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An Examination of College Students with Disabilities' Perceptions of Instruction During Remote Learning Due to the COVID-19 Pandemic

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Abstract

Due to COVID-19, most institutions of higher education delivered instruction remotely partway through the spring 2020 semester. This rapid shift resulted in many instructors changing course format with short notice. To understand how this shift impacted learner perceptions of remote instruction in spring 2020, we conducted a survey of 216 college students with self-identified disabilities. Postsecondary students with disabilities were queried about benefits of remote learning, feedback for instructors regarding remote learning, and instructional practices they believe should continue when face-to-face instruction resumes. Results indicated students benefitted from self-paced learning and improved access to materials during remote instruction. Student feedback suggests instructors incorporate course procedures that include flexibility and improved accessibility. When institutions return to typical course delivery, students suggested continuing the following online practices: maintaining class materials on the course learning management system and incorporation of web-based course delivery platforms. Recommendations for future research and practice are provided.

In March 2020, SARS CoV 2 (referred to in the remainder of the paper as COVID-19) overwhelmed the United States, rapidly forcing the majority of the population to shelter in place. Institutions, such as colleges and universities, shifted almost all delivery of education to web-based platforms (e.g., learning management systems [LMS], Zoom, Microsoft Teams). In fact, delivery of remote instruction, for many postsecondary institutions, continued into the subsequent academic year. Unsurprisingly, college students have reported significant challenges personally and academically due to

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the pandemic (Madaus et al., 2021). For example, students have noted income, housing, and food challenges, increased levels of stress, and academic difficulties including a lack of collaborative opportunities, inability to have course questions answered, and inconsistent access to the internet and necessary digital learning tools (Means & Neisler, 2020). There were a number of student populations that more often reported facing such challenges including first-generation students and those from lower socioeconomic backgrounds (Soria et al., 2020). Emerging literature suggests college students with disabilities have been disproportionately impacted by the COVID-19 pandemic as well (Lalor & Banerjee, 2020; Soria et al., 2020).

Legal Context

Legislation prohibits discrimination based upon disability and also requires the use of reasonable and appropriate accommodations. Section 504 of the Rehabilitation Act of 1973, amended in 1998, mandates colleges and universities make "reasonable accommodations" to enable students with disabilities to participate in educational programming (Walker et al., 2018). All entities receiving federal funding, which includes almost all colleges and universities, must be in compliance with Section 504 (Shaw & Dukes, 2013). In 1990, the Americans with Disabilities Act (ADA) was passed. Under Title III of the ADA, disability discrimination on the part of public accommodations and services, even when privately owned, is prohibited. Like Section 504, the original ADA and the subsequent ADA Amendments Act requires postsecondary institutions provide reasonable accommodations for qualified individuals (Keenan et al., 2018).

Moreover, under Title II of the ADA, "no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity" (Americans with Disabilities Act, 1990; 42 U.S.C. § 12132) and colleges and universities are included as part of this Title. Additionally, Title II of the ADA and its subsequent updates requires communications be equally effective for persons with or without disability (Americans with Disabilities Act, 1990). The Office of Civil Rights (OCR), a sub-agency of the United States Department of Education, has

interpreted the phrase "as effective as" to mean (1) the timeliness of delivery, (2) the accuracy of the translation, and (3) provision in a manner and medium appropriate to the significance of the message and the abilities of the individual with the disability (OCR, 2003). The Department of Justice (DOJ) has stated the ADA applies to online communication noting:

> Covered entities under the ADA are required to provide effective communication regardless of whether they generally communicate through print media, audio media, or computerized media such as the Internet. Covered entities that use the Internet for communications regarding their programs, goods, or services must be prepared to offer those communications through accessible means as well (Patrick, 1996, p. 1).

Litigation related to online learning in colleges and universities is not uncommon. For example, numerous institutions have faced lawsuits due to the inaccessibility of their online learning content (National Association of the Deaf, 2019). OCR noted shortly after the closure of schools and colleges due to COVID-19 that accommodations and other supports guaranteed under Section 504 must continue to be provided (OCR, 2020; Center for Learner Equity, 2020).

