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The Student Voice: Recommendations for Supporting the Success of Graduate Students with Disabilities in Online Courses

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ABSTRACT

This article offers recommendations for online graduate students, instructors, and universities to better meet the needs of students with disabilities who increasingly participate in online courses. Using semi-structured interviews, researchers asked what recommendations participants from respective disability categories have for supporting them in their pursuit of a graduate education in an online environment. Thirteen graduate participants represented five disability classifications including learning disabilities, attention deficit disorder/attention deficit hyperactivity disorder, psychological disorders, chronic health impairments, or visual impairments. Interview transcripts were analyzed to identify disability-specific recommendations through constant comparison of individual data sets. Recommendations for students, instructors, and universities focused on instructor-student communication and relationships, online course design, and a changing and active role of institutional support services. The collaborative efforts of all are emphasized.

A significant and increasing number of students with disabilities currently attend post-secondary education (Seabrooks-Blackmore & Patterson, 2015). Census data from 2011–2012 indicated 11% of baccalaureate students reported disabilities compared to 5% of students seeking a master's degree or higher (S, 2016); by the 2015–2016 academic year, students with disabilities in higher education had notably increased, with 19% of undergraduates and 12% of postbaccalaureate students reporting a disability (National Center for Education Statistics, 2018). This rise in graduate level education for individuals with disabilities is certainly a welcomed achievement. Also growing exponentially is the rate of online learning, an expansion accelerated across all education levels by the Covid-19 pandemic (Masalimova et al., 2022), creating new opportunities and challenges for students with a variety of disabilities (Betts et al., 2013).

Online learning can provide alternatives to face-to-face classes, both pedagogical and technological, for students with a variety of visible and hidden disabilities (Heiman & Shemesh, 2012); it can produce a reduced-barrier environment, produce social benefits, and promote inclusion by reducing barriers due to health, transportation, and/or physical needs (Di Iorio, Feliziani, Mirri, Salomoni, & Vitali, 2006). Online learning can also allow

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students to choose the best type of environment for them based on flexible pacing and complete work at preferred instead of prescribed times (Coy, 2014). Students in higher education may perform better socially by using interactive tools in online courses (Almari & Tyler-Wood, 2016). Although online learning opportunities have increased, students with disabilities may still be overlooked in the online environment, impacting both achievement and satisfaction. It is vital to affirm there are far more students who identify as having a disability than report them. In fact, a recent national longitudinal study from the Institute of Education Sciences (2022) reported that among students who ever had a reported disability, 65% did not report while attending college; of those who responded they did have a disability while attending college, only 37% indicated they informed the institution. These realities create a need to better understand and respond to issues faced by graduate students with disabilities and to examine strategies for success.

The model for accommodating students with disabilities in higher education has changed over the past decade to encompass Universal Design for Learning (UDL), a social model that emphasizes removal of barriers within environments, a major advantage of the online environment. The UDL model stresses accommodating all people instead of accentuating deficits of a few (Fichten, Asuncion, & Scapin, 2014; Griful-Freixenet, Struyven, Verstichele, & Andries, 2017). However, the use of UDL in online learning is often by “happenstance than intention” (Fichten et al., 2014, p. 372). While some students may say they need no assistance, most students need some level of instructional or technological support to be successful, and students with disabilities need more purposeful and intentional supports (Seabrooks-Blackmore & Patterson, 2015). Some students have acknowledged that online classes created additional challenges due to increased demands for independent time management (Scott, 2019).

A major factor is to understand individual learning needs within the context of a disability and the interaction of said disability within the online environment. In a prior Terras, Phillips, and Leggio (2015); (2020) interviewed graduate students with a variety of disabilities enrolled in online courses revealing that successful online accommodations resulted from particular efforts made by students, instructors, and the university. Each entity had a specific responsibility contributing to student success. This current study expands on those findings through a distinctive analysis of results by disability classifications to examine patterns of recommendations from personal experiences and to identify disability-specific suggestions. The researchers asked: What recommendations do participants from respective disability categories have for supporting them in their pursuit of a graduate education in an online environment? This new analysis also adds the perspectives of three additional participants using semi-structured interviews to represent disability categories more completely, with results offering suggestions for more efficiently and effectively supporting the success of online students with disabilities.

The context of disability classifications in higher education

A major component of the accommodation model in higher education is to classify students by type of disability, both visible and unseen. This classification frames the concepts, assumptions, expectations, and beliefs that informed the design and analysis of this study (Maxwell, 2005). While there is no federal law governing classifications in higher education, many university disability services use similar categories to P-12 education addressing

accessibility through a patchwork of federal and state laws (Edmonds, 2004). U. S. Department of Education (2011) reported the following percentages of students with disabilities within the classification system illuminated in the present study: 31% learning disabilities, 18% attention deficit hyperactivity disorder, 15% psychological disorders/mental illness/psychiatric condition, 11% chronic health impairments, and 3% visual impairments. To best understand category specific participant recommendations for practice, it is essential to consider the construct of each and how disability may impact an online learner.

