

Experiences of Students with Disabilities During the COVID-19 Interruption of In-Person Instruction

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Abstract

The COVID-19 pandemic resulted in nearly every postsecondary institution in the United States rapidly shifting to remote learning during the spring 2020 semester. This study presents the results of a survey of a national sample of college students with disabilities, the first such study specific to students with disabilities beyond a single institution. Students reported feeling supported by their institutions, faculty, and disability services offices, while also noting shifts in accommodation needs, as well as personal, health, and financial concerns. Implications and future research needs are presented.

Keywords: *COVID-19; college students with disabilities; remote instruction*

According to the *College Crisis Initiative* (C2i), 96.3% of institutions nationwide transitioned to online learning in spring 2020 due to the COVID-19 pandemic (C2i, 2020). While some colleges previously moved to online instruction due to natural disasters (e.g., Hurricane Katrina) these were regional responses; the national response to the pandemic by higher education institutions was unique (Johnson et al., 2020). Moreover, this was a rapid shift; Forseman (2020) reported that nearly 300 institutions shifted to online learning in a one-week period in early March 2020, and two weeks later, Hess (2020) reported that the number was over 1,100.

The most recent data from the National Center for Education Statistics (NCES; 2020), indicate there were more than 26 million students enrolled in postsecondary institutions in 2018-2019. Given that only 2.4% of all institutions nationally are primarily online (NCES, 2019), the impact of the online learning shift was enormous and unprecedented (Cohen et al., 2020). Johnson et al. (2020) noted that even a very conservative estimate was that over 10 million students were impacted, while a CNBC article by Hess (2020) put this number at over 14 million.

Studies of Student Experiences in General

Johnson et al. (2020) stated that as of summer

2020, most examinations of the COVID-19 impact on higher education in general are in “the gray literature” (p. 8). Indeed, emerging, but as yet not peer-reviewed studies based on surveys of college students confirm the shift impacted students in multiple, and varied ways. Cohen et al. (2020) conducted a national survey of college students regarding their COVID-19 experiences, recruiting students from Instagram. A total of 725 full-time college students between the ages of 18-22 completed the survey, and they represented all 50 states and were evenly distributed among year in college. Thirty-five percent of the respondents reported experiencing COVID-19 like symptoms, and while 62% were employed in February 2020, only 32% were employed in late April 2020. Students who received financial aid reported higher levels of concern about the economic and emotional impact of COVID-19 than those not receiving such aid. Unsurprisingly, the authors noted that due to the stress reported by so many participants “it will be essential to monitor the mental health sequelae of COVID-19” (p. 6).

The California Student Aid Commission (2020) obtained similar results from a sample of 76,000 high school seniors and college students in California. Ninety percent of the college students reported concern about shifting to online learning, 71% indicated losing some or all of their income, and 46% reported

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a change in their living conditions. The report noted that “across the board, students reported dramatically higher levels of stress and concern over key economic and well-being measures in all areas as a result of COVID-19” (p. 6).

Other non-peer reviewed studies also confirm these findings. A study of first-generation students indicated these students experienced more difficulty with the transition to online learning than their peers, including issues with finding adequate study space, lack of technology, and attendance at scheduled virtual class times (Soria et al., 2020). Likewise, studies by Aucejo et al. (2020) and Zhang et al. (2020) reported student job and income loss and related economic concerns, increased isolation, reduced study time, the need to drop classes and delay graduation, and concerns about emotional and physical health.

Student Academic Experiences

Focusing on the academic experiences of college students, Veletsianos and Kimmons (2020) extracted data from “thousands of Twitter posts” (np) that included the phrase “my professor.” The results indicated students appreciated faculty who communicated with them, who provided encouragement and support, were empathetic, flexible, and set reasonable expectations. The students wanted faculty to understand they had challenges other than coursework that might impact their ability to do what was expected for class. These were sometimes relative to matters of great personal significance, such as potential eviction from a residence. Students also commented faculty should be comfortable with technology before using it, and likewise, understand not all students are tech savvy, nor have appropriate internet service necessary to meet the expectations of fully online learning.