College Students with Disabilities

Online learning is frequently viewed as a means of expanding student enrollment (Dukes et al., 2009). Consequently, institutions of higher education are responding by making online course development and delivery a significant part of their long-term strategic planning. Additionally, the move to online learning has been regarded as a means of potentially improving access to education for students with disabilities (Fichten, et al., 2009). Not surprisingly, online course development is quickly becoming more instructionally sophisticated. Video, in particular, is becoming a staple in online instructional environments (Martin et al., 2020). In one study, the majority of students indicated online videos aided their learning of course content (Berg et al., 2014). Prior to the pandemic, some students with disabilities have reported benefits in online learning such as flexibility to complete assignments on their schedule, a reduction in disability stigma, and the use of universal design (UD) methods (Kotera et al., 2019). Moreover,

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students with disabilities have reported greater access to higher education as a function of online educational options (Valenzuela, 2020). However, as Betts et al. (2013) noted, "…increased access to higher education does not necessarily equate to increased accessibility in terms of course content, learning activities, and assessment" (p. 49).

UD is a framework to optimize learning by removing barriers and ensuring access to content for an array of students, including students with disabilities (Dukes et al., 2009). Specifically, UD is defined as a framework that promotes the design and delivery of inclusive instruction with the intent of reducing barriers to learning (Faggella-Luby et al., 2017). Originally regarded as a means of improving physical accessibility, the concept of UD is now being applied to academic instruction (Morris et al., 2016). For example, the principles of Universal Design for Instruction (UDI) (Scott et al., 2001), include equity, flexibility, perception and a community of learners (see Scott et al., 2001 for other principles). This can be translated into instructor focus on multiple means of representation, multiple means of action and expression, and providing multiple means of engagement with the goal of ensuring learners have various means by which they can acquire knowledge and demonstrate understanding (CAST, 2011). By offering clear and accessible design features in an online course, all learners can benefit from the design and content likely dramatically reducing or eliminating the need to rely upon accommodations to access the curriculum. However, Faggella-Luby and colleagues (2017) determined while there has been significant interest in UD in higher education, at that time, there were only 44 data-based publications on the use of UD relative to students with disabilities in postsecondary settings. As a result, the vast majority of college students with disabilities continue to rely upon accommodations to promote equal educational access as university policy and practice move toward potential implementation of UD practices.

Prior to the COVID-19 pandemic, a majority of college courses, and the accommodations students with disabilities used for them, were offered in-person (McFarland et al., 2018). The most common accommodations were applied to exams, including receiving extended time to complete them, and taking exams in a different setting.

Other typical accommodations included extended time for assignments, use of a reader, use of a calculator, note-takers, disability-related computer use (Gelbar & Madaus, 2020; Newman & Madaus, 2015; Sokal & Wilson, 2017), and the utilization of adaptive equipment and technology, such as, taped texts, recording devices, and adaptive computer equipment (Barber, 2012; OCR, 2007).

While data regarding the experiences of students with disabilities during the pandemic are scant at this time, emerging data suggest postsecondary institutions sometimes struggled to meet students' needs for accommodations and supports. In spring 2020, Anderson (2020) stated students with disabilities "… have been put on the backburner 'en masse' …" (para. 2). As it would turn out, a great opportunity was missed to embrace more inclusive pedagogies.

Though many instructors have had previous chances to learn about, design, and deliver digital course content, the onset of COVID-19 prompted an unremitting push to immediately provide all instruction to students remotely. However, as one example, in a regional sample of 127 U.S. universities, Meleo-Erwin and colleagues (2021) found that regardless of university size, few schools made disability/accessibility service information directly available on their websites for students with disabilities. Of the resources posted, most dealt with assisting students with remote instruction (Meleo-Erwin et al., 2021) though it is unclear how these supports impacted students with disabilities.

COVID-19 has likely served as a catalyst to accelerate institutional acceptance and use of UD practices that might otherwise have been adopted much more slowly. Yet, this opportunity appears to have been inconsistently embraced by postsecondary institutions and perhaps unintentionally negatively impacting college students with disabilities (Anderson, 2020). Fortunately, in some cases, students have reported a willingness of institutional faculty and staff to assist with educational access challenges. For example, one student said, "When I reached out and said I had a problem, everyone I spoke to has stepped up and helped me when I had an obstacle that I needed to overcome" (Roff, 2020, para. 25).