Chronic health impairments

Chronic health impairments include various health and systemic disorders, but not limited to multiple sclerosis, seizure disorders, diabetes, cancer, cardiac conditions, gastrointestinal conditions, renal disease, lupus, sickle-cell anemia, and others (University of Memphis's Disability Resources for Students, 2017). For many students with health impairments, online learning may be the only means for accessing postsecondary education through the affordance to work from home on a flexible schedule when medical needs arise. Some conditions may impact learner performance on a recurrent basis and others in a chronic manner. Depending on the impairment, it may interfere with memory, strength, endurance, attention, energy, physical skills (e.g., typing) or mobility (Heward, Alber-Morgan, & Konrad, 2017).

Learning disabilities

According to Heward et al. (2017), learning disabilities (LD) is “a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities” (p. 146). These lifelong limitations can affect the brain's ability to receive, process, store, and respond, and is inclusive of dyslexia (language processing-reading, writing, and spelling), dyscalculia (mathematical computation and problem solving), and dysgraphia (writing) (Betts et al., 2013). There are now significantly more students with LD enrolling in post-secondary institutions (Johnson, Zascavage, & Gerber, 2008, December); students with LD comprise close to 50% of all students with disabilities in higher education (National Center for Educational Statistics, 2011). According to Heiman and Shemesh (2012) students face academic, social, and psychological challenges, along with significant deficits in language and math. These characteristics and associated difficulties can create barriers in online learning due to issues of clarity in written instructions, unclear course organization, decreased anonymity, and diminished opportunities for personal interactions which may be an area of strength.

Psychological disorders

According to the National Alliance on Mental Illness (National Alliance on Mental Illness (NAMI), 2017), mental illness is a condition affecting a person's thinking, feeling, or mood. Equivalent terms include psychological, psychiatric, and emotional/behavioral disorders and may affect the ability to relate to others and function each day. Even with the same

diagnosis, individuals will have different experiences. An estimated 15% of college students have psychological disorders (U. S. Department of Education, 2011) with the prevalence of any diagnosis among U.S. adults (age 18 and over) being 17.9% (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2012). Anxiety and depression are the most prevalent disorders amongst college students and 75% of mental health conditions develop by age 24 (National Alliance on Mental Illness (NAMI), 2017). Of full-time students between the ages of 18–22 years, 8.4% have experienced a major depressive episode in the past year (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2012). Yet, according to a 2020 survey (Mental Health America, 2020), 70% of students with mental health disabilities were not registered to obtain accommodations, and 33% stated they were not aware they were eligible. The unique characteristics of internalized and externalized behaviors can affect the learner as communication and relationship-building are directly impacted, and any problems have a greater opportunity of being left unaddressed if face-to-face interaction is absent. Remote and hybrid delivery models alongside Covid-19 have further complicated issues (Garris & Fleck, 2020), a difficulty recognized by university leaders. American higher education presidents noted student mental health as a number one priority (Lederman, 2020).

Visual impairments

According to the American Optometric Association (2017), any person with vision that cannot be corrected to better than 20/200 in the best eye, or who has 20 degrees or less of visual field remaining, is considered legally blind. This includes classifications of total blindness, low-vision, and color-blindness (Heward et al., 2017). Students with visual impairments have a variety of needs to access course materials in the online environment and typically access course materials using Braille, screen readers (voice output), and screen magnifiers for text/cursor enlargement and visual contrast (American Foundation for the Blind, 2017).

Attention deficit hyperactivity disorder

According to the American Psychiatric Association (2013), attention deficit hyperactivity disorder (ADHD) is characterized as a persistent problem of inattention and/or hyperactivity-impulsivity which interferes with an individual's functioning due to inattention and/or hyperactivity/impulsivity that interfere with or reduce the quality of social, academic, or occupational functioning. Individuals with ADHD generally have difficulty with executive functioning tasks such as getting organized, staying focused, making realistic plans, and thinking before acting. Common learner characteristics include forgetting material, performing poorly on timed tests, taking longer to complete assignments, sustaining attention for extended time, failing to finish schoolwork, and being unorganized (Lewandowski, Lovett, Coddington, & Gordon, 2008). In an online learning environment, social learning opportunities can be limited, and students must be able to self-monitor and self-organize, sticking to deadlines for work completion. Online courses without enough structure can intensify issues of executive functioning associated with ADHD.

Purpose of the study

The purpose of this study was to obtain recommendations from graduate students with disabilities receiving accommodations in online courses based on their disability classifications. To yield targeted data for improving the online experience, recommendations were noted for stakeholders in the learning triad: students, instructors, and the university. While each student with a disability must have their learning needs understood individually, it is also beneficial to situate the learning context within evidence established for each disability classification.

Method

This qualitative study used semi-structured interviews to explore participants' thoughts and experiences in greater depth around potentially sensitive topics (Merriam & Tisdell, 2016). The study included a new, combined analysis of data from participants collected in a parent investigation (Terras et al., 2015) and gathered additional interview results from three graduate students regarding their experiences to answer a refined research question. The current analysis sought to expand the original research regarding disability accommodations in online courses (Terras, Anderson, & Grave, 2020) using the established interview protocol to identify disability-specific recommendations. The interview protocol and qualitative data (i.e., participant quotations) are available in the accompanying online repository (Anderson, 2022).