Means and Neisler (2020) surveyed over 1,000 college students enrolled in courses that shifted to online learning in the spring 2020 semester. Sixty-seven percent of the students reported their classes were moved to synchronous instruction, with 65% reporting recorded lectures and 64% describing the use of frequent quizzes / assessments. While 51% noted they were very satisfied with their courses prior to the online shift, only 19% were very satisfied with the online classes. The smaller the face-to-face class, the higher the student satisfaction, with 65% of respondents in classes smaller than 35 students being somewhat or very satisfied, in comparison to 48% for respondents in classes larger than 76 students. Students specifically noted opportunities to collaborate with peers, not being able to ask questions live, motivation and maintaining interest in the course, and feeling included as a member of the class all were

negatively impacted. Internet connectivity was an issue, at least occasionally, for 44% of the students, and often or very often for 16%. Moreover, 23% reported issues with technology that impacted their ability to attend or participate in classes. These issues were also more commonly reported by students from low-income households and Hispanic respondents.

Experiences of Students with Disabilities

Given that students with disabilities make up 19.4% of all undergraduates (NCES, 2018), they were also likely significantly impacted by the issues described earlier, however, there have been no peer-reviewed studies to-date about this population. Zhang et al. (2020) reported the results of a study of 152 college students at one university in the northwest, 119 of whom had disabilities. The students were part of an ongoing multi-year study, and when it became clear instruction at the university would go online, questions were posed to them regarding their experiences related to education and COVID-19. Students with disabilities in the sample reported higher levels of worry regarding matters such as receiving lower courses grades, inability to meet academic requirements in an online course and having admission to a major negatively impacted. The students with disabilities also reported signs of distress, including insomnia, isolation, and difficulty concentrating, and notably, these levels were higher in spring 2020 than they had been in the prior two years of data collection.

Kunkes (2020) reported the results of a survey completed by 119 students with disabilities at a university in the mid-Atlantic region of the United States. Forty one percent of the students reported their accommodation needs changed in the online environment, with three main concerns noted: a need for increased time on exams due to distractions at home, need for greater flexibility with assignments because of difficulty managing workloads, and the need for more asynchronous learning due to extended periods of computer use. Although most students (78%) reported being able to work with instructors to have their disability-related needs met, concerns were noted about unresponsive instructors, those not providing accommodations or not allowing sufficient time for test accommodations. Of note, 50% of respondents reported benefits to learning online, including being in a reduced distraction environment, having increased flexibility related to course access, and reduced stress levels.

AHEAD (2020), a non-profit group in Ireland (not the Association on Higher Education and Disability in the United States), surveyed 601 students with disabilities in Ireland regarding their experiences

with COVID-19 related online instruction. More than half (52%) of the respondents disagreed or strongly disagreed with the statement "I am coping well with learning from home," a response that was more likely from students with mental health conditions, attention deficit/hyperactivity disorder, or a specific learning disability. Forty-six percent agreed or strongly agreed that their instructors considered accessibility with respect to online materials. Respondents noted challenges with a lack of structure to their day, motivation, distractions and demands in the home environment, lack of clarity related to coursework and assessments, and issues with internet access.

Rationale for the Present Study

Despite the shift to online learning, the accessibility needs of college students with disabilities must still be met by postsecondary institutions, as highlighted in a document from the United States Office for Civil Rights (OCR) titled *Questions and Answers for Postsecondary Institutions Regarding the COVID-19 National Emergency* (2020). OCR stated students with disabilities must continue to receive academic adjustments and auxiliary aids, regardless of whether the institution is serving students online or face-to-face. To what extent this happened, and the extent to which it occurred in a manner that met the needs of students with disabilities, has yet to be explored.

