in these categories.

Assumptions of Homogeneity of Variance

The assumption of homogeneity of variance test for program degrees on knowledge was satisfied based on Levene's Test, $F(2,110) = .069, p = .934$. Results from Levene's test indicated that results had not violated the assumption. The assumption of homogeneity of variance was tested for program degrees on attitudes. Results were satisfied and the assumptions were not violated based on Levene's Test, $F(2,95) = .90, p = .410$.

Descriptive Statistics

The descriptive statistics for knowledge in program degrees had a total mean score of 1.87. Although there were no significant differences in mean scores, all groups lacked an understanding of students with disabilities in higher education. Descriptive statistics for program degrees for attitudes towards students with disabilities had a total mean score of 3.27, which means there was a close agreement of positive attitudes towards students with disabilities in higher education.

Table 13*Program Degree Descriptive on Knowledge and Attitudes*

Descriptive	Mean	95% confidence interval for mean		Standard Deviations	Skewness	Kurtosis
		Lower Bound	Upper Bound			
Knowledge						
Masters' degree	1.68	1.47	1.90	.642	-.928	.241
Ph.D.	1.8	1.73	2.02	.607	-1.17	1.17
Other degree	2.14	1	2	.606	.606	N/A
Attitude						
Masters' degree	3.39	3.39	3.52	.355	-.459	-1.01
Ph.D.	3.42	3.34	3.50	.539	-.425	-.396
Other degree	3	3	3	0	N/A	N/A

Note: N means the number of participants as follows: Master's degree (n= 37), Ph.D. (n= 74) and Other degree (n= 2). N/A means no data available. A total of 11 non-responses for program degree. The Specialist degree had one response for attitudes.

Knowledge and Attitude by Semester Teaching***Assumption of Normality Distribution***

An average of the responses was taken for the knowledge statements category then grouped by the number of semesters teaching. The assumption of normality distribution was evaluated using histograms and a Shapiro-Wilk's test of ($p > .05$), along with a visual inspection of the histograms, normal Q-Q plots, and box plots. The evaluation showed that the mean scores were approximately distributed for all semesters. The results of the test are presented in Table 14. The Shapiro-Wilk results indicated the degrees of freedom of df 88 with a $p > .001$ for one to five semesters of teaching. For six to ten semesters of teaching the degrees of freedom was df 18

with a $p > .030$. For 11 to 15 semesters of teaching, the degrees of freedom was $df 5$ with a $p > .001$. Each category had significant differences in mean scores for knowledge of students of disabilities.

An average of the responses was taken for the attitude statements category and then grouped by a number of semesters teaching. The assumption of normality distribution was evaluated using histograms and a Shapiro-Wilk's test of ($p > .05$). A visual inspection of the histograms, normal Q-Q plots, and box plots showed that the mean scores were approximately distributed for all semesters. The results are presented in Table 14. The Shapiro-Wilk for degrees of freedom indicated one to five semesters of teaching had a $df 75$ with a $p > .085$, and no significant differences in mean scores. Six to ten semesters of teaching had a $df 17$ with a $p > .140$, and 11 to 15 semesters of teaching had a $df four$ with a $p > .334$, indicating no significant differences in mean scores for graduate teaching assistants' attitudes about students of disabilities by semesters of teaching.

Assumptions of Homogeneity

The assumption of homogeneity of variances was tested for the number of semesters teaching on knowledge, and results were satisfied as indicated by Levene's Test, $F (2,108) = 2.33$, $p = .102$, indicating that results had not violated the assumption. The assumption of homogeneity of variance was tested for the number of semesters teaching by attitude was satisfied, and assumptions were not violated based on Levene's Test, $F (2,94) = .326$, $p = .732$.

Descriptive Statistics

The descriptive statistic for knowledge for the number of semesters teaching yielded a total mean score of 1.91. Although there were no significant differences in mean scores, all groups lacked an understanding of students with disabilities in higher education.

Descriptive statistics for the number of semesters teaching yielded a total mean score for attitudes of 2.89, which means there was a close agreement of positive attitudes towards students with disabilities. The test of Independence of Observations was not conducted since the survey did not involve any matching of independent variables.

Table 14

Semesters Teaching Descriptive on Knowledge and Attitudes

Descriptive	Mean	95% confidence interval for mean		Standard Deviations	Skewness	Kurtosis
		Lower Bound	Upper Bound			
Knowledge						
Semesters 1-5	1.75	1.62	1.88	.603	-.916	4.98
Semesters 6-10	2.08	1.83	2.33	.508	-1.41	2.87
Semesters 11-15	1.9	.585	3.27	1.08	-2.19	4.86
Attitude						
Semesters 1-5	2.86	2.77	2.94	.390	-1.32	4.77
Semesters 6-10	2.82	2.62	3.03	.393	-1.70	3.88
Semesters 11-15	3	3	3	0	N/A	N/A

One-way ANOVA Results

Gender

The independent variable between-groups One-way ANOVA yielded no significant differences in mean scores for graduate teaching assistants' gender on knowledge and attitudes.

For knowledge students with disabilities, $F(2,117) = .179$, $p = .837$, there were no significant differences for genders and for knowledge (see Table 15) and, $F(2,97) = 1.37$, $p = .258$, which means no significant differences existed for gender for attitudes towards students with disabilities in higher education (see Table 16). The Post-hoc test results indicated no significant differences in mean scores among the gender groups, with a $p < .802$ for knowledge and a $p < .489$ for attitudes.

Discipline Area

The One-way ANOVA yielded no significant differences in graduate teaching assistants' discipline area on knowledge and attitudes of students with disabilities, $F(9,103) = 1.313$, $p = .239$ and attitudes, $F(7,90) = .540$, $p = .802$, which indicated there were no significant differences within the discipline areas for knowledge (see Table 15) and attitudes (see Table 16). Post-Hoc test results indicated that at least one group had fewer than two cases, so no test could be run.

Program Degree

The independent variable between-group One-way ANOVA yielded no significant differences in graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education with an, $F(3,110) = .845$, $p = .472$ and attitudes, $F(3,95) = 0.103$, $p = .958$, which indicated that the p-value had no significant difference within the degree programs by knowledge (see table 15) and attitudes (see Table 16). Post-Hoc test results indicated that at least one group had fewer than two cases, so no test could be run.

Semesters Teaching

The independent variables between groups One-way ANOVA yielded no significant differences in knowledge and attitudes for graduate teaching assistants' number of semesters

teaching, $F(3,108) = 1.49$, $p = .220$ and for attitudes $F(3,94) = .274$, $p = .844$. The p-value indicated no significant differences in knowledge (see Table 15) and attitudes of students with disabilities (see Table 16). Post-hoc test results indicated that at least one group had fewer than two cases, and the test results were not available.

To sum up the findings for One-way ANOVA for knowledge and attitudes, there were no significant findings for each category in knowledge and attitudes. There was no significant difference in gender for knowledge and attitude. The same is true for discipline areas, program degree, and teaching semesters. No significance in the areas of knowledge and attitudes were found in any category.

Table 15*One-way ANOVA by Knowledge*

		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	.189	2	.095	.179	.837
	Within Groups	61.97	117	.530		
	Total	62.16	119			
Discipline Area	Between Groups	4.61	9	.513	1.28	.255
	Within Groups	41.16	103	.400		
	Total	45.78	112			
Program Degree	Between Groups	1.04	3	.348	.845	.472
	Within Groups	45.31	110	.412		
	Total	46.35	113			
Semesters Teaching	Between Groups	1.70	3	.588	1.49	.220
	Within Groups	41.06	108	.380		
	Total	42.76	111			

Table 16*One-way ANOVA by Attitudes*

		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	.307	2	.153	1.37	.258
	Within Groups	10.8	97	.111		
	Total	11.11	99			
Discipline Area	Between Groups	.435	7	.062	.540	.802
	Within Groups	10.36	90	.115		
	Total	10.79	97			
Program Degree	Between Groups	.035	3	.012	.103	.958
	Within Groups	10.85	95	.114		
	Total	10.88	98			
Semesters Teaching	Between Groups	.152	3	.051	.444	.722
	Within Groups	10.71	94	.114		
	Total	10.86	97			

Research Question Four

4. What are the professional development needs of graduate teaching assistants related to students with disabilities?

To address this research question, graduate teaching assistants were asked a series of questions related to professional development and students with disabilities. The results of these

questions were averaged, and the central tendency was provided to answer the overall question. Tables 29-30 depict these results. The scale used to measure the questions was a four-point Likert scale where one equaled “strongly disagree,” and four equaled “strongly agreed.” Results are displayed for sample size, mean scores, frequencies, and the percentage of responses for each question (see Table 17).

For example, the mean scores are displayed for the types of professional development graduate teaching assistants were interested in, such as professional development sessions and panel presentations where students with disabilities share their personal stories. More than 70% of respondents indicated they were interested in professional development to learn about students with disabilities, and 89% said they would be interested in attending a panel presentation discussion specifically on students with disabilities. Therefore, the mean scores represent those graduate teaching assistants, in general, who agreed that they would like professional development regarding students with disabilities in higher education.

Table 17*Professional Development for Graduate Teaching Assistants*

Item	Sample Size	Strongly Disagree Percent	Disagree Percent	Agree Percent	Strongly Agree Percent	Mean
I would be interested in attending professional development sessions related to the needs of students with disabilities.	94	3(3.1%)	15(15.9%)	49(52.1%)	27(28.7%)	1.93
I would be interested in attending a panel presentation where students with disabilities share personal information about their disabilities and their experiences in college.	94	1(1%)	9(9.5%)	47(50%)	37(39.3%)	1.72

Graduate teaching assistants were asked what types of professional development opportunities they were likely to participate in (see Table 18). The top three professional opportunities that graduate teaching assistants would like to attend were: Do's and Don'ts, with a frequency rate of 69 (12.4%), teaching strategies for students with Learning Disabilities, with a frequency 66 (12.4%), and resources on students with Autism, with a frequency rate 59 (11%). The least frequent professional development opportunities were OSD Accommodations 101, with a frequency rate of 46 (8.6%) followed by self-help strategies for students with other health impairments with a frequency rate of 39 (7.3%), and information on students with physical disabilities with a frequency rate of 36 (6.7%).

Table 18*Frequency of Desired Professional Development Opportunities*

Items	Frequency	Percentage
Disability Dos and Don'ts*	69	12.9
OSD Accommodations 101	46	8.6
Universal Design (UD) in course development	52	9.7
Information on students with physical disabilities	36	6.7
Access issues related to technology in the classroom	51	9.5
Services for students who are blind/visually impaired	56	10.5
Teaching strategies for students with learning disabilities*	66	12.4
Resources on students with a Autism spectrum disorder *	59	11
Self-Help strategies for students with other health impairments	39	7.3
Best practices in working with students who are deaf/hard of hearing	58	10.9

*Note: * Top three Professional Development Opportunities. Percentages do not add up to 100% because participants could select more than one option on the list.*

Summary

In conclusion, research question one explored graduate teaching assistants' attitudes towards students with disabilities. Results showed positive attitudes towards students with disabilities in higher education. However, there was a lack of knowledge of accommodations, disability laws, and disability support services. Instructors of record without this knowledge can impact students receiving accommodations. Graduate teaching assistants felt comfortable when students self-disclosed their disability and were willing to assist them. Also, graduate teaching assistants were willing to be advocates for students with disabilities and help students navigate various college processes and procedures. Graduate teaching assistants strongly disagreed that accommodations were a hindrance to the academic integrity of a program, and they did not believe that providing accommodations created an unfair advantage over other students.