The study was conducted within a college of education and human development at a public university located in the central northern plains region of the U.S (enrollment of approximately 15,000). The college contained three departments offering online, graduate-level programs. Following confirmation of ethical approval, participants enrolled in online master's programs were recruited through an emailed research announcement sent by the three program directors. Criteria solicited students with disabilities who had taken at least one online course. Interested students emailed the principal investigator for more information and screening. The principal investigator screened potential participants to verify the diagnosed disability and to ensure eligibility; those meeting criteria and who disclosed a disability that ensured a representative sample of varying classifications were provided information about the study's purpose and benefits, participant role, and confidentiality. Consenting students were contacted by an investigator to schedule an interview. These procedures resulted in ten interview transcripts being obtained from the previous study with three additional participants recruited. The 13 graduate student participants were distributed across five disability classifications: chronic health impairments ($n = 2$), learning disabilities ($n = 3$), psychological disorders ($n = 3$), visual impairments ($n = 2$), and ADHD ($n = 3$). No participants reported comorbid impairments. No students with developmental disorders such as autism spectrum disorder responded to recruitment efforts.

Data collection occurred across two semesters using a semi-structured interview guide (Terras et al., 2015). The guide was divided into three sections: participant, disability and accommodations, and attitudes toward receiving accommodations (see Appendix A). Interviews were about one hour and conducted via participant preferred method of phone, video conferencing, or in person. Researchers took copious notes during the

interview, emailed transcripts to participants for validation, and subsequently coded transcripts to protect confidentiality.

Researchers systematically analyzed data using a combination of strategies from Hill, Thompson, and William's (1997) *A Guide to Consensual Qualitative Research* (CQR) and an item-by-item analysis to identify core ideas. The process consisted of multi-stepped analysis and audit phases: (a) a template for each of the five disability classifications was created and populated with responses per question, (b) responses were analyzed to determine recommendations by an initial evaluator with core ideas and recommendations noted, (c) an independent examination was conducted by an auditing researcher to confirm recommendations, and (d) recommendations were consolidated across disabilities categories into the areas of student, instructor, and university; with final wording revised for clarity and core meaning.

Trustworthiness

At the beginning of the study, clarification of researcher bias was discussed to help researchers set aside predetermined conceptions about disability accommodations in the online environment. Through consensual discussions, researchers held one another accountable for possible bias. Interviews adhered to the semi-structured interview protocol, and disability classification was used as a foundation for analysis. Replication logic was used across the parent data set and this study. During analysis, the audit phase addressed researcher reliability; while no discrepancies arose between reviewers, clarification of core ideas and suggestions of illustrative statements were added.

Results

Throughout the study, participants revealed strategies and recommendations for supporting students in the online environment. The resulting 24 recommendations are presented in [Table 1](#) according to disability category and the stakeholder to whom they reflect. Representative statements of participants are included in Appendix B available in the online repository (Anderson, 2022) to support recommendations and provide additional insight and practical guidance. Statements included as recommendations in [Table 1](#) are emphasized within the results.

Chronic health impairments

Participants with chronic health impairments provided eight recommendations, two for students, three for instructors, and three for the university. Participants recommended students *proactively self-advocate by communicating needs directly with the instructor*. They indicated students should contact Disability Services (DS) to obtain necessary paperwork even before it seemed necessary, because it “always helped” in identifying supports. They advised contacting instructors at semester start about individual needs before an issue arose. It “always helped” to have documentation from Disability Support Services (DSS) when talking to instructors. Additionally, students should *demonstrate responsibility in managing assignments and timelines in case of delays related to physical condition*. Participants provided examples of self-accommodation for individual health concerns and held the belief that students should “take responsibility” for their own learning needs.

Table 1. Participant Recommendations for Students, Instructors and Universities by Disability Category.

	Chronic Health	Learning Disability	Psychological	Visual	ADD/ADHD
<i>Students</i>					
(1) Proactively apply for services, share documentation, and communicate needs directly with instructor at semester start	X	X	X	X	X
(2) Self-advocate and demonstrate persistence		X			
(3) Build relationships with instructors, through multiple modes of communication so instructors know the student's needs and work ethic		X	X	X	X
(4) Use the supports and services provided				X	X
(5) Demonstrate self-awareness, self-monitoring, and self-accommodation.				X	X
(6) Seeking clarification when needed					X
(7) Accept the disability, self-accommodate, and seek other needed services to address individual needs			X	X	
(8) Demonstrate responsibility in managing assignments and timelines in case of delays related to physical health condition	X				
<i>Instructors</i>					
(1) Publicize DSS services in class	X	X			
(2) Design online courses compatible with UDL that support self-accommodation by students with disclosed and undisclosed disabilities	X	X	X	X	X
(3) Use a range of relationship-building strategies to foster engagement		X		X	
(4) Recognize student's work ethic and anxieties around performance					X
(5) Patiently re-explain information					X
(6) Work with the student to determine what is needed. Be understanding of the need for extra time needed for assignments and quizzes/tests. Be flexible about deadlines.					X
(7) Follow DSS documented accommodations	X	X	X		
(8) Monitor the progress of students and reach out to them to determine what is needed			X		
(9) Respect the student's knowledge of what is needed				X	
<i>Universities</i>					
(1) Publicize DSS services		X			
(2) Provide a range of DSS services to students both online and on-campus	X	X	X	X	X
(3) Analyze student feedback on how to improve DSS services to uphold the rights of students		X			
(4) Have DSS personnel provide ongoing support and guidance throughout the semester					X
(5) Ensure instructor compliance with accommodations	X		X	X	
(6) Provide crisis services to online students			X		
(7) Provide DSS services that support instructors	X			X	