Although a limited number of published reports have examined the experiences of students with disabilities, these have been with small samples at single institutions, or conducted overseas. There is a pressing need to examine the COVID-19 instruction interruption experiences of a larger sample of students with disabilities and to identify the challenges experienced by students in order to improve the delivery of services and instruction. Moreover, it is also important to consider what components of the shift to online learning went well and can be of benefit and potentially utilized in the future.

Methods

The purpose of this study was to capture the experiences of students with disabilities in higher education during the shift to remote learning during the spring 2020 semester. An electronic survey was developed and administered nationally to postsecondary students with disabilities in both two- and four-year (public or private) degree programs. The survey instrument, study design, and procedures are outlined below.

Survey Instrument

An electronic survey (*Survey of College Students with Disabilities during COVID-19*; available from the first author upon request) was deployed in Qualtrics, an online survey platform, to measure the perceptions of college students with disabilities about their experiences with instruction during the shift to online learning in the spring 2020 semester. The survey was initially based on selected items from the AHEAD Ireland survey (used with permission) and the EDUCAUSE DIY Survey Kit: Evaluating the 2020 Spring Semester (EDUCAUSE, 2020), which is an open-source question set available on the EDUCASE website. Selected questions were refined and additional new questions were developed, including demographic items.

The survey began with seven demographic questions. The first three questions asked participants to indicate the type, size, and region of the higher education institution they attend. Four additional demographic questions addressed gender; degree type being pursued (e.g., Associates, Bachelors); disability types; and accommodations provided. Next, participants were asked two multiple-choice questions regarding course format following the COVID-19 closure (e.g., asynchronous) and instructional methods employed (e.g., video lectures, readings uploaded to a learning management system [LMS]). The remaining 39 questions included 31 Likert scale items and 8 open-ended short answer questions. Seven of the Likert scale items required a Yes/No response while the remaining 24 used a six-point Strongly Disagree to Strongly Agree scale.

Survey Procedures and Data Collection

Institutional Research Board exempt approval was received at the institution of the lead authors. Next, a link to the survey was distributed to (a) the disability services office of two institutions (one public and one private), (b) the email distribution list of a major annual conference on postsecondary education and disability, and (c) to the moderators of two national groups specific to college students with disabilities. All recipients of the email were asked to distribute the link to their respective students. In addition, some recipients requested and were granted permission to forward the survey request email to other networks and listservs related to postsecondary education and disability. Prior to survey completion, potential participants were provided a study purpose and description and were subsequently asked to indicate if they wished to participate. Responding affirmatively on the survey was considered consent for participation. Data collection began in early August and concluded in late September 2020.

Each recruitment source had a unique data collection link so the number of participants from each could be calculated. Respondent data was uploaded to SPSS and combined into one database with an additional variable indicating the recruitment source of the participants. For several items, participants could select multiple options (i.e., disability, accommodations, instructional format, and instructional method). Each choice for these items was a binary variable indicating whether participants had selected it or not and a variable calculating the total number of items chosen was also determined. Variables specifying the total number of demographic and Likert items that were missing in participants' responses as well as the total number of missing items for all participants were calculated as well. Given the exploratory nature of the study, descriptive statistics were calculated for each variable and basic inferential statistics (i.e., *t*-tests) were calculated for the Likert scale items.

Results

A total of 625 individuals clicked the survey link and 15 either clicked "No" when asked to participate or did not answer the consent question. Three individuals completed only the demographic questions and 273 did not answer any items after clicking on the consent question. The remaining 334 completed a sufficient number of items to be included in the final analyses. Of these, 295 participants answered all questions and 22 left only one question unanswered. All remaining participants had no more than 9 missing items and most responses were missing from the Likert scale questions.