Furthermore, graduate teaching assistants were asked to share thoughts about specific disability categories. Based on the results, graduate teaching assistants had positive attitudes towards students with Visual Impairments (98%), Hearing Impairments (97%) and Other Health Impairments (96%) and Emotional Disturbances (96%). The disability categories that elicited the least positive responses were Intellectual Disability (86%), Traumatic Brain Injury (91%), and Autism (93%).

For research question two, graduate teaching assistants were asked about knowledge of accommodations, disability laws, and disability support services. Results indicated that graduate teaching assistants' awareness or knowledge of accommodations, disability laws, and disability support services for students with disabilities was inconclusive. Further, graduate teaching assistants were asked a series of knowledge statements on disability laws; they were not familiar with the Rehabilitation Act of 1973 (64%), nor were they familiar with the Higher Education

Opportunity Act (HEOA) 2008 (28%). However, most graduate teaching assistants (71%) were aware of the Americans with Disabilities Act (ADA) related to students with disabilities in higher education.

Graduate teaching assistants were asked about specific accommodations for students with disabilities. According to the results, graduate teaching assistants were familiar with testing accommodations, note-takers, and assistance for students with temporary impairments. The three least known accommodations were: escorts to and from classes, transportation for students with mobility impairments, and wheelchair services. Also, the researcher completed a Pearson Correlation Coefficient between attitudes and knowledge of accommodations, knowledge of disability laws, and knowledge of disability support services, in addition to one between knowledge of accommodation, knowledge of disability laws, and knowledge of disability support services. All the measures were significant except for attitudes and disability support service knowledge. No correlation was found between attitude and having knowledge of disability support services, as it had a weak magnitude of .06299408.

The results for research question three on knowledge by gender, college affiliation, program degree, and the number of teaching semesters results varied. Based on graduate teaching assistants' knowledge, the results indicated that gender is not a factor. Also, discipline areas did not vary in knowledge based on One-way ANOVA results. However, based on the means scores, graduate teaching assistants from the College of Arts and the College of Business had the most limited knowledge regarding students with disabilities in higher education, followed by the Office of Graduate Studies.

Moreover, the graduate teaching assistants' program degree was not significant in knowledge of students with disabilities in higher education. Graduate teaching assistants in a

Ph.D. program had more knowledge when compared to students in a master's degree program. Another area of concern was the number of semesters teaching as a graduate teaching assistant in relation to knowledge associated with students with disabilities. The assumption analysis results indicated the longer a graduate teaching assistant had taught, the more familiar they were with students with disabilities.

The results for research question three varied as a predictor of gender, college affiliation, program degree, and the number of teaching semesters within the category of attitudes. Based on graduate teaching assistants' responses to students with disabilities in higher education, gender was not a significant factor, yet men and non-binary had higher mean scores than women.

For discipline affiliation, graduate teaching assistants' attitudes towards students with disabilities were consistent with mean scores. Also, graduate teaching assistants' attitudes based on program degrees were consistent with mean scores. Students pursuing Ph.D. degrees had a higher positive attitude than those pursuing masters and other degrees. Next, graduate teaching assistants' attitudes responses were grouped by the number of semesters taught. Responses revealed that the longer graduate teaching assistants had taught students with disabilities, the more positive their attitudes were towards students with disabilities.

Research question four was related to graduate teaching assistants' interests in professional development regarding students with disabilities. A few respondents indicated that they were not interested in professional development regarding students with disabilities. Most graduate teaching assistants indicated that they were interested in attending a panel discussion where students with disabilities present their journey in navigating the college experience. However, a few respondents were not interested in participating in this type of forum. Finally, graduate teaching assistants were interested in information for students with disabilities in higher

education, such as the Do's and Don'ts with almost 13%, teaching strategies for students with Learning Disabilities with 12%, and resources on students with Autism with 11%.

Chapter Five: Discussion

Graduate teaching assistants play a critical role in undergraduate education and face many demands on the job, such as understanding their duties and responsibilities and developing effective pedagogical skills. Additionally, they must possess knowledge of federal mandates related to specific groups of students in higher education, including those with disabilities (Sohoni et al., 2013). Research on graduate teaching assistants has focused on the delivery of instruction, assessment, and engagement of students, with very limited information available regarding graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education. Thus, the purpose of this study was to explore graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education.

Data was collected via a survey of graduate teaching assistants at a large research university in southwest Florida. One hundred twenty-six graduate teaching assistants responded to the survey. Data were analyzed using SPSS and presented using descriptive and inferential statistical methods. A One-way ANOVA was used to interpret between and within-group variations. Detailed results of the study were provided in the previous chapter.

In summary, in general, graduate teaching assistants lacked knowledge about accommodations, laws, and support services for students with disabilities. There was no statistical significance as it relates to knowledge and attitude by gender, discipline area, and the degree graduate teaching assistants were pursuing. The longer graduate teaching assistants taught, the more knowledge they possessed; however, the finding was not statistically significant

based on One-way ANOVA results. Graduate teaching assistants were also willing to learn how to better serve students with a disability by engaging in professional development on these topics.

The social model of disability (Oliver, 2004) was used as a theoretical framework for this study. The premise of the social model of disability is that the environment needs to change for people with disabilities to be empowered with the necessary tools to be successful. Also, the social model of disability focuses on the educational barriers that limit people with disabilities (Oliver, 2004). This includes environmental barriers described by Oliver (2004), who discussed the need to make modifications to environments for students with disabilities, so they do not become hidden barriers. Goodley (2016) considers all potential barriers, including the individual model of disability as a form of oppression experienced by those who have a disability. The social model of disability is relevant to higher education as this model highlights negative societal attitudes that hinder inclusivity (Dirth & Branscombe, 2017).

In the current study, responses from graduate teaching assistants showed they had positive attitudes towards students with disabilities and were willing to limit any environmental, cultural, and educational barriers for students with disabilities by engaging in professional development to implement universal design for instruction. If graduate teaching assistants have the knowledge needed to work with students with disabilities, according to the social model of disability, this limits the barriers they face (Dirth & Branscombe, 2017). Oliver and Barnes (2012) discussed the limitation of creating barriers for people with disabilities to social inclusion of people's limited attitudes. They refute the notion that a person with a disability needs to be "fixed," rather than the environment needing to be welcoming for all individuals.

In this chapter, the findings from the study in light of the existing literature and the theoretical framework are discussed. Conclusions based on the findings are presented, along with implications and recommendations for further research and higher education practice. The purpose of the study was to explore graduate teaching assistants' knowledge and attitudes towards students with disabilities and to provide insights into reducing attitudinal barriers for students with disabilities. Graduate teaching assistants are an essential part of faculty at many universities, therefore a worthy topic of exploration.

According to McCallister et al. (2014), graduate teaching assistants have limited knowledge about students with disabilities in higher education, yet they need the knowledge to assist students with disabilities in the classrooms. Ultimately, the results from this study should assist university personnel in understanding the perspectives and needs of graduate teaching assistants in relation to their work with college students with disabilities.

Findings for Research Question One

- 1. What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?*

Research question one addressed graduate teaching assistants' attitudes toward students with disabilities. In alignment with the social model of disability (Oliver, 2004), it explored the educational barrier of negative attitudes toward students with disabilities. Austin and Peña (2017), Gonzalez and Elliott (2016), and Wynants and Dennis (2017) looked at faculty attitudes towards students with disabilities using surveys. Similarly, this study sought to uncover the attitudes of graduate teaching assistants. Findings from this study indicate that graduate teaching assistants felt comfortable when a student self-disclosed a disability, and most respondents shared they believed giving students accommodations would not affect the integrity of the class.

They felt that providing accommodations to students with disabilities did not create an unfair advantage and they were willing to help a student with a disability navigate various college processes and procedures. These responses reveal that overall, graduate teaching assistants who participated in this study had positive attitudes towards students with disabilities in higher education and agreed that students with disabilities need their accommodations. Further, respondents were asked how willing they were to advocate for students with disabilities and help them secure needed accommodations. The majority strongly agreed to be advocates for students with disabilities.

Next, related to attitudes toward students with disabilities, graduate teaching assistants were asked about students with specific categories of disability. Respondents expressed the most positive attitudes regarding students with Visual Impairment, Hearing Impairment and Other Health Impairment, and the least favorable attitudes toward students with Intellectual Disability, Traumatic Brain Injury, and Autism.

Findings for Research Question Two

- 2. How do graduate teaching assistants at a select higher education institution rate their knowledge on accommodations, disability laws, and disability support services for students with disabilities?*

Accommodations

Graduate teaching assistants responded to four different items to identify the accommodations with which they were most familiar. The results from their responses indicated that as a group, they were most familiar with testing accommodations for students with disabilities, note-takers, and other accommodations of assistance for students with temporary impairments. However, the three accommodations least familiar to graduate teaching assistants

in this study were wheelchair services, transportation for students with mobility impairments, and escorts for students to and from classes. Findings related to knowledge regarding these specific accommodations are absent from prior research and literature on services for students with disabilities in higher education.

Disability Laws

Three items on the survey were dedicated to understanding the level of knowledge graduate teaching assistants possessed on the topic of disability law. Approximately 36% of respondents were familiar with the Rehabilitation Act of 1973, and approximately 29% were familiar with the Higher Education Opportunity Act (HEOA) of 2008. However, the percentage of graduate teaching assistants who were familiar with the ADA was double the number of those familiar with the previous two acts. Seventy-two percent of graduate teaching assistants were familiar with the Americans with Disabilities Act (ADA) as it applies to students with disabilities in higher education. This may be due to its frequently cited applicability to education and the workplace. Familiarity with ADA among participants in the present study was greater than among those in the Stevens et al. (2018) study, which found that 30% of faculty learned ADA law as they participated in coursework for their degree, indicating less prior knowledge on the subject. Just over 21% of the respondents never received information on students with disabilities, and nearly 80% of faculty indicated a need to understand and become aware of varying disabilities. At the same time, faculty were unaware of the institution's legal obligation to provide accommodations for SWD (Stevens et al., 2018). While the number of graduate teaching assistants who were familiar with the law was higher in this study, the same theme is present in both studies, a lack of sufficient knowledge of the laws written to protect students with disabilities.