The first recommendation for instructors was to ***guide students to DS and then follow the documented accommodations***. Instructors “should have a disability disclaimer in their syllabus” ensuring it is clear. When accommodations are indicated, the instructor should be empathetic to the student's circumstances and implement them without resistance. In an online environment, this could mean leaving a webcam discussion to address physical needs. Instructors should also ***anticipate that some students have undisclosed disabilities when designing courses because instructional choices can affect the otherwise flexible nature of online courses***. The nature of online learning, particularly asynchronous formats, allow students to work in ways that do not exacerbate their physical condition or increase

absences. Instructors should remember that students will often self-accommodate, with or without instructor knowledge.

Participants acknowledged it is the university's responsibility to **provide DS that support students and instructors**. Even though participants did not always use DS, both advised universities have a responsibility to provide services to support both students and instructors. This may involve providing support and information to instructors about the disability as well as detailing which accommodations to provide. Participants also noted it is the university's responsibility to **enact accommodation policies and enforce compliance**. Although participants did not report difficulties in obtaining accommodations, they viewed DS as playing a role in advocating for necessary accommodations if the need arose (also see Appendix B quotes 1–5).

Learning disabilities

Graduate students with learning disabilities (LD) suggested ten recommendations: three for students, four related to instructors, and three for the university as presented in Table 1 and Appendix B quotes 6–13. First, students should **proactively apply for disability services, share documentation, and communicate needs directly with the instructor at the semester start**. Regardless of whether it occurred formally through DS or informally between the student and instructor, all indicated the student should openly communicate needs and past experiences “early” or “immediately,” generally at the start of class. Additionally, students should **self-advocate and demonstrate persistence**. This means knowing one's own needs and self-accommodating using metacognitive strategies. Every participant provided examples of strategies they used to comprehend course materials and to successfully complete assignments.

The importance of **building relationships with instructors was also emphasized**. Participants indicated having a positive relationship with the instructor as foundational to feeling comfortable reaching out when an issue arose. Some participants shared negative experiences having been accused of “daydreaming” or deemed as “lazy.” Students suggested that **instructors should publicize DS services, then follow the documented accommodations**. All participants indicated that when DS provided disability documentation, instructors provided accommodations. However, one student also reported that not all instructors informed students about DS. Another recommendation for instructors was to **design online courses that support self-accommodation**. Each participant offered exemplars of self-accommodation to review course materials such as having a partner read content to them, reading aloud, and re-reviewing materials until mastered. All the strategies required extra time. Other specific recommendations included providing clarity around assignments and due dates, study guides to focus long reading assignments, and timelines for stages of large projects to help with organization. As one participant pointed out “I am a slow reader so they (instructors) may think I'm not setting aside enough time to read assignments.” A second participant confirmed “I struggled with reading on the screen” and would print assignments instead of reading them on the computer, “Whenever I had to do something really thought provoking I always printed it off.” Another responded, “I know that I have to take the time to do whatever I can to help myself.” One participant explicitly connected the online format to supporting self-accommodation, “I have found that online is easier because I can go back as many times as I want to – not like a lecture I have to listen to.” Participants

recommended instructors *use a range of relationship-building strategies to foster engagement*; they indicated the desire for face-to-face interactions beyond e-mail. They indicated a need to feel like their instructors were “willing to help” and that they would be “flexible.” Frequent correspondence, particularly face-to-face, reduced the likelihood of misunderstanding.

Participants recommended universities should *publicize and provide DS to students*, and also the university should *analyze student feedback on how to improve DS to uphold the rights of students*. Participants noted discrepancies between services offered to students online compared to those offered on campus, namely computer programs that read text aloud. One participant indicated the accommodation of extra time on assignments was not granted by DS, but after poor performance in class, the instructor “worked with” the student to address the need for accommodation.”

Psychological disorders

Participants with psychological disorders provided nine suggestions, three for each stakeholder. Participants recommended that students *proactively apply for DS, share documentation, and communicate needs with instructors at the start of the semester*. Early disclosure of the disability, its impact on performance, and what is needed to support learning should occur before major issues arise since stressors can impact the ability of the student to self-advocate during a crisis. Two of the three participants reported being unable to complete the process of declaring their disability with DS when needed because symptoms of their disability made following through on the process insurmountable. As one noted “symptoms come and go” often in relation to times of increased stress. “Increased stress” was reported to make conditions such as depression “debilitating.” Participants recounted similar experiences where the psychological disorder impeded their ability to complete coursework or communicate with the instructor, sometimes resulting in failed courses or needing to take an incomplete. Changes in medications were also reported to negatively impact overall functioning. One participant summarized it was her “responsibility to let the instructor know ahead of time” of accommodation needs.