Participant Demographics

As indicated in Table 1, the final sample was predominantly Female ($n=236$, 70.7%), indicated having two or more disabilities ($n=168$, 50.3%), and were pursuing Bachelor's degrees ($n=237$, 71%). ADHD ($n=134$, 40.1%), mental health challenges ($n=125$, 37.4%) and learning disabilities ($n=92$, 27.5%) were the most commonly reported disability categories. Fifty-two participants (15.6%) indicated they were attending a two-year college and 50 of these participants reported their two-year school was public. Over half of the sample indicated they attended a four-year public college ($n=174$, 52.1%) while approximately one third of the sample reported attending a four-year private college ($n=108$, 32.3%). Institution size varied with slightly more than half of respondents reporting a student body larger than 10,000 ($n=180$, 53.9%) and 149 indicated a campus population of fewer than 10,000 (44.6%). Five individuals did not answer

this question. Almost 60% of the sample indicated they attended an institution in the New England or Mid-Atlantic regions (NJ, NY, or PA; $n=195$, 58.4%).

Pre-COVID-19 Accommodations

As indicated in Table 2, the number and types of pre-COVID-19 accommodations varied across the sample. Almost three quarters ($n=237$, 74.3%) of the sample had five or fewer accommodations. Extended time for assessments and projects and completing assessments in distraction-free environments were the three most commonly reported accommodations.

Spring 2020 Instructional Context

As noted in Table 3, students reported receiving a variety of types and formats of remote instruction during the COVID-19 campus closure. Instructors predominantly were reported to provide instruction by uploading materials to an LMS ($n=296$, 88.6%), emailing updates/changes ($n=286$, 85.6%), and creating video lectures / classes ($n=276$, 82.6%). Approximately one third of the sample ($n=113$, 33.8%) indicated they had at least one course that utilized each format: synchronous, asynchronous, and both. Over two-thirds of the sample had at least one synchronous course ($n=231$, 69.2%) and at least one asynchronous course ($n=239$, 71.6%). Over half the participants had a course that utilized both synchronous and asynchronous delivery ($n=169$, 50.6%).

The participants' answers to the seven Yes / No items, as depicted in Table 4, indicated the majority had access to personal computers ($n=314$, 94%) and reliable internet access ($n=291$, 87.9%). Almost 40% indicated they had medical concerns that would result in COVID-19 impacting their ability to return to face-to-face learning ($n=130$, 39.5%). Almost one-third of respondents converted at least one course to pass / fail during the Spring 2019 semester ($n=108$, 32.8%) and reported having COVID-19 related financial concerns ($n=103$, 31.1%). Forty-five percent found they no longer needed certain accommodations ($n=149$) while approximately 60% reported needing new / different accommodations in the remote environment ($n=191$, 58.1%).

Student Perceptions of Spring 2020 Experiences

Participants answered 24 items on a six-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (6), as noted in Table 5. They reported not feeling connected to other students during remote instruction (mean=2.4) or instructors (mean=3.1). On average, participants also reported not being motivated in the remote environment (mean=2.7) and were neutral about whether was easier to take notes online

(mean =3.1) or manage time (mean=3.1). Participants indicated changing their notetaking method in the remote environment (mean=4.3). They also reported their learning was more impacted by family / personal demands during remote instruction versus prior learning experiences (mean=4.4). Participants reported the LMS was accessible (mean=4.6) and were neutral about instructors' communication regarding changes (mean=4.2), assessment (mean=4.21), and how to access materials (mean=4.2). Variation in responses to the Likert scale items by gender, number of disabilities (i.e., one v. more than one), institution type (i.e., 2-year, 4-year public, and 4-year private), and institution size (i.e., less than 10,000 students v. more than 10,000 students) were explored via t-tests. The significance level was adjusted based on the Bonferroni correction ($n=144$ comparisons) to control for experiment-wise error and no statistically significant differences were observed.