Disability Support Services

Findings from the study revealed that most graduate teaching assistants were aware that the university had an office for students with disabilities. However, only a small percentage had worked with the office. The majority of the graduate teaching assistants in this study were willing to find additional support for students with disabilities on campus, even with limited knowledge. In addition, respondents seemed to be in favor of creating equitable experiences for students with disabilities by allowing for course substitutions when needed. The majority felt the university's campus was not accessible for students environmentally, culturally, or educationally.

These findings align with the social model of disability, which suggests that negative societal attitudes hinder inclusivity (Dirth & Branscombe, 2017). Although the attitudes are not directly apparent, the physical structure and the development of the curriculum seem to lack the consideration of students with disabilities. The ability to navigate around campus is just one of the barriers students with disabilities must overcome to obtain an education. Accessing the curriculum in a meaningful way is another.

The results of this study showed that graduate teaching assistants had positive attitudes toward students with disabilities regardless of the amount of knowledge they possessed about accommodations or disability laws. The attitudes were neither positive nor negative for those graduate assistants who reported knowing about disability support services. There was no correlation between attitudes and knowledge of accommodations and disability support services. It is important to acknowledge past studies that showed faculty had positive attitudes that were related to their knowledge of students with disabilities. This study, however, found there were positive attitudes with limited knowledge. In studies such as Black et al. (2014) findings showed the faculty who had limited knowledge of students with disabilities, also had negative attitudes.

Findings for Research Question Three

3. *Do graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education vary by:*

- a. *Gender*
- b. *Discipline areas*
- c. *Program degree*
- d. *Semesters teaching as a graduate teaching assistant?*

Knowledge

Graduate teaching assistants' knowledge of students with disabilities did not vary by gender. Each category of gender self-reported they lacked an understanding of students with disabilities yet had positive attitudes. Eighty percent of women, 79% of men and 89.9% of non-binary said they disagreed or strongly disagreed that they had knowledge of students with disabilities. This contrasts with Greenberger's (2016) study, which found that male faculty had limited knowledge and negative attitudes toward students with disabilities (Abu-Hamour, 2013).

The graduate teaching assistants' discipline area was an indicator of how much they knew about students with disabilities. Graduate teaching assistants who were pursuing degrees in the social sciences had more knowledge of students with disabilities than those pursuing business and art degrees. Eighty-three percent of respondents pursuing a master's degree, 85% of those pursuing a doctorate, and 100% of other advanced degrees (one participant), all reported they lacked knowledge of students with disabilities. No matter what degree they were pursuing, master's, doctoral, or "other," graduate teaching assistants simply lacked knowledge about students with disabilities. The one graduate teaching assistant who reported seeking "other" advanced degrees reported having more knowledge of students with disabilities. However, the

respondent did not disclose what type of degree he or she was pursuing. What did make a difference in how much knowledge graduate teaching assistants had about students with disabilities was the amount of time they had been teaching. The longer graduate teaching assistants had been teaching at the collegiate level, the more knowledge they had about students with disabilities.

Attitudes

Graduate teaching assistants' attitudes were also measured by gender. Men and non-binary reported more positive attitudes than women towards students with disabilities, although the gender categories of men and non-binary had substantially fewer participants than women in this study. Graduate teaching assistants' attitudes, when measured by discipline area, varied towards students with disabilities in higher education. Graduate teaching assistants from the College of Arts and Science had the most positive attitudes towards students with disabilities, followed by the College of Arts, and College of Education. Students from the College of Behavioral and Community Science, College of Engineering, and the College of Public Health had the least favorable attitudes towards students with disabilities.

Graduate teaching assistants' attitudes delineated by degree program results indicated that no matter the degree program, all had positive attitudes towards students with disabilities in higher education. Those pursuing masters and doctoral degrees had the most positive attitudes. Those seeking "other" degrees had fewer positive attitudes towards students with disabilities in higher education, even though they had more knowledge of students with disabilities. According to Greenberger (2016), the more knowledge faculty had, the more positive attitudes they had toward students with disabilities. The opposite is true in the current study.

Furthermore, the data collected on the attitudes of graduate teaching assistants were analyzed by the number of semesters taught. The results regarding levels of experience of teaching all indicated positive attitudes. However, graduate teaching assistants who had 11 to 15 semesters of experience indicated the most positive attitudes towards students with disabilities. Again, this substantiates the finding that the more experience a graduate teaching assistant has, the more positive the attitude toward students with disabilities.

Findings for Research Question Four

4. *What are the professional development needs of graduate teaching assistants related to students with disabilities?*

Most graduate teaching assistants indicated they were interested in receiving professional development related to students with disabilities in higher education. Also, graduate teaching assistants were interested in attending a panel presentation where students with disabilities share personal information about disabilities and their college experience. The top three professional development topics graduate teaching assistants chose were disability Do's and don'ts, teaching strategies for students with learning disabilities, and resources for students with Autism Spectrum Disorder. Graduate teaching assistants were least interested in professional development on self-help strategies for students with Other Health Impairments, information on students with Physical Disabilities, and information on the Office of Disability Services and accommodations.

Findings in Relation to the Literature

The social model of disability is applicable in higher education as this model highlights negative societal attitudes that hinder inclusivity (Dirth & Branscombe, 2017). Higher education can be seen as a microcosm of society in which those outside the norm are treated as “other”

(Goodley, 2016). Often in higher education, students with disabilities are not given accommodations with fidelity, and the environment is at times, unwelcoming. Responses from graduate teaching assistants showed they had positive attitudes about trying to limit any environmental, cultural, and educational barriers for students with disabilities. Oliver and Barnes (2012) discussed the limitation of creating barriers for people with disabilities to social inclusion by limiting people's attitudes in this case. They refute the notion that a person with a disability needs to be "fixed," rather they contend that the environment needs to be welcoming for all individuals. Oliver (2004) was clear with his call to remove cultural barriers from the ecosystem for the benefit of all. Further, Oliver stated that the cultural environment in our society depicts impairments as unattractive or unwanted. Additionally, the cultural environment perceives the impairment as a tragedy. Thus, individuals do not know how to interact with a person with a disability (Oliver, 2004).

Attitudes

In this study, participant responses are consistent with some previous studies which found that higher education faculty had positive attitudes towards students with disabilities (Cook et al., 2009; Leyser et al., 2011; McCallister et al., 2014; Wynants & Dennis, 2017). The faculty had more knowledge of students with disabilities than the graduate teaching assistants in this study. Studies such as Becker and Palladino (2016) and Sniatecki et al. (2015) indicated faculty had negative attitudes toward students with disabilities, and possessed limited knowledge. The trend in each of the studies is the amount of knowledge of students with disabilities correlates with attitudes, whether positive or negative. Becker and Palladino (2016) and Sniatecki et al. (2015) collected data from professors in academia, however in this study, participants were graduate teaching assistants. It is difficult to generalize findings from this study about target populations

of graduate teaching assistants due to the small sample size. The researcher found graduate teaching assistants had limited knowledge of students with disabilities, just as professors in the literature, but had positive attitudes toward students with disabilities in higher education. The positive attitudes held by future professors are promising for students with disabilities in academia and consistent with the social model of disability, negative attitudes are one barrier that must be eliminated, particularly in education.

Responses regarding attitudes towards students with disabilities from graduate teaching assistants in this study were more favorable than those reported in the literature from surveys of faculty members. Graduate teaching assistants reported feeling comfortable when a student self-disclosed that they had a disability and were willing to help them navigate the various college processes and procedures. In addition, they were willing to advocate for a student with a disability to secure needed accommodations. This contrasts with findings by Murray et al. (2008) who surveyed faculty and found they did not invite students to self-disclose if they had a disability.

In addition, respondents in the current study seemed to understand that accommodations were based on the principle of equity. For example, they did not believe that providing accommodations to a student with a disability would compromise academic integrity or that providing accommodations would create an unfair advantage over other students. This contrasts with findings from two studies where faculty felt students with disabilities were more challenging to work with, and that they tend to get an unfair advantage (Black et al., 2014; Stevens et al., 2018). However, Lomdardi et al. (2013) found that instructors were willing to provide significant accommodations for students with disabilities but lacked sufficient

knowledge of students with disabilities, which led to a stronger negative association of provision of accommodations.

Although the attitudes expressed by respondents toward students with disabilities across categories were positive, there was some variability depending on the disability category. Students with Visual Impairments were viewed the most positively, and students with Intellectual Disability the least. The researcher found this data interesting because of the nature of the disability type, one being visible and the other being generally invisible. Dirth and Branscombe (2017) stated that the social model of disability is the catalyst for supporting a larger community of diverse physical and mental abilities to push aside the traditional narratives of disability as tragic, inferior, or incapable of contributing to the community. According to Zeedyk et al. (2019), respondents indicated they had limited knowledge about invisible disabilities versus visible disabilities. Graduate teaching assistants may be more willing to work with a student who has a visible disability versus one that is invisible, although further study of this topic is needed to explore why this may be the case.

Furthermore, federal mandates such as the American with Disability Act (ADA) and the most recent mandate, the Individuals with Disability Education Act, has helped students with disabilities succeed in secondary education and in postsecondary settings. The two federal laws have enforced both educational settings to provide accommodations for students. A shift in mindset needs to follow the legislation in that students with disabilities can be given accommodations to help them be successful without compromising the integrity of their education. Thus, institutional policies are in place as a safeguard for students with disabilities and, as mentioned by McCallister et al. (2014), higher education institutions may want to provide faculty effective ways to transmit information on federal laws and institutional policies regarding

students with disabilities. These federal mandates and institutional policies may have influenced the results of this study, where graduate teaching assistants had positive attitudes toward students with disabilities.

Knowledge of Accommodations, Disability Services, and Disability laws

The results from this study indicated that graduate teaching assistants had positive attitudes toward students with disabilities, but to some extent lacked knowledge of accommodations, disability services, and disability laws. Wynants and Dennis (2017) noted that limited understanding of students with disabilities leads to negative attitudes towards students with disabilities. Studies by Austin and Peña (2017) and Gonzalez and Elliott (2016) also yielded similar results. Therefore, the results from this study are not consistent with past research.

The researcher also found inconsistencies in knowledge-based questions regarding accommodations, disability services, and disability laws. Graduate teaching assistants were familiar with testing accommodations, notetakers, and temporary assistance for students with short-lived impairments. However, they were not familiar with wheelchair services, transportation for students with mobility impairments, and escorts to and from classes. Graduate teaching assistants reported they were familiar with the Office of Student Disability Services at the university.

Even with this knowledge, however, graduate teaching assistants reported that they had not contacted this office regarding students who need accommodations, although they were familiar with its existence. Unlike this study, participants in McCallister et al.'s (2014) study were not familiar with the location of the disability office. Leyser et al. (2011) stated that in the second part of their study, faculty had an awareness of disability support services and had more communication with the Office of Disability Services. A study by Black et al., (2014) indicated a

different outcome with faculty members. Faculty who had no experience with a student with a disability did not have the slightest familiarity with accommodations, much less the Office of Student Disability Services (Black et al., 2014).