Participants recommended students *build relationships with instructors through ongoing communication so they know the student’s needs*. All three stressed the importance of a positive, open, working relationship with instructors to feel supported. Participants recommended that students need to *accept the disability, self-accommodate, and seek other needed services to address mental health needs*. Each participant detailed self-management strategies centered on organization, time management, and flexible work times. Increased stress precipitated an exacerbation of anxiety and depression symptomology, disrupting follow-through.

For instructors, participants stated they should *follow DS documented accommodations*. Students should share documentation and instructors should “read the letter and ask if they had questions and then be willing to work with the accommodation.” All three participants indicated that without accommodation they would not have been able to succeed in their courses. One expressed concern over “fairness” regarding some accommodations over others. Having documentation from DSS to share with the instructor was reported to be helpful because they may otherwise “not feel comfortable asking” on their own. Moreover, instructors should *design online courses that allow for self-accommodation with clear*

expectations and policies. Participants used a variety of strategies to self-accommodate which were generally well-supported by asynchronous online course. Participants found they were able to keep up better on smaller assignments with more frequent feedback. Participants also recommended that instructors **monitor the progress of students and reach out to them to determine what is needed.** This requires instructors to recognize the effort required by students with psychological disorders to initiate communication.

Participants with psychological disorders recommended that universities **provide DS and ensure instructor compliance with accommodations.** Each participant needed accommodations at some point in their degree. They indicated in some courses they could negotiate accommodations directly with the instructor, but in others it presented more challenges. Not all instructors provided accommodations without documentation from DS. Further, the university should **provide a range of accommodations and supports, including crisis services, to online students.** Participants described times when they were overwhelmed and began the process of declaring a disability with DS, only to become discouraged, overwhelmed, and stalled. Accommodations such as extra time and software for text reading were accommodations specifically identified as helpful and necessary, but not available to online students (see Appendix B quotes 14–18).

Visual impairments

Participants with visual impairments provided 11 recommendations including five for students, three for instructors, and three for the university. They recommended students **proactively apply for DS, share documentation, and communicate with instructors at the start of the semester.** One participant involved DS while the other did not, but both indicated the importance of communicating needs with the instructor right away. The one who used DS needed to ensure that an accessible textbook was available at the start of class. Participants also recommended students need to **accept, self-accommodate, and self-monitor individual needs as well as use the full range of supports available.** Both participants relied most heavily on self-accommodation. This often resulted in extra expenses, time, and effort. Both described ways they creatively worked around barriers, such as computers with screen readers and hiring a reader or driver to complete assignments. Each benefitted from having both audio and visual explanations of materials. An overall theme to their responses was one of self-reliance. They also recommended that students **build relationships with instructors, so they know the student's needs.** When accommodations were needed, problem solving with the instructor directly was advised.

Additionally, instructors should **design online courses that are fully compatible with Universal Design for Learning (UDL).** They should consider the amount of time provided for review of materials, the timelines from when assignments are introduced and due, and that actions taken by instructors can make content inaccessible. Handwritten materials and videos were particularly troublesome. It was recommended that instructors **initiate communication with the student to foster a positive relationship and work with them to determine what is needed.** Instructors need to respect the student's self-knowledge and proactively reach out, even if only by e-mail, to provide support, feedback and validation. Instructors should respect that students know how to self-accommodate and when they seek accommodations from an instructor it is because they need it.

At the institutional level, participants indicated universities should **support instructors with information and guidance**. Participants indicated that instructors were willing to work with them to problem-solve solutions and make accommodations, even when DS would not document the need for a specific accommodation. Both participants provided clear, consistent messages that DS remained a vital necessity. They posited that it is the university's responsibility to **provide accessible materials** (see Appendix B quotes 19–24).

Attention deficit hyperactivity disorder (ADHD)

Participants with ADHD offered 11 recommendations: five for students, four related to instructors, and two for the university. Articulated was that online students should **proactively apply for services, share documentation, and communicate needs with instructors at semester start**, and students should **use the supports provided**. Documentation of the disability assisted in obtaining necessary accommodations, but there remained trepidation for two of the participants in disclosing the disability unless they “really needed” an accommodation out of concern for appearing “different or incapable.” It was recommended that going to the instructor right away at the start of the semester (with or without DS documentation) to “explain the disability” and the “accommodations needed” was best. In addition, students should **demonstrate self-awareness, self-monitoring, and self-accommodation**. All participants provided examples of self-monitoring and self-accommodation, primarily to reduce distractions and increase organization. Also recommended was that online students **build relationships with instructors through multiple modes of communication and seek clarification when needed**. Feeling supported was significant and facilitated through frequent communication, particularly via means other than e-mail.