Examination of College Students with Disabilities *continued*

Study Purpose

The current study examines the open-ended remarks of self-identified students with disabilities shared from a larger mixed-methods study about their experiences transitioning to and learning in remote environments during the spring 2020 semester. Manifest content analysis (e.g., Kleinheksel et al., 2020; Krippendorff, 2012) was used to analyze participants' responses relative to specific questions outlined below regarding their experiences and recommendations for both remote learning and planned return to face-to-face learning.

Methods:

Participants

Participants were 216 self-identified college students with disabilities from two- and four-year schools in the United States. Female respondents represented 153 of the 216 (70.8%), with ADHD (*n*=84, 38.9%), mental health disabilities[1] (*n*=85, 39.4%), and learning disabilities (*n*=61, 28.2%), as the most reported disability. Notably, these disabilities are "hidden" and without documentation may go unobserved by professors. The majority of students were in bachelor's programs (*n*=147, 68.1%) and attended four-year public schools (*n*=120, 55.6%). Slightly more than 29% (*n*=63) of respondents reported attending a four-year private school and 15.3% (*n*=33) reported attending a two-year school. School size varied with 58.8% (*n*=127) of participants indicating their institution had over 10,000 students, while 40.7% (*n*=88) of participants indicated their institution had less than 10,000 students. The most frequent geographic area of institution was the New England region (CT, ME, MA, NH, RI, VT) with 47.2% of participants (*n*=102). Table 1 provides additional participant demographics.

Data Collection Instrument

The research team developed an electronic survey, the *Survey of College Students with Disabilities during COVID-19*, to measure college students with disabilities' perceptions of remote instruction during the spring 2020 semester. The survey items were based on an open-source question set, including the AHEAD Ireland survey (AHEAD, 2020, used with permission) and the EDUCAUSE DIY Survey KIT: Evaluating the 2020 Spring Semester (EDUCAUSE, 2020). The *Survey of College Students with Disabilities during COVID-19* contained questions requesting demographic information, remote class format (asynchronous, synchronous) and types of instructional methods utilized (e.g., video lectures, uploaded readings). Survey participants were asked to indicate via a Likert scale how supported they felt shifting to remote learning and about their remote instruction experiences. In addition, the survey included three open-ended questions, which provided an opportunity to expand upon their quantitative responses and included questions such as: (a) What benefits or advantages did remote learning offer?; (b) What would you like to share with your instructors regarding components of remote learning they could change in order to improve your remote learning experience?, and (c) Describe any teaching practices utilized in your remote courses that could improve your learning experiences in face-to-face classes. Participants reviewed an informed consent which explained the survey purpose, length, potential risks of participation, the anonymous and voluntary nature of their participation, and researcher contact information in the event of questions. They were offered the option to accept and continue, or to decline and opt out of the survey.

Procedures

Institutional Research Board Exempt Approval was received by researchers prior to beginning the investigation. The electronic survey link was provided to two accessibility services offices, one at a public and the other at a private institution, to the administrator of an email distribution list of a national postsecondary education and disability conference, and two moderators of national groups for college students with disabilities, asking each to share the survey with their respective students. Several recipients also requested and were granted permission to distribute the survey to additional postsecondary education and disability networks. Due to the experiential nature of the data in relation to the pandemic conditions created in the spring 2020 semester, all data collection occurred via the electronic survey platform to capture perceptions in a timely fashion.

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[1] *Mental health is a broad construct with many variables (see Soria & Horgos, 2021). However, due to the self-report nature of disability by survey participants, we embraced the larger term to be inclusive of individual difference. This is consistent with the use of Learning Disabilities, rather than dyscalculia, dyslexia or dysgraphia.*

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Table 1 Participant Characteristics

Demographic	n	%
Gender		
Male	42	19.4
Female	153	70.8
Nonbinary	13	6.0
Prefer not to say	5	2.3
Other	2	.9
Missing	1	.5
Disability Type1		
ADHD	84	38.9
ASD	30	13.9
Chronic Health	48	22.2
Deafness/Hard of Hearing	21	9.7
Mental Health	85	39.4
Intellectual disability	9	4.2
Learning disability	61	28.2
Mobility/Orthopedic disability	27	12.5
Speech/language impairment	8	3.7
Traumatic or acquired brain injury	17	7.9
Visual impairment (including blindness)	16	7.4
Other	28	13.0
School Type		
2-year private	1	0.5
2-year public	32	14.8
4-year private	63	29.2
4-year public	120	55.6
School Size		
<5000	42	19.4
5,001 to 10,000	47	21.8
10,001 to 20,000	58	26.9
>20,000	69	31.9
U.S. Region		
New England (CT, ME, MA, NH, RI, VT)	102	47.2
Middle Atlantic (NJ, NY, PA)	29	13.4
West South Central (AR, LA, OK, TX)	26	12.0
South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV)	24	11.1
East North Central (IN, IL, MI, OH, WI)	14	6.5
Other	21	9.7
Degrees Currently Pursuing		
Associate's Degree	30	13.9
Bachelor's Degree	147	68.1
Graduate Degree	25	11.6
Spring 2020 Graduate	11	5.1
Missing	3	1.4