The results from the current study indicate that graduate teaching assistants would allow a student with a documented disability to substitute an alternative course for a required course if the substitution did not dramatically alter the program requirement. Murray et al. (2009) indicated that in their study, faculty believed that if significant accommodations were necessary, it might alter underlying academic requirements that compromise the overall program. On the contrary, Oliver (2004) stated that providing options to individuals with disabilities would provide less of an environmental barrier, which creates accessibility to others as well. Designing instruction with a universal approach benefits more than just those who use devices such as wheelchairs or crutches to aid in ambulation. Mothers with strollers, trolleys with supplies, teachers with rolling carts, and even maintenance workers with supplies for cleaning or repair benefit from a barrier-free environment. Also, in the current study, graduate teaching assistants were certain where to find additional support on campus for students with disabilities, which supports Oliver and Barnes (2012) supposition that part of the social model of disability is to provide access to support services. These support services reduce barriers, whether environmental, cultural, or educational, for students with disabilities, and allows them to “participate in mainstream society as equal citizens” (p. 12).

Baker et al. (2012) indicated if students with disabilities did not self-disclose or request accommodations for a disability, then students with disabilities would not receive the necessary support from staff and faculty to enrich their college experience. This holds true in this study;

graduate teaching assistants reported they were aware that when a student self-discloses their documented disability to the university, the student will receive their accommodations.

Disability laws encompass the beginning of services and the necessary accommodations for students with disabilities to succeed in postsecondary education and as such, graduate teaching assistants need to be familiar with laws that safeguard students with disabilities. McCallister et al. (2014) expressed that higher education institutions need to work on best practices to extend literature pertaining specifically to federal laws and policies that affect students with disabilities to all faculty, including graduate teaching assistants. Perhaps if instructors were made aware of the tenants of the social model of disability and used it as a framework in their instruction, they would be more apt to provide different accommodations for all students.

Based on the results of this study, graduate teaching assistants had limited knowledge of disability laws as well; they were familiar with ADA but were not aware of the Rehabilitation Act of 1973. This finding mirrors those from other studies that found faculty either were not aware of the laws themselves or had limited awareness of legal obligations to provide accommodations for students with disabilities (Baker et al., 2012; Black, 2014; Cook et al., 2009; Stevens et al., 2018). Sniatecki et al. (2015) and Stevens et al. (2018) surveyed faculty and found they lacked knowledge of university policies and procedures in addition to legislation for students with disabilities as well.

The researcher hypothesized that there would be a relationship among attitudes and knowledge of accommodations, disability laws, and disability support services and explored the possibility of additional connections among these areas. This was important to explore as the social model of disability suggests an environment must be created where attitudes are not

creating a barrier to accessibility for a person with a disability (Oliver & Barnes, 2012). This exploration revealed unexpected results because past studies showed that limited knowledge correlates to negative attitudes, but the current study found that even with limited knowledge regarding students with disabilities, respondents still had positive attitudes.

There were positive correlations between the other two types of knowledge, the knowledge of disability laws and accommodations. Graduate teaching assistants' knowledge of disability laws and of accommodations did not impact their positive attitudes. Furthermore, graduate teaching assistants' knowledge of accommodations and disability laws showed a positive correlation with their attitudes toward students with disabilities. Black et al. (2014) reported contrasting results. They found that faculty with limited and negative attitudes towards students with disabilities were not familiar with the Office of Student Disability Services. In this study graduate teaching assistants were familiar with the Office of Student Disability Services, and they had positive attitudes towards students with disabilities.

However, the results revealed that there was limited knowledge across all categories surveyed about students with disabilities no matter the gender of the respondent, discipline area, program degree, or number of semesters teaching as a graduate teaching assistant. Greenberger (2016) discovered that years of teaching experience had significantly higher mean scores in knowledge than those with less years of teaching experience. She also noted that the discipline area had significant mean differences for knowledge-based questions. However, Leyser and Greenberger (2008) reported that advanced tenured faculty had less training than a beginning tenure track professor.

With no knowledge of these students, graduate teaching assistants were not able to decipher when they were infringing on the rights of students with disabilities. Without

knowledge in these above areas, the essence of the social model of disability cannot be upheld. When all graduate teaching assistants have the tenants of the social model of disability as the framework to guide their teaching, all students will benefit. Empowering graduate teaching assistants with knowledge of the social model of disability will benefit everyone. For example, understanding the needs of students with disabilities and universally designing lessons to meet their needs can also enhance the learning experience of all students. The use of subtitles or closed captioning can help international students with the English language, recorded online lectures allow for students to review materials, and alternative materials such as movies or TedTalks help all students grasp different perspectives and ideas through multimedia.

Knowledge of Students with Disabilities by Subgroups

Results regarding research question three exploring graduate teaching assistants' knowledge towards students with disabilities in higher education by gender, discipline areas, program degree, and semesters teaching were inconsistent with past research. Even though overall knowledge was limited about students with disabilities, when delineated by gender, neither males nor females in the current study differed. This contrasts with Abu-Hamour's (2013) study, which revealed that men were less knowledgeable than women about students with disabilities in higher education. Also, those who identified as non-binary in the current study had the least knowledge of students with disabilities in higher education.

Respondents from the College of Arts, College of Business, followed by the College of Graduate Studies, had the least knowledge of students with disabilities. These findings are similar to research conducted by Gibbons et al. (2015), Leyser et al. (2011) and Murray et al. (2008). Gibbons et al. (2015) noted that the faculty of the College of Education were inclined to be more open and accepting of students with disabilities than other colleges at the university.

There were discrepancies in faculty attitudes and perceptions among different colleges. Murray et al. (2008) report faculty of the College of Education and Telecommunications and Information Systems to have a greater willingness to provide teaching accommodations than other colleges, and those in the College of Humanities are more willing to offer instructional accommodations than faculty in the Social Sciences (Leyser et al., 2011). In this study, the findings were different. The respondents from the College of Education were more willing to provide accommodations to students with disabilities than the College of Arts. Graduate teaching assistants from other colleges were more willing to provide accommodations. Also, in the current study, graduate teaching assistants with a master's degree, not those pursuing a master's degree, had the least amount of knowledge about students with disabilities, yet they had positive attitudes toward students with disabilities. In the findings of Leyser et al. (2011), faculty with the least experience had less knowledge and less positive attitudes towards students with disabilities as compared to seasoned faculty with a wealth of experience with students with disabilities. Just as Leyser et al. (2011) found in their study, respondents in this study who had taught one to five semesters had the least knowledge of students with disabilities.

Attitudes Towards Students with Disabilities by Subgroups

When respondents were asked about attitudes towards students with disabilities, the results varied by gender. Men and non-binary respondents had more positive attitudes than women; however, this finding was statically insignificant. In past studies, women with prior professional development on how to work with students with disabilities and prior experience working with students with disabilities had more positive attitudes towards students with disabilities in higher education (Leyser et al., 2011; Lomdardi et al., 2013). However, according to Hong and Himmel (2009), there were no significant differences in attitudes when gender was

a variable. Regarding discipline affiliation, respondents from the College of Arts and Science and the College of Arts had the most positive attitudes towards students with disabilities. Prior research conducted by Greenberger (2016) and Leyser et al. (2011) found that students in the social sciences had more significant positive attitudes towards students with disabilities than those from other areas. The findings from this study were inconsistent with prior research; graduate teaching assistants in both hard sciences and social sciences had positive attitudes towards students with disabilities. Also, Greenberger (2016) reported that faculty who did not have students with disabilities in their class had a higher negative attitude towards students with disabilities than those who had students with disabilities in class. Yet, 50 % of this age group ranged from 46 and above, and one-half were in engineering, with a third in the hard sciences (Greenberger, 2016).

Perhaps the difference in attitudes could be explained by the very major the teaching assistants chose. Those who have decided to pursue careers working with people may be more open to working with diverse groups of individuals. This difference could be addressed by exploring how graduate teaching assistants in the social sciences are prepared to work with disabilities and those who do not. The implication here is that universities may want to factor in the disciplinary backgrounds of graduate teaching assistants in their design of professional development.

There is a lack of research that focuses directly on the degree program and/or level of education of graduate teaching assistants (i.e., master's or Ph.D.) in relation to how they perceive students with disabilities, but there are differences among faculty based on rank. Research has shown the longer one teaches, the more favorable the attitude is toward students with disabilities in higher education (Baker et al., 2012; Black ,2014; Cook et al., 2009; Sniatecki et al., 2015 and

Stevens et al., 2018). For example, according to Black et al. (2014), faculty who had no experience with students with disabilities had the most negative attitudes towards this group of students. This is consistent with the findings of the current study.

Professional Development

Linenberger et al. (2014) expressed that graduate teaching assistants have limited experience working with undergraduate students and far less with pedagogical instruction. McCallister et al. (2014) suggested that there need to be specific professional development courses for graduate teaching assistants who teach students with disabilities. Institutions of higher education need to provide onboarding for graduate teaching assistants that includes professional development regarding students with disabilities and Universal Design of Instruction. This would help create an inclusionary environment and lessen attitudinal barriers for students with disabilities.

Findings in the current study related to professional development are inconsistent with prior research. According to (Baker et al., 2012), less than 20% of participants in their study participated in professional development regarding students with disabilities, whereas in the current study, more than 70% of graduate teaching assistants agreed they would take a professional development course to improve their knowledge of students with disabilities. Findings from the current study indicate that graduate teaching assistants are primarily interested in do's and don'ts, strategies for students with learning disabilities and students with Autism. This is significant in that Learning Disabilities and Autism are primarily invisible disabilities. Professional development in this area may help improve attitudes toward students with these disabilities and provide a better understanding of their learning potential.

Knowledge is the key to empower graduate teaching assistants to in turn, empower their students who have disabilities. Knowledge also reduces potential educational barriers already established by the dominant discourse of the medical model of disability (Oliver, 2004). Professional development that develops the knowledge of students with disabilities in graduate teaching assistants is paramount, as they are the instructors of record. According to data from this study, areas that need particular attention are: specific accommodations, disability services, and disability laws. Perhaps in the future, university faculty and administrators may elect to add a section of professional development specifically for graduate teaching assistants on how to work with students with disabilities in higher education, in addition to the onboarding professional development already offered.

The findings from this study provide some insight to understand graduate teaching assistants' knowledge and attitudes toward students with disabilities in higher education. This is a starting point for change in how they are prepared to work with students with disabilities. In the current study, despite having limited knowledge regarding students with disabilities, graduate teaching assistants reported positive attitudes towards this population of higher education students. In contrast, the literature suggests if there is limited knowledge, there are negative attitudes about students with disabilities in higher education.