Participants recommended that instructors **design online courses that scaffold learning using multiple modes of teaching, have consistent locations for course materials and for submitting assignments, and have clear due dates, policies, and procedures**. Instructors should be aware of the degree to which students self-accommodate to address challenges with executive functioning. Changes to online design (e.g., proctored exams) can necessitate a quiet testing location which is usually unnecessary. The importance of clarity and consistency in course materials was stressed through the recommendations of “Keep directions for assignments in one place,” and “Have one consistent way of submitting assignments.” Participants also stated instructors should **recognize the student's work ethic and anxieties about performance and patiently re-explain information**. Participants indicated a preference for “talking to” instructors beyond e-mail, citing that e-mail can be misconstrued. Two participants felt judged or unsupported by either DS and/or instructors at some point, and all participants carried past experiences of feeling judged into current interactions. Participants recommended that instructors **work with the student to determine what is needed, understand the requests for extra time on assignments and quizzes/tests, and to be flexible about deadlines**. Each of the participants revealed specific strategies they used, most of which required extra time. As such, they indicated instructors should be understanding of their efforts and recognize they know what is needed. The most common accommodation request by participants was to have “extra time” to complete assignments due to difficulties in concentration and focus. Time was needed for participants to “read and re-read, read out loud, talk to myself about it,” and that “. . . being flexible with

due dates” was helpful. A final recommendation was that “If there is any way a professor can make small changes that don’t change the core of the work, I believe they should do that.”

Participants with ADHD recommended the university *publicize and provide DS to students*. All three participants indicated that DS played an important role in documentation and identification of accommodations. Each used that information to work directly with instructors. They also recommended to *have DS personnel provide ongoing support and guidance throughout the semester* and that DS must also work hard to connect on a personal level, that they should “See what the student CAN do before seeing what they can’t.” Participants recommended the university *provide a range of supports/accommodations equally to both online and on-campus students*. Participants noted that support accessible online was diminished compared to what was offered at the undergraduate level on-campus. One participant reported she “loves SmartThinking,” a service provided to assist with editing written work. The most common request for support was to have more time for assignments, a request that was not always granted by DS, but usually granted by instructors on an individual basis (see Appendix B quotes 25–33).

Discussion

Recommendations from participants speak to how each type of disability provides unique challenges in online learning, as well as to common approaches to improve instruction and accommodations regardless of disability classification. Participants in this study clearly shared that successful online learning is a joint effort amongst students, instructors, and the university.

Specificity and scope in graduate level disability support

Students provided 24 recommendations to better support their pursuit of an online, graduate education (see Table 1). When examined according to disability, participants provided a nearly equal number of suggestions: eight (8) from those with chronic health impairments, 10 from those with learning disabilities, nine (9) from those with psychological disorders, 11 from those with visual impairments, and 11 from those with ADHD.

Participants with chronic health impairments provided one recommendation unique to only this disability category, that students demonstrate responsibility in managing assignments and timelines in case of delays caused by the physical health condition. The unknown factor of when a health condition may intensify (e.g., arthritis or diabetes) creates uncertainty regarding when, or even if, a disability should be disclosed. Indeed, the need for medical leave or decreased workload may never even arise. Overall, suggestions within this disability category were oriented toward organizational processes and institutional assistance, a finding supported by the work of Watermeyer, Crick, Knight, and Goodall (2021). Health impairments impact access and performance in online learning in a different capacity, yet a common element emerged that when the impairment is impacting, the student may not be able to manage their online learning responsibilities. To that end, previous research has suggested a holistic learning management plan could be useful to better support students with health conditions (Kreider, Bendixen, & Lutz, 2015).

Participants with learning disabilities provided two recommendations unique to this category of disability: for students to self-advocate and demonstrate persistence, and for the

university to analyze student feedback on improving DSS services to uphold student's rights. These broad suggestions seem fitting given a disability category representative of a wide range of disorders in listening, speaking, reading, writing, reasoning, or math. Indeed, there were many similar suggestions provided from students with LD and the other categories: five were the same as chronic health, five the same as psychological, five the same with visual, and four with ADHD. Overall, these suggestions were focused more so on personal characteristics and relationships. While admittedly not unique or restricted to a specific disability category, suggestions do confirm the well-documented need for a proactive approach from the student and the vital need for self-advocacy, particularly in the online environment. Also highlighted is the need for consistent feedback mechanisms for the university to consider suggestions of graduate students with disabilities in a spirit of continuous improvement; new circumstances and technologies will continue to emerge, and what is working well now for individuals with learning disabilities may not be sufficient in the future (Gin, Pais, Parrish, Brownell, & Cooper, 2022).

Participants with psychological disorders provided one suggestion unique to this cohort; to provide crisis services to online students. Students noted an inequity regarding on-campus services which were not available to online students. Interestingly, one area in which the pandemic has had a positive impact is to increase the availability of online services. It is further noted that several recommendations required initiative by someone other than the student themselves. This seems fitting given the nature of the disability itself which makes doing what is suggested for students (e.g., self-disclosure) quite difficult, yet also is contradictory to policies requiring individual action or disclosure to access services. Like findings from Barnard-Brak and Sulak (2010) regarding attitudes toward requesting accommodations, students in this study with visible disabilities appeared to have more positive attitudes toward requesting accommodations in the online learning environment compared with students with hidden disabilities such as psychological conditions. One participant posited a possible solution where the student's advisor could play a role in initiating discussions with instructors. Relationships take time and are more limited in an online setting; therefore the advisor is in a position of greater continuity. In higher education, there is a general consensus that quality advising supports student retention and the student experience. Consequently, there is room to further discuss this proposition around the graduate advisory model for students with a disability given the longevity of advisership through a thesis process which spans courses taught by many instructors.