Discussion

Rapid transition to remote learning as a result of COVID-19 in spring 2020 semester caught many colleges and universities flatfooted. The magnitude of the immediate academic transformation expected of postsecondary education institutions was clearly unprecedented and very clearly impacted students with disabilities. The effort to provide services to students with disabilities was poignantly captured by Behling (2020), the director of a disability services office, who described working to ensure students would have Wi-Fi and technology access, that the needs of students with chronic health disorders would be met, and that faculty would have support to make online instruction accessible – all within the span of a few days. As students settled into online learning, Behling described, new, non-disability related challenges that arose, such as students caring for parents and siblings, time-zone differences, technologies banned in foreign countries, and issues with motivation and headaches due to increased screen time.

Even with these unprecedented challenges, overall the results indicated students felt somewhat supported or better by their institution (mean=3.5), disability services office (mean=3.8), and faculty (mean=4.0). Although these are mean ratings, and thus reflect students who reported both more and less positive experiences, the overall ratings in a time of a rapid pivot to fully remote services reflect significant effort by both disability services staff and faculty. While analysis of the t-test results did not reveal significant differences among student responses to the Likert scale items, there was a trend towards students

from larger institutions (more than 10,000 students) and students with multiple disabilities expressing less disability related support from their institution and more likely to indicate issues with the transition to remote learning. Again, differences were not statistically significant because of the large number of tests run and the resulting Bonferroni adjustment; however, data trends point to an area that might be examined in future research.

Importantly, the current investigation also captures data on specific accommodations from one moment in time, specific to the impact of spring 2020 and the COVID-19 academic interruption. As a historical moment, future researchers will have a clear benchmark for understanding student accommodations in the early 2020s. Regarding the particular findings, more than two of every three participants (70.6%) reported receiving at least five accommodations. By far the two most common categories of accommodation were in the areas of testing and time. More specifically, almost 79% of students received extended time for assessment and more than two-thirds a distraction free or reduced distraction testing environment. This result indicates how prevalent testing accommodations are for students with the most common disabilities. Given the distinct possibility that remote learning will play a much more prominent role in colleges, it certainly highlights the need to explore how to effectively deploy and complete assessments with fidelity from a distance.

The next four most common accommodations dealt with classroom learning experiences which included recording classes / lectures (38.7%), having a notetaker or copies of notes (37.4%), use of assistive technology (AT; 25.8%), and preferential seating (24.2%). Obviously, these accommodations would be directly impacted by, and potentially mitigated, during remote learning. In fact, 57.9% of students reported they needed different accommodations during remote learning. Of note, not all changes were negative. The use of videos, Zoom calls, and other LMS accessibility features may explain why 46.6% of students reported no longer needing certain accommodations. For example, videos of asynchronous lessons (as well as video records of synchronous sessions) would negate a reason for an audio recording, preferential seating, and potentially a notetaker. The transition to remote learning resulted in many students with disabilities having their prior accommodations rendered in need of change.

Just as accommodations were captured during this specific historical moment, so too were a myriad of unprecedented shifts in learning experiences. By a significant margin the three most common mech-

anisms for instructional delivery were (a) uploading of materials to a college LMS (93%), (b) email communication regarding updates and changes to the course (90.1%), and (c) use of video lectures or classes (85.4%). Moreover, course formats fell into a split pattern with approximately three-fourths of students having at least one course delivered synchronously (72.2%) and one course delivered asynchronously (75.8%). Only 52% of participants reported that instructors varied the two types of delivery. Given the high likelihood COVID-19 becomes endemic, it behooves the field to consider whether a hyflex model (i.e., students freely shifting between face-to-face and online participation in the same course during a semester) of course delivery should be anticipated and thus developed going forward.

Remarkably, the vast majority of students in the current study were able to access the digital resources and LMS with 94.3% reporting uninterrupted access to a computer and 88.5% reporting reliable internet access. While this runs contrary to some findings presented earlier related to the student body in general and may speak to the relative privilege of the study sample, it raises questions for future research about how students without full-time access to a computer and / or unreliable internet access managed during remote learning.