According to Flaherty et al. (2017), graduate teaching assistants' pedagogy is affected by the following factors: training(s), personal influences, teacher empowerment, psychological teacher empowerment, and empowerment processes. In addition, the instructor-student relationship in postsecondary education is an essential component to student engagement, as this creates opportunities for students (Embry & McGuire, 2011). This is important because to build those relationships, there must be an understanding of the student with a disability. To gain the

understanding, graduate teaching assistants must be prepared through professional development not only on how to work with students with disabilities, but on how to universally design instruction. Universities might consider using a UDL model when preparing graduate teaching assistants to work with this population to eliminate barriers (Oliver, 2004). Strategies from UDL such as closed captioning, auditory presentation of text, choice of products to show mastery can be used by graduate teaching assistants to enhance the education of all students, since all are specifically identified as best practices in the classroom. This way, instructors of record have experienced the very design they are expected to implement in their classroom.

Higher education institutions should consider professional development options for graduate teaching assistants focused on students with disabilities, including disability legislation and policies. Flaherty et al. (2017) claimed that graduate teaching assistants must establish a positive rapport with undergraduates. By doing so, graduate teaching assistants create an environment that enhances student learning and lessens attitudinal barriers for students with disabilities, which is consistent with the social model of disability. Greater knowledge about students with disabilities will make it easier to establish this rapport and make the content more accessible.

Findings regarding attitudes of graduate assistants towards students with specific disabilities were consistent with prior findings in those students with visible disabilities, such as Visual Impairments were viewed most favorably. This is a common theme in the literature where visual disabilities are more socially acceptable than non-visible disabilities. In the current study, Intellectual Disability, Autism, and Traumatic Brain Injury were viewed least favorably. This speaks to the need for professional development on invisible disabilities to reduce the social stigma and to help graduate teaching assistants understand the potential of students with these

disabilities to succeed in higher education. McCallister et al. (2014) stated that graduate teaching assistants need training on different types of disabilities and their impact on learning, how to access the Office of Disability Support Services, and how to teach self-advocacy strategies to students with disabilities.

In addition, graduate teaching assistants lacked an understanding of how to incorporate assistive technology to increase accessibility in the classroom, which is a vital element in teaching students with disabilities. Instructors could incorporate communication technology such as Flipgrid to record responses, whiteboard Fox to use visual representations collaboratively, and Padlet in the classroom. If graduate teaching assistants are also educated on the social model of disability and its focus on eliminating environmental, cultural, and educational barriers, they may begin to use it as a framework in their pedagogy. Being cognizant of what barriers students with disabilities might face in the classroom or in the curriculum aligns with this model.

Instructors could have students actively participate and ensure lessons and the classroom are Universally Designed for all learners. Also, instructors could use various communication techniques to send information to students and be flexible on a variety of needs to provide accessibility for students with disabilities in higher education. Employing a variety of ways to show mastery of the content, as mentioned above, allows students to engage in multiple ways. Adding a choice of products further differentiates and allows students to showcase knowledge using their strengths.

Implications for University Policies

As stated above, further implications from this study indicate that graduate teaching assistants lack knowledge of accommodations, disability services, and disability laws. This

supports the findings of other studies suggesting that a lack of knowledge in these areas is an issue for graduate teaching assistants and higher education faculty alike.

Most graduate teaching assistants reported that they were aware of the Office of Disability Services, but they never reached out to inquire about accommodations, etc. Also, graduate teaching assistants in this study were aware of the disability process of self-disclosure. This suggests there may be a lack of communication between graduate teaching assistants and the Office of Disability Services. Therefore, there may need to be more explicit policies regarding communication between the two to lessen environmental and educational barriers. For example, higher education institutions may wish to implement policies to ensure a minimal number of touchpoints per semester between disability coordinators and instructors of record once a student has given notice of needed accommodations. Dialogue between the coordinators and the instructors of record can help support the students in an array of accommodations. In addition, universities may need to plan for ongoing communication to keep faculty abreast of changes in disability laws.

By not being aware of laws that protect students with disabilities, graduate teaching assistants may unknowingly be infringing on students' rights and due process. According to Stevens et al. (2018), limited knowledge of students with disabilities in a court of law will not be sufficient justification for this infringement, and institutions of higher education would still be guilty of not protecting students under the Americans with Disabilities Act. Consistent with the principles of the social model of disability to reduce educational barriers, graduate teaching assistants need to be aware of laws, accommodations, and resources pertaining to students with disabilities before they take over as instructors.

Based on the results from this study, most graduate teaching assistants felt that the campus, in general, was not accessible for students with disabilities. Thus, higher education institutions need to provide an adequately accessible environment. For example, university staff who schedule classes need to ensure that buildings have ample space for students to navigate easily and that adequate lighting is provided to lessen environmental barriers.

Continued Support for Graduate Teaching Assistants

Throughout the study, graduate teaching assistants expressed the desire to feel more supported around teaching students with disabilities. In higher education, there are no case managers to help teachers understand what students with disabilities need, so collaboration with the office of Student Disability Services is essential to assist graduate teaching assistants in helping students with disabilities be successful. Perhaps universities could ensure a point of contact for graduate teaching assistants who may teach students with disabilities for guidance. They may want to contact the Office of Disability Services for additional support for concerns, from accommodations to instructional support. This way, graduate teaching assistants also have a point of contact to support them in their teaching endeavors. The Office of Disability Services exists to support students with disabilities as well as the faculty who work with them. The Office of Disability Services may wish to simply send a mass email to graduate teaching assistants to increase awareness of its existence and the support that can be offered to instructors of record, which in turn helps students with disabilities.

One way to support graduate teaching assistants is to provide a faculty mentor who is a scholar in the same interest area. Mentorship is not a common practice for graduate teaching assistants (Gilmore et al., 2014). Mentorship allows for open communication between professionals and creates an environment for graduate teaching assistants to not only build their

knowledge base but also to build camaraderie within the department. A study conducted by Damiani and Harbour (2015) expressed that graduate teaching assistants need support from faculty. They need support from planning a class session to providing productive feedback on their teaching (Parker et al., 2015). For graduate teaching assistants of students with disabilities, this practice is even more crucial; without a mentor to help guide them, not only is their learning negatively impacted but the learning of their students is negatively impacted as well (Damiani and Harbour (2015). Assigning a mentor who will engage in coaching cycles with graduate teaching assistants would be beneficial.

Recommendations for Research

The researcher was left with lingering questions prompting areas for future research. Some of these questions are: How are graduate teaching assistants meeting the needs of students with disabilities in their classroom in higher education? How do graduate teaching assistants include students with disabilities when they design instruction, and what types of strategies are used? How are they providing the necessary accommodations for students with disabilities to succeed in class? Further research could be conducted to answer these questions, perhaps using qualitative research methods to gain insightful perspectives from graduate teaching assistants, as well as students with disabilities.

Towards the end of the survey, fewer questions were answered by many respondents. Perhaps the survey may have been too long for graduate teaching assistants to complete as they may have busy schedules. Future surveys could contain fewer questions to gain the same information to ensure completion. In future studies, perhaps the researcher could survey graduate teaching assistants along with faculty, and delineate responses by years of experience rather than

by position. This would allow for a complete picture of the knowledge base surrounding students with disabilities at the collegiate level.

There is a gap in the literature that needs to be filled as the studies that focus on graduate teaching assistants' attitudes and knowledge of students with disabilities are few, and no other research was found that focused specifically on attitudes and knowledge of graduate teaching assistants. Since this study is relatively small, the results are not generalizable. A larger study may yield results that could be more generalizable to the graduate teaching assistant population. In addition, future research could explore how the disciplinary affiliation of faculty relates to attitudes towards students with disabilities.

Future research on graduate teaching assistants could include a larger number of participants across multiple universities, both private and public, to increase generalizability. The larger sample would also assess the needs of graduate teaching assistants across multiple higher education institutions to better gauge their needs. Meeting their needs empowers them to meet the needs of the students they teach, which in turn may have a positive impact on student retention. Other research could be done to investigate instructors' understanding and attitudes regarding specific disabilities. A better understanding of this would enrich the literature by providing valuable data, which could help graduate teaching assistants and students with disabilities in higher education. Unveiling attitudes could lead to how to best prepare instructors to work with students with disabilities in higher education to enhance the college experience. This information may improve teaching practices for graduate teaching assistants and impact how they work with students with disabilities by reducing barriers.

Future research design may include a pre and post-survey for graduate teaching assistants after professional development on students with disabilities to determine the effectiveness of the

training. This can help increase the response rate from participants when studying their knowledge and attitudes towards students with disabilities in higher education.

It may also be valuable to further investigate how graduate teaching assistants who have a disability themselves navigate higher education with and without mentorship and explore how graduate teaching assistants with disabilities implement Universal Design for Instruction as a framework with undergraduates.

Recommendations for Higher Education Practice

The need to implement a UDL approach as a tool for graduate teaching assistants aligns with the social model of disability (Haegele & Hodge, 2016). The three obstacles described by Oliver (2004) are the educational, environmental, and cultural barriers. As graduate teaching assistants plan with all students in mind, these barriers need to be addressed. According to Hodge et al. (2012), UDL is an educational strategy used to eliminate barriers for all people by accommodating them to the greatest extent possible by the design of activities with all ability levels in mind. The use of UDL when planning is the foundation when mapping out the curriculum for students (Haegele & Hodge, 2016). Professional development in this area would empower graduate teaching assistants with strategies to prepare curricula for all students, therefore eliminating the barriers outlined in the social model of disability through the use of UDL.

Limitations

A convenience sample was used for this study, which limits the generalizability of the results. Nonetheless, a convenience sample does provide insightful information regarding the research questions (Creswell, 2015). Another limitation of the study was that graduate teaching assistants took the survey during the middle of a semester when midterm exams were taking

place, as well as midterm grading, which may have led to less time to complete the survey. It is important to note that the study was conducted during the COVID-19 global pandemic, wherein most people felt overwhelmed, and instruction was taking place virtually. This study may not have been a priority due to the uncertainty and remote teaching environments that may have affected graduate teaching assistants' perception of students with disabilities. Many graduate teaching assistants did not complete the survey in its entirety, yielding incomplete data for some responses, but those who did complete the survey may have had a bias toward the study. For instance, those participants who participated in the survey may have been familiar with students with disabilities and were interested in participating.

Also, there was a response rate of less than one percent of the total population of graduate teaching assistants at the university. This gives limited insight into what happens broadly across the campus. Another limitation may have been that most graduate teaching assistants are not familiar with the terminology as it relates to students with disabilities, which may have altered responses in the survey. Another limitation of this study was the internal consistency of some of the categories analyzed. For some items, there was a poor correlation, suggesting that there needs to be more items addressing the area in the survey. For example, the analysis of attitude, in general, had a poor correlation; however, the grand attitude score had good internal consistency. Another limitation was the internal consistency for support services with a Cronbach's Alpha of .296. Perhaps, in the future the survey instrument may need to include more questions related to disability support services to increase the Cronbach's Alpha. These questions may help researchers to deeply understand if there are any correlations between the categories. Finally, another limitation to the study could be traced to the rewording of the questions. All questions in

this survey were reworded positively prior to the study. These changes may have contributed to the lower internal validity scores for this study.

Conclusion

This chapter included a discussion of the findings for each of the research questions in the study. Results were linked to the literature and implications for policy and practice were provided along with recommendations for future research and the study's limitations.