Note. 1As participants could select more than one response, the sum of the disability categories will add up to more than 216.

As noted above, a total of 334 participants completed at least a portion of the larger survey. However, 216 participants, or 65%, responded to at least one of the study's relevant open-ended questions to be analyzed in this paper. There were between 41 and 88 missing responses per question with an average of 64 missing responses across the three open-ended questions. Thus, the results pertain to the study subsample of 216 participants. Blank fields and responses such as N/A were not included in the result totals presented. For more on the larger study sample, please see Madaus et al., 2021.

Data Analysis

As the first study to address the learning experiences of postsecondary students with disabilities during the COVID-19 pandemic, the researchers sought to "stay close to the text," and use participants' words to "describe the visible and obvious in the text" (Bengtsson, 2016, p. 10). Given that, manifest content analysis was used to analyze participant data (e.g,, Krippendorff, 2012). This method involves using frequency counts to "understand a phenomenon," and "assumes there is objective truth in the data that can be revealed with very little interpretation" (Kleinheksel et al., 2020, p. 128).

To conduct the manifest content analysis, four steps were applied: decontextualization, contextualization, categorization, and compilation. During decontextualization, the researchers read the text several times to "obtain a sense of the whole," and to answer the research questions, identified "the smallest

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unit that contains some of the insights the researcher needs" (Bengtsson, 2016, p. 11). The second step, recontextualization, involved rereading the data to ensure the coding schema reflected the content. Next, categorization was conducted by examining identified codes for each of the five questions and grouping similar codes into larger categories. The final stage, compilation, involved clarifying the positionality of the analysts in order to examine the data from a neutral perspective. An example of the process for data organization and analysis is illustrated in Figure 1.

Figure 1

Example Coding Tree: Benefits of Remote Learning
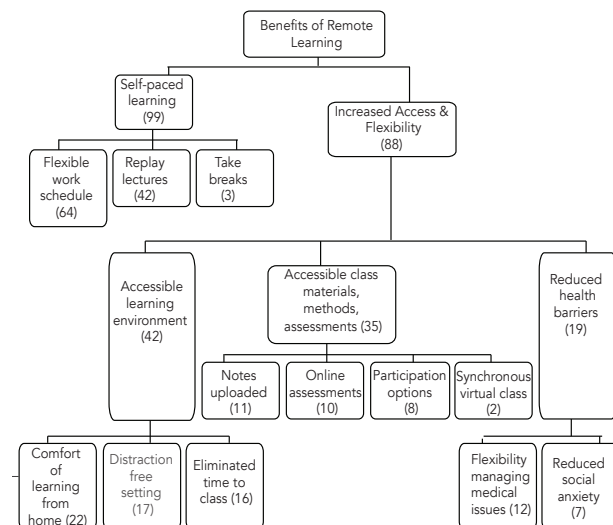
Credibility Measures

To establish trustworthiness in qualitative content analysis, the researchers followed the recommendations of Elo et al. (2014) in all aspects of planning, preparing, and analyzing the data, as well as when reporting the findings. The interpretive analysis was conducted by two researchers who had previous experience as postsecondary education disability services professionals and are currently involved in an undergraduate advocacy group for students with disabilities. The two researchers engaged in initial coding of qualitative data both identify as graduate students with disabilities and in accordance with qualitative methodology acknowledge their background and experiences may impact their practice (e.g., Elo et al., 2014). To ensure credibility and reliability of the findings, the researchers recognized these

positionalities and incorporated routine check-ins during the interpretive analysis process. Figure 2 illustrates the codes, categories, and themes in order to allow the reader to evaluate the trustworthiness of the results.