Regarding the overall instructional realities faced by students, most reported that the platforms used were accessible (mean=4.6), a fortunate indication that universities are utilizing appropriate platforms. However, students were split as nearly equal numbers agreed and disagreed regarding the accessibility of the learning materials (mean=3.8), the guidance provided regarding how to use new technologies (mean=4.0), and overall support during the transition to remote learning (mean=4.0). However, when considered on a six-point scale, and the wide range in standard deviation for certain queries, it is also likely that variability in student data reflects inconsistency in student experiences in the transition to remote learning. Responses to the students' open-ended responses are being currently analyzed and may shed more light into this important question.

An additional factor of note is that almost one-third of students (31.8%) converted courses to pass / fail. While we did not inquire about the rationale regarding why students with disabilities selected this option, it is possible that necessary changes in accommodations prompted students to question whether or not they were prepared to meet the expectations of a grade bearing course.

Not surprisingly, student learning needs were varied and substantial during the spring 2020 semester.

Students reported lower levels of motivation in the remote environment (mean=2.7) and felt less connected to other students (mean=2.4), all consistent with the isolated learning conditions. Additionally, students found taking notes (mean=3.1) and managing time (mean=3.2) were slightly more difficult during remote learning. There was variability (mean=3.4) regarding whether student's reported coping well with home learning, and there was a low mean rating about student connectedness to peers during the transition (mean=2.4).

An overwhelmingly clear trend in the data was that family demands impacted student learning in ways that differed from prior semesters (mean=4.6). College students with disabilities also reported being at greater risk of having the switch to remote instruction impact their outcomes as 31% of students reporting financial concerns during this time period and 39.9% of students reporting medical concerns about COVID-19. Many universities are already experiencing fiscal crises due to the resulting economic challenges (Briger, 2020), thus institutions are encouraged to genuinely consider the concerns of students with disabilities or risk further shrinking revenue as students may fail to return to campus.

Limitations

Though this study is the largest domestic (U.S.) study of postsecondary student with disability experiences during spring 2020, results should be interpreted with caution. First, though this survey was distributed through several national organizations and networks, the sample was vastly female, included a large number of students with ADHD and emotional or psychiatric disorders, was regionally unbalanced, and included about 15% more four-year institutions than exist nationally. While this limits generalization, there are several strengths of the sample as it is the largest domestic exploration to date of experiences of students with disabilities during the COVID-19 spring 2020 semester interruption. The sample also reflects a nearly equal split regarding if students disclosed one or two or more disabilities, provided insights around students pursuing bachelor's degrees, included about 10% of graduate students with disabilities in the sample (an especially under researched group), and a large range of institution size. An additional limitation includes student self-report of disability without independent confirmation of diagnosis, though this is common in higher education surveys of student experience. Finally, this survey was constructed from other validated measures but ultimately unique and not pilot tested.

Implications

Fortunately, even amidst the initial struggle of the shift to remote learning during the Spring 2020 semester, students in general perceived the response by disability service units, faculty, and universities as a whole to be positive. However, continued COVID-19 related disruptions, as well as the high likelihood that this efficacious rapid response will inevitably be repeated as a function of its general success (e.g., snowstorms, hurricanes, ice storms) makes it important to understand both the concerns and the positive experience that students encountered. Survey results, interpreted in light of limitations, provide guidance for university personnel for both proactive planning and priority triage service delivery. From a consumer-based model, these results are also an important reminder about the value of professional development and training for faculty with respect to issues of disability (e.g., instructional methods, understanding and providing accommodations, social emotional support) given their role as front facing university professionals likely having the most consistent student engagement experience.

Furthermore, given the nature of the pandemic and the likelihood of ongoing challenges with respect to instructional delivery, institutions are encouraged to consider: (a) epidemiological training and resources for students and institutional personnel with a focus upon current knowledge about COVID-19, virus transmission prevention, and considerations for certain special populations such as students with disabilities; and (b) the delivery of real-time or nearly real-time mental health counseling and tools. Institutional personnel should be provided professional development training in the recognition of students who may be having social-emotional challenges. Moreover, institutions should also consider alternative therapeutic delivery options such as virtual visits and teletherapy options, and indeed some are reportedly doing so (Anderson, 2020).