For participants with visual impairments, one specific recommendation unique to this group was that instructors should respect the student's knowledge of what is needed; students' accommodation knowledge should be recognized, particularly given the low incidence rates of visual disability. The recommendations centered around self-accommodation. Interestingly, in an online environment, a visual impairment may manifest as a hidden disability if the appropriate, pro-active accommodations are in place (e.g., screen readers). However, online learning may instead exacerbate difficulties such as managing accessibility settings in learning management platforms, alternative document formats that do not interact well with accessibility tools, and the need for image descriptions for graphics. Disclosure can become increasingly imperative, yet simultaneously increasingly unclear in necessity.

Participants with ADHD provided one recommendation unique to this group, which was for DSS to provide ongoing support and guidance across the semester as needs changed

throughout a course. In fact, online courses have been found to be even more challenging for students with ADHD (Hughes, 2020). The lack of immediate structure and feedback often found in online classes can make it easier to put off work and may require new accommodation strategies to manage well. In a recent study Henning, Summerfeldt, and Parker (2022) brought awareness to the important role that inattention symptoms play in the academic success as well as implications for educational programming and the need to provide appropriate interventions and supports.

Scope

There were no specific disability areas where recommendations were predominately directed toward student, instructor or university, underlying the need for individuals in the learning triad to do their part and work well together. Each member assumes responsibility for positive learning outcomes and reducing barriers to digital inclusion, findings supported by Edwards, Poed, Al-Nawab, and Penna (2022) with guidance for stakeholders toward a collaborative and institution-wide approach (Lawrie et al., 2017). Ultimately, graduate students in this study accepted responsibility for initiating the accommodation process and requesting accommodations; they advised across all disability categories to proactively apply for services. Appropriate disclosure must consider the amount of disability-specific information that is shared, the likelihood of a more sudden need to arise, and the timing of the request, such as before the semester begins or when the disability has impacted an outcome.

Similarity of participant suggestions in this study continues to highlight the generality versus specificity dilemma in supporting learners (Kendall & Tarman, 2016) in all settings. Implementing recommendations that meet the needs of most learners with disabilities continues to serve as a viable solution, an option for which resources in good quality online course development rather than disability-specific accommodations may help to resolve. However, instead of a “one size fits all” approach to thinking about and accommodating disability in graduate education, it is strongly suggested that needs of graduate students with disabilities be evaluated and addressed on a case-by-case basis, a situation to which the student’s advisor may be distinctly placed to support. The advisor may bridge the gap of complex concerns and graduate-level expectations to apply general policies to an individualized strategy of support, potentially reshaping this position. As universities plan for a future that will no doubt have many challenges, the need for faculty to be proactively educated *about* and *for* disability and the role they play in supporting graduate students with disabilities is critical, a recommendation that requires additional research to support implementation.

Realizing recommendations

While there are category specific considerations to be made, recommendations from cross-category participants were more alike than dissimilar. Identifying recommendations more likely to address the concerns of a student with a variety of disabilities can bring efficiency to support. There was a recommendation for each stakeholder group of students, instructors, and the university which spanned the disability categories resulting in three overarching recommendations. First, students should proactively apply for services, share

documentation, and communicate needs directly with the instructor at semester start. Second, instructors should design online courses compatible with UDL that support self-accommodation by students with disclosed and undisclosed disabilities. Third, universities should provide a range of DSS services to students with a variety of disabilities both on-campus *and* online. Universities should engage in due diligence by reviewing and discussing the experiences of graduate students with disabilities, exploring implementable recommendations around continuous improvement.

Overall, recommendations for students centered on relationships and communication, both which address one of the leading issues in online learning, a lack of community (Thomas, Harris, & King-Berry, 2017). Student learning experiences are maximized when their connection to the instructor is deeper (Maki & Maki, 2007; Thomas, Hilton, & Igram, 2015), and their likelihood to disclose their disability also increases (Kranke, Jackson, Taylor, Anderson-Fye, & Floersch, 2013). As Rovai (2002) suggested, connectedness may deliver the support online students need to learn more and effectively complete courses. Instructors can explore a range of interactive online methodologies to facilitate interaction between students and instructors as well as address the quality, quantity, and patterns of communication. A noted strength of online learning is the multiple communication channels with varying levels of richness that instructors can leverage. Providing alternative ways for online students to express themselves, such as video feedback, discussion boards, pairing audio and written cues, and carefully navigated written interactions enhanced relationship-building (Cerniglia, 2011). While much of this communication is instructor led, students found it their responsibility to engage and participate. Effective instructor-student relationships are formed through quality interactions, no matter the modality or online tool used.