Figure 2

Example of Coding, Categorization, and Theme Development

Excerpt	Code	Categories	Theme
"I could do my work at any time of day, and I could go at my own pace rather than the pace of a whole class."	Work at any time of day	Work at own pace	
"The ability to work at my own pace, on my own time, was tremendously helpful. If I was struggling at a specific time, I could take that time off to take care of myself and then return to work when I was ready."	Work at own pace Could take time off	Time flexibility Work at own pace	Self-paced/ time flexibility
"I was able to pause asynchronous lecture videos and take my time with writing notes. I didn't feel rushed to get everything down like in face-to-face classes."	Take breaks Not feel rushed		

Examination of College Students with Disabilities *continued*

Results

Benefits of Remote Learning

Self-Paced Learning

Despite the challenging circumstances, students conveyed that remote learning offered several benefits. The most commonly reported benefit, which was noted by 100 students (46.3%), included being able to self-pace one's learning. Students benefited from the ability to work at any time of the day, take self-determined breaks, and pause and replay recorded lectures. One female student at a 4-year institution said,

> The ability to work at my own pace, on my own time, was tremendously helpful. If I was struggling at a specific time, I could take that time off to take care of myself and then return to work when I was ready. This was very helpful!

Another female student at a 4-year private school described the utility of recorded lectures. "I was able to pause asynchronous lecture videos and take my time with writing notes. I didn't feel rushed to get everything down like in face-to-face classes."

Increased Access and Flexibility

Eighty-one students identified ways remote learning increased access for them, including providing a more accessible learning environment, accessible class materials, methods of instruction and assessment, and reducing health barriers. Thirty-four students (15.7%) found remote learning environments more accessible, noting they were able to study and listen to lectures in distraction-free settings, felt more comfortable learning from home, and did not have to travel to participate in class. In fact, twenty-one students mentioned working from home eliminated travel time, which enabled them to dedicate more time to academic work. Students also stated class materials and methods, including uploaded notes, synchronous virtual classes, use of closed captioning or transcripts, participatory flexibility (e.g., breakout rooms, chat features, video on or off), and virtual office hours, were more accessible and available to everyone. Fourteen additional students noted remote assessments as being more accessible, as exams were often open-note/book, students could opt to complete them in a distraction free setting, and assessments generally shifted from those completed in person to performance-based tasks. Eleven students also communicated facing fewer health barriers, including less social anxiety and increased flexibility to manage medical issues.

Feedback to Instructors on Remote Teaching Practices

When asked to comment on ways instructors might improve remote-teaching practices, students described four categories of teaching strategies instructors could utilize: incorporating flexible options, building in accessibility, offering more support and communication, and ensuring accommodations are appropriate and in place. Approximately half of the respondents (*n*=154) indicated instructors needed to incorporate flexible options into remote classes. For example, students preferred flexible deadlines, transparent attendance policies, options to work in groups for activities, clear participation expectations, and multiple ways of expressing learning on assessments. Students said these alternatives were especially necessary during the spring 2020 semester due to the unexpected and abrupt shift to remote instruction. As an example, while most students described the benefits of remote learning, a small number did indicate working from home was more challenging, due to family or work responsibilities.

Second, fifty-nine individuals (27.3%) indicated an interest in having accessibility built into courses in advance. Suggestions included posting recorded lectures, captioning all videos, sharing class materials and assignments in advance of the course meeting in which they are used, giving consideration to voice clarity, volume, and tone in virtual lectures, repeating student questions, incorporating breaks into synchronous course sessions and applying consistency in meeting times and course procedures. A subset of students illustrated the value of improving accessibility during both synchronous and asynchronous learning. These students noted benefits such as allowing academic obligations to fit around professional and family schedules, learning in self-selected and distraction free spaces, as well as the significant reduction in health barriers (e.g., virus related, reduction of social anxiety) that may occur during face-to-face learning.

Examination of College Students with Disabilities *continued*

A third area of feedback, noted by 107 students (49.5%), indicated that instructors should provide more support and communication, and specifically more frequent and timely communication (e.g., through email or LMS postings). Students also reported a desire for more interaction. They drew a distinction between synchronous classes, which engaged learners and encouraged participation, and asynchronous classes, which they said resulted in specific learning challenges. Noted challenges included feelings of disconnection from peers and difficulty keeping up with class material. A female student at a 4-year public institution explained:

> For three out of four classes I was expected to teach myself with material posted on black board (sic) and then submit assignments and take exams by a date on the syllabus. As someone with ADHD, it's already hard to sustain my attention during an in-class lecture, let alone sustaining attention to give myself the entire lecture alone in my bedroom.