Final Reflection

After I finalized the results from this survey, I realized that my intuition was correct. Graduate teaching assistants lack knowledge on students with disabilities. As a former graduate teaching assistant and instructor in higher education, I believe graduate teaching assistants need to be empowered to provide support for students with disabilities. As Sniatecki (2015) stated, "without appropriate knowledge, faculty are ill-prepared to make decisions about how to effectively implement accommodations in their classroom (p. 260). I do hope that this body of work informs and can make a difference in academia, therefore reducing barriers for students with disabilities. I believe in life there is always something new to learn and grow from, and this is one example of it.

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Tables

Table 1

Search Terms for ERIC

First Search Term	Secondary search terms	Third terms
Graduate Teaching Assistants	Perceptions or attitudes or opinion Attitudes or perceptions or opinions or thoughts or feelings or beliefs	Students with disabilities
Graduate Assistants	Attitudes or perceptions or opinions or thoughts or feelings or beliefs	Disabilities or disability or disabled or impairments or impaired or special needs
Graduate Teaching Assistant	Higher education Inclusive teaching	Students with disabilities

Table 2

Search Terms for Education Source

First Search Term	Secondary search terms	Third terms
Graduate Teaching Assistants	Attitudes or perceptions or opinions or thoughts or feelings or beliefs	
Graduate Assistants Graduate Assistants (SU)	Higher education	Students with disabilities
Graduate student or doctoral students master	Attitudes or perceptions or opinions or thoughts or feelings or beliefs	Students with disabilities

Table 3

Search Terms for ProQuest

Search Term	Secondary search terms	Third term
Graduate Teaching Assistants	Attitudes and perceptions	Disability

Table 4

Search Terms for Psycho Info.

First Search Term	Secondary search terms	Third terms
Graduate Teaching Assistants	Attitudes or perceptions	Disability

Appendix A

Overview of Articles by Themes

	Themes				
	Teaching Beliefs	Professional Development-Instructional	Teacher Effectiveness	Mentorship	Inclusive teaching
M a i n P o i n t s	<ul style="list-style-type: none"> ·Mixed feelings of students' ability ·Teaching is a learning process ·Time pressure of teaching and research ·Self-concern and external evaluations ·Improve on subject knowledge ·GA relies on summative assessments ·Peer observation as seen as positive ·A mixture of learner-centered vs. teacher-centered 	<ul style="list-style-type: none"> ·Pre/Post on PD ·On-going PD ·PD Technology ·Self-image ·Teaching responsibilities ·Curriculum Development ·Teaching Philosophy ·Build learning communities ·Content Knowledge 	<ul style="list-style-type: none"> ·Improve student engagement ·GA's need for clear communication with students ·GAs teach as they were taught ·A need to increase self-efficacy ·Reflective practice necessary ·Negative teaching experiences led to self-doubt as an instructor ·A need to build rapport with students 	<ul style="list-style-type: none"> ·A need for mentorship for GA ·Provide immediate Feedback ·The need to mentor GAs with disabilities 	<ul style="list-style-type: none"> ·Beliefs on diverse teaching · Inclusive teaching practices of graduate teaching assistants with a disability ·UDI as a form of accommodation ·Lack of awareness of students with disabilities ·STEM discipline resistant to inclusive practices ·No accommodations for instructors, but as students with disabilities

	Themes				
	Teaching Beliefs	Professional Development-Instructional	Teacher Effectiveness	Mentorship	Inclusive teaching
S t u d i e s	<p>Cho, Kim, Svinicki, & Decker (2011)</p> <p>Douglas, Powell, & Rouamba (2016)</p> <p>Gallego (2014)</p> <p>Goertzen, Scherr, & Elby (2010)</p> <p>Gonsalves, Harris, & McAlpine (2009)</p> <p>Jordan & Howe (2018)</p> <p>Judson & Leingang (2016)</p> <p>Justice, Zieffler, & Garfield (2017)</p> <p>Kinchin, Hatzipanagos, & Turner (2014)</p> <p>Marbach-Ad, Ziemer, Orgler, & Thompson (2014)</p> <p>Miller, Brickman, & Oliver (2014)</p> <p>Muzaka (2009)</p> <p>Zehnder (2016)</p>	<p>Green (2010)</p> <p>Justice, Zieffler, & Garfield (2017)</p> <p>Leger & Young (2014)</p> <p>Linenberger, Slade, Addis, Elliott, Mynhardt, & Raker (2014)</p> <p>O'Neil & McNamara (2016)</p> <p>Parker, Ashe, Boersma, Hicks, & Bennett (2015)</p> <p>Ridgway, Ligoeki, Horn, Szeyller, & Breitenberger (2017)</p> <p>Russell (2009)</p>	<p>Cho, Kim, Svinicki, & Decker (2011)</p> <p>Deacon, Hajek, & Schulz (2017)</p> <p>Douglas, Powell, & Rouamba (2016)</p> <p>Gallego (2014)</p> <p>Goertzen, Scherr, & Elby (2010)</p> <p>Gonsalves, Harris, & McAlpine (2009)</p> <p>Henry & Bruland (2010)</p> <p>Muzaka (2009)</p> <p>Sohoni, Cho, & French (2013)</p> <p>Tulane & Beckert (2011)</p> <p>Young & Bippus (2008)</p>	<p>Damiani & Harbour (2015)</p> <p>Henderson (2010)</p> <p>Henry & Bruland (2010)</p> <p>Gilmore, Maher, Feldon, & Timmerman (2013)</p> <p>Parker, Ashe, Boersma, Hicks, & Bennett (2015)</p>	<p>Damiani & Harbor (2015)</p> <p>Embry & McGuire (2015)</p> <p>Fedukovich & Morse (2017)</p> <p>McCallister, Wilson, & Baker (2014)</p>

Appendix B

Faculty Attitude and Knowledge Regarding College students with disabilities (SWD)

Survey.

(Original survey, Sniatecki, Perry, and Snell, 2015).

1. Gender:
 - a. Male
 - b. Female
2. Department:
3. Total number of years in academia: _____
4. My position at
 - a. Full-time
 - b. Part-time
5. I believe that...
 - a. Students with learning disabilities can be successful at the college level
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities can be successful at the college level
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities can be successful at the college level
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
6. I believe that...
 - a. Students with learning disabilities are able to compete academically at the college level
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities are able to compete academically at the college level
 - i. Strongly Agree

- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree
- c. Students with mental health disabilities are able to compete academically at the college level
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
- 7. Students with disabilities are reluctant to disclose their disability to me.
 - i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
- 8. I would like more information about the needs of...
 - a. Students with learning disabilities
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
- 9. I sensitive to the needs of...
 - a. Students with learning disabilities
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - b. Students with physical disabilities
 - i. Strongly Agree
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
 - c. Students with mental health disabilities
 - i. Strongly Agree
 - ii. Agree

- iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
10. Students with disabilities attend postsecondary schools at rates proportionate to the rates of postsecondary attendance among students who do not have disabilities.
- a. Yes
 - b. No
11. I am familiar with the Office for Students with Disabilities (OSD) at USF?
- a. Yes
 - b. No
12. To your knowledge, which of the following resources are available for registered OSD students? Check all that apply.
- a. Transportation for students with mobility impairments
 - b. Books in alternative formats
 - c. Note takers
 - d. Psychological/educational testing
 - e. Wheelchair services
 - f. Assistance for students with temporary impairments
 - g. Escorts to and from classes
 - h. Dictation software
 - i. Testing accommodations (e.g., extend time, distraction-free testing location)
13. I think it would be appropriate to allow a student with a documented disability to substitute an alternative course for a required course if the substitution did not dramatically alter the program requirements.
- i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
14. I am willing to spend extra time meeting with students with documented disabilities to provide them with additional assistance as needed.
- i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
15. I make appropriate individual accommodations for students who have presented a letter of accommodations from OSD.
- i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
16. I make appropriate individual accommodations for students who have disclosed their disability to me but have not presented a letter of accommodations from OSD.
- i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree

17. Students with disabilities will not receive support services at _____ unless they disclose their disability.

- a. True
- b. False

18. Have you ever had to advise a student to change his/her major due to limitations associated with his/her disability? Yes/No

a. If yes, please describe this process: _____

19. When students with disabilities are having difficulties, I am uncertain about where I can find additional support on this campus.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

20. Given time constraints and other job demands, it is unrealistic for me to make reasonable accommodations for students with...

- a. Learning disabilities
 - i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
- b. Physical disabilities
 - i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree
- c. Mental health disabilities
 - i. Strongly
 - ii. Agree
 - iii. Neither agree nor disagree
 - iv. Disagree
 - v. Strongly disagree

21. Currently, in my role, I do not have sufficient knowledge to make adequate accommodations for students with disabilities.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- iv. Strongly disagree

22. I receive adequate support from my department/program/unit in working with students who have documented disabilities.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

23. _____ has an easily accessible collection of reference materials about students with disabilities.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

24. I am willing to help a student with a disability to navigate the various college processes and procedures.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

25. I am willing to be an advocate for a student with a disability and help him or her secure needed accommodations.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

26. The _____ campus an easily accessible for students with disabilities.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

27. In my discipline, providing accommodations to students with disabilities.

a. Compromises academic integrity

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

b. Gives an unfair advantage over other students

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

28. I am aware of evacuation procedures for student with physical disabilities in the event of a fire or fire drill.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

29. How many professional full-time staff are employed in the Office for Students with Disabilities?

a. Write in a number: _____

30. I would be interest in attending professional development sessions related to the needs of students with disabilities.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

32. I would be interested in attending a panel presentation where students with disabilities share personal information about their disabilities and their experiences in college.

- i. Strongly
- ii. Agree
- iii. Neither agree nor disagree
- iv. Disagree
- v. Strongly disagree

33. Of the following professional development opportunities, which would you be likely to attend? Check all that apply.

- a. Universal Design (UD) in course development
- b. Access issues related to technology in the classroom
- c. OSD Accommodations 101
- d. Disability Dos and Don'ts
- e. Best practices in working with students who are blind/visually impaired
- f. Best practices in working with students who are deaf/hard of hearing
- g. Best practices in working with students who are the autistic spectrum disorder
- h. Best practices in working with students with learning disabilities
- i. Best practices in working with students with physical disabilities
- j. Best practices in working with students with mental health disabilities
- k. Other(please explain): _____

34. I am familiar with the American with Disabilities Act (ADA) as it applies to students with disabilities in college.

- a. Yes
- b. No

35. As a faculty member, what do you want or need to know about students with disabilities that is not already provided/offered?

- a. Fill in: _____

Appendix C

Author Permission to Use and Modified Survey

From: Sniatecki, Jessica L ([jsniatecki](mailto:jsniatecki@brockport.edu)) jsniatecki@brockport.edu **Subject:** RE: Faculty attitudes and knowledge on SWD Survey

Date: May 15, 2019 at 11:37 AM

To: Yanlys Palacios-Alfonso ypalaci2@mail.usf.edu, hebosely@gmail.com, Snell, Linda (Isnell) Isnell@brockport.edu

Dear Yanlys,

You can absolutely use the survey for your research and modify it for your needs. I am not certain if the survey has been used with other populations, although we have granted permission to others for its use.