Further research is also necessary to understand how pre-COVID-19 accommodations will be relevant in the current remote learning climate, but with significant numbers of universities providing remote and face-to-face lessons, it is possible spring 2020 ushered in a new era of written accommodation plans for student affairs staff. For example, a plan might be written for multiple learning experiences (e.g., hybrid, face-to-face, remote) with clauses indicating when and how accommodations might be utilized.

Remote learning during COVID-19 not only presented some anticipated social-emotional and health challenges for many students. The current results confirm the perceptions of service providers that the

transition to remote learning put students with disabilities more at risk than their typically achieving peers (Scott and Aquino; 2020) and echo the findings of Zhang et al. (2020) regarding health concerns, as isolation, stress, and financial issues may require additional supports if students with disabilities are to remain a vibrant and productive part of the campus culture. Campus student affairs supports might specifically target students with disabilities to make sure they are not unnecessarily placed at risk of dropping out or delaying graduation. Moreover, it will be of particular concern to *proactively* determine how the pandemic is affecting the educational experience, return to college rates, and college completion rates for college students with disabilities, who already graduate at levels less than their typically achieving peers (41% versus 52%; Newman et al., 2011). Future research should also examine the impact of “Covid Fatigue” on these student issues, as the need for remote learning and social isolation continues into future semesters.

Likewise, a critical consideration is how institutions can meet the housing, food insecurity, and financial challenges facing students. The current data highlight not all students have personal computers, internet access, or other resources necessary to seamlessly transition between face-to-face and remote learning. The additional stress (emotional and financial), necessitates a reimagining of what student support entails. Moreover, for those without reliable internet service, the medium selected by most universities for instructional delivery, calls into question issues of digital equity and likely classism, which are certainly worthy of exploration. How might disability service offices (or other appropriate institutional entities) be equipped to provide students with loaner laptops and personal hotspots? We believe there is an implicit contract between the university and the student that courses will be delivered utilizing a mechanism that results in reasonable educational access for the student.

Institutions should also continue to examine the instructional implications of remote learning with related professional development in the use of the Universal Design for Learning (UDL) framework for teaching faculty. Through the removal of barriers to online learning through the utilization of UDL methods, faculty can provide a learning environment that supports a greater number of learners while maintaining high standards of quality. The overwhelming student report indicating a need for different accommodations could be a catalyst for disability service discourse and faculty professional development regarding learner challenges and the selection of more

appropriate digital accommodations, or the utilization of instructional practices that render accommodations unnecessary, to be used routinely in university courses.

Summary

In spite of the pandemic and resultant shift to full online delivery of instruction for students, colleges and universities are still charged with meeting federal legal requirements of registered students with disabilities. The current study ascertained the experiences of students with disabilities in higher education during the shift to remote learning during the spring 2020 semester. Overall, students reported general satisfaction with disability service offices and faculty support in particular, however, the results highlight a need to examine the pandemic impact upon the provision of accommodations in online settings in particular. The unique needs of students with disabilities relative to health, and financial considerations also merit additional and ongoing consideration. Indeed, the pandemic may have moved postsecondary learning toward a greater utilization of remote delivery tools much sooner than anticipated. Students with disabilities appear to experience both benefit and challenge in this learning setting.