Participants in this study resoundingly noted that courses should be designed in a way that supports self-accommodation for a diverse group of learners with a unique set of learning needs. Findings from Dell, Dell, and Blackwell (2015) offer a starting point of pedagogical and practical considerations for applying UDL in the online environment; challenging faculty to continually adjust courses and evaluate conditions around online learning experiences and UDL. Although the online environment can accommodate a broad spectrum of learners, as participants in this study noted, disability interacts in a unique way for each learner in each varied circumstance. As such, course methods should be “discovered, deployed, and frequently revised to elicit learner learning” Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010

Participant recommendations are bolstered by practical frameworks to assist instructors in delivering quality online instruction. The *Quality Matters Rubric* (Quality Matters, 2014) and *Five Pillars of Quality Online Education* (Online Learning Consortium, 2017) provide general standards and specific expectations to guide course development, evaluation, and improvement. Thomas et al. (2017) offered another option for instructors, the E.N.H.A.N. C.E Learning Model, to streamline course design. The model includes seven areas to consider: (1) Engage students through active learning, (2) Navigate students through the course using a well-organized platform, (3) Highlight the most important information, (4) Assess students multiple times, (5) Network – provide students with opportunities to interact with the other students to build an online community, (6) Connect with students through instructor-learner communications, and (7) Edutain – use methods that both educate and entertain. Suggestions reiterate the importance of recommendations from

this study for instructors to provide frequent feedback, ask learners about their needs being met, and share with learners a variety of online resources for disability support.

Further consideration of how different UDL and online instructional elements work together for a variety of online learners is imperative. Thomas et al. (2017) referred to this as the *Online Learning Ecosystem Inclusive Design* (OLEID) which considers how electronic resources can be leveraged to promote inclusion of students with disabilities. In the OLEID design, instructors are encouraged to consider instructional elements such as blogs, social media, assessments, communication, visual media, devices and technology supports that function together to address learning needs. Working through issues of instructional inclusion and accessibility can serve to strengthen the online learning environment for all students, not just those with disabilities.

Effective instructional strategies are critical to the success of online students (Watson, Bishop, & Ferdinand-James, 2017), yet it is not yet general practice for instructors to receive training in course design and delivery, even when doing so could enhance instructional impact (Thomas et al., 2017). Simplicity in course design increases the likelihood of learning, and it is ultimately the instructor's responsibility to supply high quality experiences. Conceivably, investment in instructor professional learning for online course design, delivery, and accessibility is a way for universities to better support all online students with disabilities and encourage the use of UDL strategies. A change in faculty roles and institutional culture related to disability accommodation online may be necessary.

A call for universities

For the university, responsibility lies in policies and procedures for communication and accountability, as well as upholding the rights of students (Council for Exceptional Children (CEC), 2008); yet an added awareness to graduate students is needed. Participants in this study called for advocacy, more comprehensive online services, and institutional support of faculty members to make appropriate accommodations. In essence, strategies for systems change suggested for on campus students (Lynch & Gussel, 1996) need to be adapted to support the online graduate learner. Learners would benefit from training opportunities for disability disclosure, opportunities to share experiences with other students with disabilities, peer programs that pair graduate students with disabilities with students new to graduate studies or offering mentorship with a faculty or staff member with a disability (p. 355). Another suggestion is to create a widely accessible electronic database detailing alternative methods and supports that faculty, students, and staff have found effective to meet specific needs, as well as university personnel who have experience working with students with disabilities available as peer resources for their coworkers teaching online courses (Lynch & Gussel, 1996).

The swift transition to prolific online learning has continued to reveal deficiencies in the online university DSS sector and what needs to change (McKenzie, 2021; Watermeyer et al., 2021); thus, the timing is ideal to realize flexible accommodation policies as well as an accommodation and instructional design framework in graduate education, a call supported by previous research (National Educational Association of Disabled Students, 2016). As institutions draft and adjust policy and practice guidelines for online learning in a post-Covid era, the voice of graduate students is critical to include. Distinct aspects of the postgraduate experience (e.g., assessment processes for thesis or research assistance)

could also be examined. This could herald a change in the traditional role of the university regarding access. The emerging conversation addresses access to graduate education, instructor accountability, the role of the advisor, as well as persistence of online graduate students. Recommendations note the need for more to be done to meet online learner needs. This includes a call for DS to ensure equity of services for online students, provide information for instructors on types of disabilities, training on disability rights and accessibility in the online environment, provide professional learning opportunities and resources that can enhance the learning experiences regardless of disability classification, and provide faculty with a common (and accurate) notification statement on disability services to use in syllabi in a manner to encourage timely student disclosure.

Study Limitations

Although interviews are well situated for investigating individual's experiences, limitations exist. Efforts were made to address bias through bracketed discussions, yet researcher bias can remain. Furthermore, saturation of recommendations is limited due to purposeful sampling of graduate students with specific disability classifications. Participants were not representative of all graduate students with disabilities in their programs, in other graduate programs, or at the university, nor does this study allow for direct transfer of recommendations to other disciplinary contexts or to undergraduate students. Additionally, no graduate students with hearing or motor disabilities responded to recruitment efforts. Although findings may be limited in generalizability, practical suggestions represent the voice of graduate students with disabilities and could impact how instructors and universities encourage full participation in the online environment. The uniqueness of each students' experience must be recognized.

Conclusion

Participants across disability classifications believed in a shared responsibility for accommodation and to provide students with disabilities appropriate online learning supports. This view establishes a positive and collaborative approach to services in online graduate education instead of a focus on competing rights and responsibilities. There is a need for students to understand their disabilities and communicate specific needs. Consequently, instructors need to be open to understanding unique needs and how to respond accordingly within their role and capacity. The university needs to provide a supportive platform for communication and effective online teaching practices. Together, these tangible solutions can serve to equalize online learning environments, prevent impediment of learner progress, and ensure access to equitable online education through joint efforts.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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