Finally, more than 100 students commented on the appropriateness and quality of accommodations during remote learning. Most comments dealt with institutional disability service office communication and approval processes. For example, one female student at a 4-year large public university summarized, it was faculty that in many cases were on the front lines of accommodation service delivery:

> [Disability services] sent an email that due to everything being online they basically can't help anyone with getting accessibility online and that it all relies on the professor. I was hoping they would say that they made an announcement to the professor to keep accessibility in mind and make sure to keep what is possible of the current accommodations and be prepared to handle new accommodations that may come up.

In fact, in some cases it was noted the professor was the main point of contact, reaching out to discuss accommodations during remote learning. As one student at a 4-year public university noted:

> I was a little unsure of how my accommodations would translate to online learning, but most of my professors reached out to me (and I assume other

students with accommodations) to discuss how the accommodations would take place during online learning, so [disability services] wasn't officially involved in the change for me.

In a parallel example, a non-binary student at a four-year public school noted worries about whether accommodations would be automatically transitioned during remote learning but was able to work directly with the professors to secure desired accommodations.

Yet across the study data corpus, it was clear proactive communication regarding accommodations was not universally experienced. Many students were frustrated with an inability to secure accommodations for remote learning that they believe impacted their overall learning experience. For example, a different non-binary student at a 4-year public university noted a perceived lack of appropriate accommodations, "I got poor grades because of this and I had to convert almost all of my classes to pass/fail."

In particular, students voiced concern over how testing accommodations were perceived by faculty. In some cases, students did not receive additional testing time during remote learning or felt singled out regarding concerns of cheating because of accommodations, while for others distraction-free testing environments were difficult to replicate away from campus.

Feedback to Institution on Instruction

Thirty-seven students indicated a desire for their institution to better prepare instructors to teach remotely. They suggested instruction would have been improved if instructors all received similar technology training and organized courses in a consistent manner. As one female student from a 4-year institution described:

> They could have given classes to all the professors on how to use Blackboard, use screen capture, how to record video and voice, how and where to upload videos, how and where to upload notes … Each professor of mine was using different software and places to put out their information for classes and it made it very hard to keep up with everything and find what needed to be done.

Examination of College Students with Disabilities *continued*

Remote Learning Teaching Practices to Continue in Face-to-Face Instruction

Utilizing web-based LMSs and specifically, uploading class materials were two practices students thought would improve the face-to-face course experience. Forty-nine students (22.7%) stated making class materials available on an LMS allowed them additional opportunities to prepare and review. Recording and uploading lectures, and pre-posting class materials, such as assignments, were the two most common suggestions. Additionally, 36 students (16.7%) mentioned using a course LMS more regularly to supplement face-to-face instruction. Specific recommendations included using LMS platforms for office hours, participation options for class discussions, and for students to ask questions. A final theme in the qualitative data was that professors might be proactive by regularly communicating with students to ensure individual accommodations are sufficiently supporting student learning as assignments and means of instructional delivery vary during the semester.

Discussion

The current study sought to capture and explore open-ended feedback from a sample of more than 300 postsecondary students with disabilities engaged in remote learning because of the COVID-19 pandemic during spring 2020. The study sample drew from predominantly high-incidence disabilities such as ADHD, mental health disabilities, and specific learning disabilities, which is consistent with the general population of college students with disabilities (Madaus et al., 2021). Moreover, this population is comprised of so called "hidden" disabilities, meaning without appropriate related documentation, these students may blend into the learning environment without professors noting particular needs or strengths beyond those of typical students. Therefore, it is critical these students be given voice to provide insight and suggestions to guide future remote learning.

Suggested Remote-Teaching Practices

While Meleo-Erwin and colleagues (2021) note that instructional assistance was the most common resource posted on institutional websites, findings from this study provide further insight. This study supports the conclusions from Anderson (2020) suggesting that improvements are warranted regarding remote-teaching practices from the perspective of students with disabilities across institutions.