Best,

Dr. Sniatecki

Jessica L. Sniatecki, Ph.D., C.R.C.

Associate Professor

Healthcare Studies Department

Vice President of Membership – New York State Career Development Association The College at

Brockport, SUNY

350 New Campus Drive Brockport, NY 14420 jsniatecki@brockport.edu (585) 395-5092 Pronouns:

she/her/hers

Appendix D

Revised Survey

Graduate Teaching Assistants' knowledge and attitude regarding college students with disabilities (SWD) Survey.

Demographics

Graduate Teaching Assistants'/Teaching Assistants' attitude and knowledge regarding College students with disabilities (SWD) Survey.

1. Gender:

- a. Man
- b. Woman
- c. Non-binary
- d. Another identity not represented here: _____

2. What college are you affiliated with as a graduate teaching assistant? _____

3. Which of the following best describes the program that you are currently enrolled in?

- a. Master's Degree
- b. Graduate Certificate Program
- b. Specialist Degree
- c. Ed. D
- d. Ph. D.
- f. Other: _____

4. How many semesters have you been employed as a teaching assistant or graduate teaching assistant?

- a. 1-5 semester
- b. 6-10 semesters
- C. 11-15 semesters
- d. 16 or more semesters

Knowledge

5. Do you know the proportion of students with disabilities who attend postsecondary schools in comparison to students who do not have disabilities?

- a. Yes
- b. No

6. My university has an easily accessible collection of reference materials about students with disabilities.

Strongly Disagree Disagree Agree Strongly Agree

7. If a department allowed a student with a documented disability to substitute an alternative course for a required course if the substitution did not dramatically alter the program requirements, I would.

- i. Disagree, although I am obliged to follow the directions of the department.
- ii. Agree

8. Currently, in my role, I have sufficient knowledge to make adequate accommodations for students with disabilities.

Strongly Disagree Disagree Agree Strongly Agree

9. I receive adequate support from my department/program/unit in working with students who have documented disabilities.

Strongly Disagree Disagree Agree Strongly Agree

10. My university campus is accessible for students with disabilities.

Strongly Disagree Disagree Agree Strongly Agree

11. Students with disabilities will receive support services at my university when they disclose their disability.

- a. True
- b. False

12. I am aware of evacuation procedures for students with physical disabilities in the event of a fire or fire drill.

Strongly Disagree Disagree Agree Strongly Agree

13. When working with students, are you familiar with the process of providing the following accommodations to students with disabilities?

	Strongly Disagree	Disagree	Agree	Strongly Agree
Spend extra time meeting the student(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make appropriate individual accommodations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Give an alternative assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Knowledge of Services

14. Are you familiar with the Office for Students with Disabilities (OSD) at your university?

- a. Yes
- b. No

15. In the past, I have contacted the OSD at my university with regards to my students needing accommodations?

- a. Yes
- b. No

16. To your knowledge, which of the following resources are available for registered OSD students? Check all that apply.

- a. Note takers
- b. Dictation software
- c. Wheelchair services
- d. Escorts to and from classes
- e. Books in alternative formats
- f. Psychological/educational testing
- g. Assistance for students with temporary impairments
- h. Transportation for students with mobility impairments
- i. Testing accommodations (e.g., extended time, distraction-free testing location)

17. When students with disabilities are having difficulties, I am certain about where I can find additional support on this campus.

- Strongly Disagree Disagree Agree Strongly Agree

Attitudes towards SWD

Please indicate how much you agree with the following statements about students with specific disabilities.

18. I would like more information about the needs of students with _____.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Learning Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Health Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speech or Language Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional Disturbance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Orthopedic Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traumatic Brain Injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. I believe students with _____ **can be successful** at the college level.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Learning Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Health Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speech or Language Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional Disturbance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Orthopedic Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traumatic Brain Injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. I believe students with a _____ are able to **compete** academically at the college level.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Learning Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Health Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speech or Language Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional Disturbance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Orthopedic Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traumatic Brain Injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. I am sensitive to the needs of students with _____.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Learning Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Health Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speech or Language Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional Disturbance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Orthopedic Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traumatic Brain Injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Given time constraints and other job demands, it is realistic for me to make reasonable accommodations for students with...

	Strongly Disagree	Disagree	Agree	Strongly agree
Learning Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Autism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intellectual Disabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Health Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speech or Language Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional Disturbance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Orthopedic Impairments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traumatic Brain Injury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. I am comfortable when a student self-discloses their disability to me as the instructor of record?

Strongly Disagree Disagree Agree Strongly Agree

24. In my discipline, providing accommodations to students with disabilities:

	Strongly Disagree	Disagree	Agree	Strongly Agree
Compromises academic integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provides an unfair advantage over other students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. I am willing to help a student with a disability to navigate the various college processes and procedures.

Strongly Disagree Disagree Agree Strongly Agree

26. I am willing to be an advocate for a student with a disability and help him or her secure needed accommodations.

Strongly Disagree Disagree Agree Strongly Agree

Law

27. I am familiar with the Rehabilitation Act of 1973 as it applies to students with disabilities in higher education.

Strongly Disagree Disagree Agree Strongly Agree

28. I am familiar with the Americans with Disabilities Act (ADA) as it applies to students with disabilities in higher education.

Strongly Disagree Disagree Agree Strongly Agree

29. I am familiar with the Higher Education Opportunity Act of 2008.

Strongly Disagree Disagree Agree Strongly Agree

Professional Development

30. I would be interested in attending professional development sessions related to the needs of students with disabilities.

Strongly Disagree Disagree Agree Strongly Agree

31. I would be interested in attending a panel presentation where students with disabilities share personal information about their disabilities and their experiences in college.

Strongly Disagree Disagree Agree Strongly Agree

32. Of the following professional development opportunities, which would you be likely to attend? Check all that apply.

- a. Disability Dos and Don'ts
- b. OSD Accommodations 101
- c. Universal Design (UD) in course development
- d. Information on students with physical disabilities
- e. Access issues related to technology in the classroom
- f. Services for students who are blind/visually impaired
- g. Teaching strategies for students with learning disabilities
- h. Resources on students with autism spectrum disorder
- i. Self-Help strategies for students with other health impairments
- j. Best practices in working with students who are deaf/hard of hearing

33. Is there anything else you would like to share? Fill in the blank

Appendix E

Removed and added items on the instrument

Items (removed)	Items (added)
<p>16. I make appropriate individual accommodations for students who have disclosed their disability to me but have not presented a letter of accommodations from OSD.</p> <p>Strong disagree Disagree Agree Strongly Agree</p>	<p>13. When working with students, are you familiar with the process of providing the following accommodations to students with disabilities? <i>Give an alternative assignment</i></p> <p>Strong disagree Disagree Agree Strongly Agree</p>
<p>18. Have you ever had to advise a student to change his/her major due to limitations associated with his/her disability? Yes/No a. If yes, please describe this process: _____</p>	<p>15. In the past, I have contacted the OSD at my university with regards to my students needing accommodations?</p> <p>a. Yes b. No</p>
<p>29. How many professional full-time staff are employed in the Office for Students with Disabilities? a. Write in a number: _____</p>	<p>27. I am familiar with the Rehabilitation Act of 1973 as it applies to students with disabilities in higher education.</p> <p>Strong disagree Disagree Agree Strongly Agree</p> <p>29. I am familiar with the Higher Education Opportunity Act of 2008.</p> <p>Strong disagree Disagree Agree Strongly Agree</p>

Appendix F

Letter to Graduate Teaching Assistants' Union

Graduate Teaching Assistants Union,

My name is Yanlys Palacios, and I am currently working on my Ph.D. in Special Education. I am approaching my proposal day, and I was wondering if your organization is willing to help assist me. My research is on graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education. Therefore, I was wondering if your organization would be willing to send out an email to all graduate teaching assistants on campus. The first email would include who I am as a researcher, the importance of the study, and the link to the survey. Too, I would like to know if you could forward two friendly reminders along with a final reminder. Please let me know if you have any questions or concerns about this study and if your organization is willing to help me. Thank you for your time and consideration.

Respectfully,

Yanlys Palacios

Appendix G

Confirmation from the Graduate Teaching Assistants' Union

Re: help with study

Brianna Cusanno <bcusanno@gmail.com>

Thu 5/21/2020 12:04 PM

To: Elizabeth Kiebel <lizkgau@gmail.com>; ypalaci2@mail.usf.edu <ypalaci2@mail.usf.edu>

Hi Yanlys,

We can definitely sent out information about your study to our GA email list. Could you please write me the exact wording you'd like me to use in each of the emails for the next four weeks? Just to ensure all the details we send out are accurate and exactly the way they are supposed to be worded for your IRB.

Once I have the wording from you, I will send it out for the next four weeks beginning early next week.

Thanks, Bria

On Thu, May 21, 2020 at 12:00 PM Brianna Cusanno <bcusanno@gmail.com> wrote: Hi Liz, Sure. Sorry I dropped the ball on this! I will include this in our emails for the next few weeks, although probably not in the ones today and tomorrow about bargaining. But I will in the one I send next week with a bargaining update and the one the following week with exec bios, etc.

Thanks, Bria

On Thu, May 21, 2020 at 11:20 AM Elizabeth Kiebel <lizkgau@gmail.com> wrote: Hey Bria, A student contacted us a couple of months ago about GAU sending out a survey for her dissertation (I think I might have mentioned this to you back then). She's following up now and wondering how often we'd be willing to send it out. Could you contact her and arrange this based on when you were planning on sending out regular announcements?

Thanks! Liz

6/2/20, 10:36 AM

This email originated from outside of USF. Do not click links or open attachments unless you recognize the sender or understand the content is safe.

----- Forwarded message -----

From: Yanlys Palacios-Alfonso <ypalaci2@mail.usf.edu> Date: Mon, May 18, 2020 at 11:12 AM

Subject: Re: help with study

To: Elizabeth Kiebel <lizkgau@gmail.com>

Good morning Elizabeth,

I hope you have an awesome start to the summer semester. I was wondering if there is any possibility of my survey being sent out on a weekly basis for a month? The first week would be an introduction and weeks 2 and 3 with friendly reminders and the 4th week with a final and friendly reminder. Please let me know what you think. I look forward to hearing from you.

Thank you once again.

Appendix H

Procedure for Recruitment of Graduate Teaching Assistants

Week 1

Dear Graduate Teaching Assistant,

I am Yanlys C. Palacios, a doctoral candidate from the College of Education, and my area of expertise is in Special Education at the higher education level. Therefore, you are receiving this email to complete a survey. The title of the survey is called *Graduate Teaching Assistants' knowledge and attitudes Towards Students with Disabilities in Higher Education*. Below you will find the survey link.

I hope to learn about graduate teaching assistants' knowledge and attitudes of students with disabilities, as well as knowledge of accommodations, disability services, and legal background at the college level. Your input may help provide insight into how we can enhance the quality of services for students with disabilities at the college level.

Given my own recent experience as a graduate teaching assistant, I understand your demanding schedule. The survey is intended to be easy to complete and should take approximately 20- 25 minutes of your time.

Thank you very much for your time and attention to the study.

Sincerely,

Yanlys Palacios

Week 2

Hello Graduate Teaching Assistants,

This is a friendly reminder to participate in the survey called *GTA' knowledge and attitudes towards students with disabilities in higher education*. Your input may help provide insight into how we can enhance the quality of services for students with disabilities at the college level.

Given my own recent experience as a graduate teaching assistant, I understand your demanding schedule. The survey is intended to be easy to complete and should take approximately 20- 25 minutes of your time.

Thank you very much for your time and attention to the study.

Sincerely,

Yanlys Palacios

Week 3

Hello Graduate Teaching Assistants,

This is a second friendly reminder to participate in the survey called *GTA' knowledge and attitudes towards students with disabilities in higher education*. Your input may help provide insight into how we can enhance the quality of services for students with disabilities at the college level.

Given my own recent experience as a graduate teaching assistant, I understand your demanding schedule. The survey is intended to be easy to complete and should take approximately 20- 25 minutes of your time.

Thank you very much for your time and attention to the study.

Sincerely,

Yanlys Palacios

Week 4

Hello Graduate Teaching Assistants

This is a friendly and final reminder to participate in the survey called *GTA' knowledge and attitudes towards students with disabilities in higher education*. Your input may help provide insight into how we can enhance the quality of services for students with disabilities at the college level.

Given my own recent experience as a graduate teaching assistant, I understand your demanding schedule. The survey is intended to be easy to complete and should take approximately 20- 25 minutes of your time.

Thank you very much for your time and attention to the study.

Sincerely,

Yanlys Palacios

Appendix I: University IRB Approval



July 6, 2020

Yanlys Palacios
2105 Heritage Crest Drive Valrico, FL 33594

EXEMPT DETERMINATION

Dear Ms. Yanlys Palacios:

On 7/2/2020, the IRB reviewed and approved the following protocol:

Application Type: Initial Study	
IRB ID: STUDY000701	
Review Type: Exempt (2)	
Title: Graduate Teaching Assistants' Knowledge and Attitude Toward Students with Disabilities in Higher Education	
Funding: None	
Protocol:	<ul style="list-style-type: none">• Protocol Clean;• Protocol tracked V.2;• Consent form Tracked ; • Informed consent form;

The IRB determined that this protocol meets the criteria for exemption from IRB review. Approved study documents can be found under the 'Documents' tab in the main study workspace. X

In conducting this protocol, you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Please note, as per USF policy, once the exempt determination is made, the application is closed in BullsIRB. This does not limit your ability to conduct the research. Any proposed or anticipated change to the study design that was previously declared exempt from IRB oversight must be submitted to the IRB as a new study prior to initiation of the

Institutional Review Boards / Research Integrity & Compliance

FWA No. 00001669

University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 / 813- 974-5638

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change. However, administrative changes, including changes in research personnel, do not warrant a modification or new application.

Ongoing IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a new request to the IRB for a determination.

Sincerely,

Tatyana Harris

IRB Research Compliance Administrator

Institutional Review Boards / Research Integrity & Compliance

FWA No. 00001669

University of South Florida / 3702 Spectrum Blvd., Suite 165 / Tampa, FL 33612 974-5638

/ 813-

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Appendix J



Informed Consent to Participate in Research

Information to Consider Before Taking Part in this Research Study

Title: Graduate Teaching Assistants' Knowledge and Attitudes Towards Students with Disabilities in Higher Education

Study # 000701

Overview: You are being asked to take part in a research study. The information in this document should help you to decide if you would like to participate. The sections in this Overview provide the basic information about the study. More detailed information is provided in the remainder of the document.

Study Staff: This study is being led by Yanlys C. Palacios who is a lead investigator at/in University of South Florida. This person is called the Principal Investigator. Yanlys C. Palacios is being guided in this research by Dr. Ann Cranston-Gingras. Other approved research staff may act on behalf of the Principal Investigator.

Study Details: This study is being conducted at The University of South Florida and is supported/sponsored by Dr. Ann Cranston-Gingras. The purpose of the study is to explore graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education. The source of data collection will be a questionnaire. The survey questionnaire should take each participant between 20-25 minutes to complete.

Participants: You are being asked to take part because we want to explore graduate teaching assistants' knowledge and attitudes towards students with disabilities in higher education.

Voluntary Participation: Your participation is voluntary. You do not have to participate and may stop your participation at any time. There will be no penalties or loss of benefits or opportunities if you do not participate or decide to stop once you start. Alternatives to participating in the study include: Your decision to participate or not to participate will not affect your job status, employment record, employee evaluations, or advancement opportunities. Your decision to participate or not to participate will not affect your student status, course grade, recommendations, or access to future courses or training opportunities.

Benefits, Compensation, and Risk: We do not know if you will receive any benefit from your participation. There is no cost to participate. You will not be compensated for your participation. This research is considered minimal risk. Minimal risk means that study risks are the same as the risks you face in daily life.]

Confidentiality: Even if we publish the findings from this study, we will keep your study information private and confidential. Anyone with the authority to look at your records must keep them confidential.

Why are you being asked to take part?

We are asking you to take part in this research study because you are a graduate teaching assistant at USF.

Study Procedures

If you take part in this study, the researcher asks you to respond to questions on your knowledge and attitudes towards students with disabilities in higher education anonymously. If you take part in this study, you will be asked complete the survey to the best of your ability based on your experience. All information will be stored electronically on Qualtrics, which is password protected. Your time commitment for this survey is between 20-25 minutes. All data collected will be kept confidential.

Alternatives / Voluntary Participation / Withdrawal

You do not have to participate in this research study.

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study. Your decision to participate or not to participate will not affect your student status or job status.

Benefits and Risks

You will receive no benefit from this study. This research is considered to be minimal risk.

Compensation

There is no compensation if you complete the survey.

Privacy and Confidentiality

We will do our best to keep your records private and confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Certain people

may need to see your study records. The only people who will be allowed to see these records are: Principal Investigator, Yanlys C. Palacios, Advising Professor, Dr. Ann Cranston-Gingras, and Research Team, Dr. Leia Cain, Dr. Brenda Walker, and Dr. Zorka Karanxha. The University of South Florida Institutional Review Board (IRB). Government offices such as The Department of Health and Human Services (DHHS).

Your information collected as part of the research, even if identifiers are removed, may be used or distributed for future research studies.

If completing an online survey, it is possible, although unlikely, that unauthorized individuals could gain access to your responses. Confidentiality will be maintained to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet. However, your participation in this online survey involves risks similar to a person's everyday use of the Internet. If you complete and submit an anonymous survey and later request your data be withdrawn, this may or may not be possible as the researcher may be unable to extract anonymous data from the database.

Data collected for this research will be stored on USF Qualtrics located at the University of South Florida in the United States.

Contact Information

If you have any questions, concerns or complaints about this study, call Yanlys C. Palacios, at 813-385-6159. If you have questions about your rights, complaints, or issues as a person taking part in this study, call the USF IRB at (813) 974-5638 or contact the IRB by email at RSCH-IRB@usf.edu.

We may publish what we learn from this study. If we do, we will not let anyone know your name. We will not publish anything else that would let people know who you are. You have been given a copy of this form.

I freely give my consent to take part in this study. I understand that by proceeding with this survey, I am agreeing to take part in research and I am 18 years of age or older.

[Link to survey](#)

Appendix K

Flyer



Research study on Graduate Teaching Assistants' knowledge and attitudes Towards Students with Disabilities in Higher Education.

Where: University of South Florida.

Lead Investigator: Yanlys C. Palacios, 813-505-6407.

Purpose of the Study: I hope to learn about graduate teaching assistants' knowledge and attitudes of students with disabilities, as well as knowledge of accommodations, disability services, and legal background at the college level.

Who's Eligible: Graduate Teaching Assistants.

IRB: STUDY000701.

Benefits: Your input may help provide insight into how we can enhance the quality of services for students with disabilities at the college level.

Time Commitment: Approximately 20- 25 minutes of your time.

Compensation: None.

Survey link:



Appendix L

Chart Analysis

Research question 1

Research question one	Survey Questions from the survey	How to analyze
Demographics	1,2,3,4	Categorical
1. What are the attitudes of graduate teaching assistants towards students with disabilities in a selected higher education institution?	<u>General attitudes</u> 23-26 <u>Specific attitudes towards disability type</u> 18-22	Questions 18-26 Percentage agreement Descriptive statistics Missing responses Mean, median, standard deviation

Research question 2

Research question two	Survey Questions from the survey	How to analyze
<p>2. How do graduate teaching assistants at a selected higher education institution rate their knowledge disability support services and disability laws for students with disabilities?</p>	<p><u>Disability Support Services</u> 10,11, 14,15 & 17</p>	<p>Questions 10,11,14,15, & 17 Percentage agreement, percentage of non-agreement responses and missing responses</p>
	<p><u>Accommodations</u> 5-9, 12,13a.b.c. & 16</p>	<p>Question 16 Average percentage to each category and frequency</p>
	<p><u>Disability Laws</u> 27-29</p>	<p>Questions 27-29 Missing response, percentage agreement, percent non-agreement and mean scores.</p>
	<p><u>Pearson Correlation</u> Average mean scores of attitudes, knowledge of accommodations, knowledge of disability laws, and knowledge of disability support services</p>	<p>Attitude average Average scores of accommodations, disability laws, and disability support services</p>

Research question 3

Research question three	Survey Questions from the survey	How to analyze
<p>3. Does graduate teaching assistants' knowledge and attitudes of students with disabilities in higher education vary by:</p> <p>a) Gender</p> <p>b) Discipline areas</p> <p>c) Program degree</p> <p>d) Semester teaching as a graduate teaching assistant</p>	<p><u>Knowledge</u> mean score</p> <p><u>Attitudes</u> mean score</p>	<p>Descriptive statistics</p> <ol style="list-style-type: none"> 1. Normal Distribution 2. Homogeneity of Variance 3. Independence of Observation <p>One-way Analysis of Variance towards attitudes and knowledge by categories</p> <ol style="list-style-type: none"> a) Gender b) Discipline areas c) Program degree d) Semester teaching as a graduate teaching assistant <p>Post-Hoc Analysis (Tukey's HSD) Alpha .05 Between and Within Groups F test</p>

Research question 4

Research question four	Survey Questions from the survey	How to analyze
<p>4. What are the professional development needs of graduate teaching assistants related to students with disabilities?</p>	<p><u>Professional Development</u> 30-32</p>	<p>Questions 30-31 Sample size, agreements and mean</p> <p>Question 32- Categorical Frequency and percentage</p>