Incorporate Flexible Options

By far the most common suggestions made by study participants related to expanding options for flexibility given the uncertainty created by the pandemic. Specifically, the suggestions were predominantly related to assessment or some aspect of course grading (e.g., flexible deadlines for assignments, credit for participation, opportunities to work together in groups, and alternate forms of assessment). This was consistent with the larger study in which nearly one-third of the sample converted a course to pass/fail (Madaus et al., 2021). While the data indicating a move to pass/fail are only descriptive and we cannot be sure why each student made this decision, it appears students may have been concerned about their ability to meaningfully demonstrate mastery of course content through existing assessment and engagement practices. Thus, the desire for flexible deadlines, for example, underscores the variability in how the pandemic, in general, and remote learning in particular, impacted individual students.

Build in Accessibility

Almost 28% of the study sample (59/216) suggested additional accessibility would benefit their learning. Recommendations included two types of practices. First, students indicated a preference for accessibility prior to and immediately following class (e.g., uploading recorded lectures, captioning videos, posting class materials). Such recommendations are more than reasonable and might be considered standard practice in typical remote learning conditions. It is possible that delays were common or certain components of minimum accessibility were missed given the overwhelming task for professors to develop or source appropriate video in addition to posting ancillary materials. The second set of recommendations appear to highlight practices during lessons (most commonly synchronously). Specifically, students noted limitations such as not clearly hearing speakers during virtual lectures, a failure to restate inaudible student prompts when answering questions, a lack of reasonably timed breaks, and inconsistent scheduling. It is important to point out that some web-

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based platforms (e.g., Zoom, Microsoft Teams) now have closed captioning features built into their toolkits and could be incorporated seamlessly into course delivery. It is also noteworthy that the suggested improvements would likely benefit all students, not just students with disabilities.

Offer More Support During Self-Paced Learning

More than a third of the sample desired additional support though responses appeared to break down along instructional medium. In particular, students found synchronous instruction to be more engaging and encouraged participation while asynchronous learning left students feeling disconnected. Moreover, asynchronous experiences led to difficulties for many students meeting course deadline expectations. However, study results also revealed ways in which remote learning may benefit students with disabilities in particular. Participants emphasized that remote learning allowed learning at their own pace, which resulted in students who require additional time for learning (or who may need to take breaks) being able to do so without accommodation. The reduced need for travel also gave students more time to concentrate on coursework. Additionally, some students found remote courses were more manageable as they were able to review recorded lectures and take exams at whatever time best met their needs. Consequently, future instruction might leverage these beneficial components throughout the design and delivery of courses.

Increase Levels of Communication

Again, almost one-third of the study sample indicated a desire for improved communication. Students said communication was too inconsistent, desiring instead a more personal approach with frequent interaction, especially relative to course assignment or assessment deadlines. Several students noted the convenience of virtual office hours for personal meetings with the instructor.

Ensure Appropriate Accommodations are in Place

Regardless of the instructional modality, students with disabilities have a right to appropriate accommodations. For some students, it was clear accommodations approved prior to the pandemic required changes. Of note is that many students commented on the increasing trend of relying on faculty to receive accommodations, rather than coordinating with disability services staff. While it is helpful for faculty to check in with students during the course of the semester regarding the effectiveness of accommodations, especially if changes in modality occur, it is likely not in the best interest of postsecondary institution compliance for accommodations to be provided without disability service staff involvement.

Enhance Instructor Preparation

Students experience a variety of instructional practices each semester, and data in this study confirm it is faculty who serve as the regular point of contact for service delivery and often ensure appropriate accommodations are in place. Yet if individual professors are reaching out, rather than trained institutional disability service staff, there is no assurance of institutional systemic compliance with federal laws. For example, some students noted access to accommodations was not clearly understood or applied during learning. Moreover, some faculty even singled out students with disabilities during exams online, publicly challenging institutionally approved accommodations. Universities risk litigation when protected classes of students are publicly singled out for traits such as having a disability. Moreover, the risk of alienation and pathologizing of students with disabilities may impact attrition and university reputation.

Finally, student perceptions were clear that their institutions did not offer adequate training for instructors to prepare faculty to teach remotely. In fact, no students indicated their institutions well prepared faculty for remote learning. While high quality remote instruction was not likely to occur given the initial rapid transition during the COVID-19 forced implementation, student voice herein has captured just how varied and at times poor their experiences were. Comments from more than 10% of the sample noted instructional inconsistencies significant enough to suggest faculty need "technology training" and consistent, perhaps campus-wide,

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organization of course materials. Specific student suggestions bely the inconsistent nature of professors' utilization of LMSs, appropriate digital tools, and facility with e-communication and organization.

Practices to Continue

Students also noted many of these suggestions need not be reserved for remote teaching only. Rather, faculty that make class materials available online, record and upload lectures (even when initially taught face-to-face) and maximize the utility of the LMS would improve learning for students whether it is hybrid, synchronous, asynchronous, or face-to-face. Specifically, students suggested instructors should always upload class materials, including notes and recordings of lectures, both of which allow for extra review. Further, it was desired that LMSs continue to be used by faculty along with web-based video communication tools (e.g., Zoom, Microsoft Teams), online office hours, and options to attend face-to-face class virtually. Remote participation activities were believed to have a place in the face-to-face classroom. For example, incorporating virtual participation tools, such as through discussion boards or anonymous class polls, and holding virtual office hours were highlighted by students. By blending these practices throughout typical course preparation and delivery, professors may be able to maximize the engagement of all students.

Limitations

Limitations to this study relate to sample size and generalizability, as with all qualitative studies. Additionally, a majority of participants identified as female, attended four-year institutions in the Northeast or Mid-Atlantic regions, and reported ADHD, mental health disabilities, and learning disabilities, thus potentially limiting generalizability to students with different characteristics. While the study sample may not reflect national norms which are difficult to confirm (e.g., Leake, 2015) the current data presents perspectives of an underrepresented group (i.e., students with disabilities) during the pandemic necessitating timeliness over generalizability in data collection. Table 1 attempts to clarify this study population, as it was impossible to clarify the percentage of students with disabilities relative to the entire population. Students also self-reported disability, and therefore, this information was not externally confirmed.

Implications & Future Research

The rapid shift with short notice required triage response that stressed human and system capacity. Our challenge looking forward is that the pandemic has likely ushered in a new normal in education, meaning wider use of digital delivery is likely here to stay. We need to ensure both current institutional faculty and future faculty-in-training are prepared to deliver effective remote instruction for all students consistent with the rigors and outcomes typically demanded from each discipline.

On the positive side, a function of the rapid shift to fully remote course delivery were several adaptations perceived to improve student learning. When widely adopted, such practices may have the added benefit of reducing the burden on students with disabilities to request specific accommodations, thus avoiding stigma caused by association with separate testing times and locations, in-class supports (e.g., always having to sit in the front row of class), or alternate assignment specifications. Moreover, these modifications also benefit other students participating in courses (Morris et al., 2016). Consequently, as instruction returns to primarily face-to-face, it is highly advisable these changes remain in place.

A second adaptation was the need for modifications regarding how institutional disability service's providers partner and share information with instructors spelling out course accessibility practices, especially during remote learning. The electronic process, rather than manual request for signatures, along with virtual meetings for students with disabilities and institutional disability service staff, increased convenience and accessibility of supports according to learners and therefore should be continued.

Quantitative data indicated, and open-ended data confirm, students felt supported by faculty during the rapid shift to remote learning in the 2020 spring semester. Given their proximity to students, and the desire to improve student perception and experience of campus connectivity, instructors should be supported by institutional capacity and resources to continue to provide frequent and meaningful interactions with students. Further, it is advisable for postsecondary institutions to offer students preparation for remote learning that includes suggestions regarding how to flourish during asynchronous learning such as self-

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regulation and cognitive strategies. Similarly, it may be helpful for faculty to note particular learning strategies within their discipline for successful individualized remote learning.

Future research should continue to examine the effects of remote learning on college students with disabilities. While this study captured student experiences during the spring 2020 semester, additional studies should explore how students experienced continued remote learning, for instance, in the fall 2020 and spring 2021 semesters.

Additionally, while the spring 2020 semester forced instructors to rapidly shift to remote instruction, most continued utilizing remote methods in the immediately subsequent semesters. There is a need to explore how design and delivery may have evolved, as instructors adapted to this form of teaching and had more time to prepare. There is also a need to learn how these changes affected students with disabilities. Research may also explore what, if any, practices instructors plan to continue using when face-to-face courses resume.

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