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Table 1*Demographic Characteristics of the Sample*

Demographic	<i>n</i>	%
Gender		
Male	64	19.2
Female	236	70.7
Nonbinary	21	6.3
Prefer not to say	7	2.1
Other	3	0.9
Missing	3	0.9
Disability N		
One	166	49.7
Two or more	168	50.3
Disability Type¹		
ADHD	134	40.1
ASD	39	11.7
Chronic Health	68	20.4
Deafness/Hard of Hearing	28	8.4
Mental Health	125	37.4
Intellectual disability	10	3.0
Learning disability	92	27.5
Mobility/Orthopedic disability	35	10.5
Speech/language impairment	12	3.6
Traumatic or acquired brain injury	21	6.3
Visual impairment (including blindness)	24	7.2
Other	45	13.5
Degrees Currently Pursuing		
Associate's Degree	44	13.2
Bachelor's Degree	237	71.0
Graduate Degree	35	10.5
Spring 2020 Graduate	15	4.5
Missing	3	0.9

Note. ¹As participants could select more than one response, the sum of the disability categories will add up to more than 334.

Table 2*Number and Type of Pre-COVID-19 Accommodations Reported by the Sample*

Number of Accommodation Types	n	%
Number of Accommodations		
1	30	9.0
2	53	15.9
3	57	17.1
4	46	13.8
5	51	15.3
6	28	8.4
7	19	5.7
8	19	5.7
9	9	2.7
10	4	1.2
11	1	0.3
12	1	0.3
13	1	0.3
Missing	15	4.5
Type of Accommodations (n=319) ¹		
Accessible campus transportation	21	6.6
Alternate format of class materials - Braille or large print	21	6.6
Assistive technology (including speech to text, text to audio)	82	25.7
Breaks during testing	60	18.8
Calculator	58	18.2
Distraction free or reduced distraction testing environment	211	66.1
Ergonomic classroom furniture including chairs/tables	7	2.2
Extended time for assessments (e.g., tests, quizzes, etc.)	253	79.3
Extended time for assignments	134	42.0
Housing accommodations	65	20.4
Notetaker or copies of notes	117	36.7
Preferential seating	85	26.6
Readers	18	5.6
Real time captioning or transcriptions	12	3.8
Recording classes/lectures	131	41.1
Recordings of text	33	10.3
Other	48	15.0

Note. ¹ The percentage was calculated out of the 319 participants who endorsed at least one accommodation.

Table 3*Type and Format of Remote Instruction Received by the Sample*

Course Instruction Type/Format ¹	<i>n</i>	%
Remote Instruction Type		
Use of an instant messaging service	10	3.0
Video Lectures/Classes	276	82.6
Materials uploaded to a college LMS	296	88.6
Emailed instructional documents directly	141	42.2
Email communication regarding updates, changes, etc.	286	85.6
Other	3	0.9
Course Formats		
At least one course used a combination of synchronous and asynchronous formats	169	50.6
At least one course was delivered asynchronously	239	71.6
At least one course was delivered synchronously	231	69.2
Missing	6	1.8
Number of Formats		
1	130	38.9
2	85	25.4
3	113	33.8
Missing	6	1.8

Note. ¹As participants could select more than one response, the sum of the disability categories will add up to more than 334.

Table 4*Participant Answers to Yes/No Items*

Item	<i>n</i>	Yes	%
I have financial concerns as a result of COVID-19 that are impacting my ability to continue my college career	331	103	31.1
I converted one or more courses to pass/fail because of remote learning	329	108	32.8
I have medical concerns about COVID-19 that will impact my ability to return to face-to-face learning	329	130	39.5
I found that I no longer needed to use certain accommodations in the remote environment that I used in a face-to-face environment	331	149	45.0
I found that I needed new or different accommodations in the remote environment than I needed in a face-to-face environment	329	191	58.1
I had reliable internet access in the place that I lived	331	291	87.9
I had access to a personal computer/laptop that no one else used	334	314	94.0

Table 5

Participants Responses to Likert-Scale Items on a Six-Point Scale (Strongly Disagree=1 to Strongly Agree=6)

Item	n	Mean	SD
I felt connected to other students in my classes during the switch to remote learning	333	2.4	1.46
My motivation to learn was strong in the remote environment	333	2.7	1.70
Taking notes was easier in the remote environment	330	3.1	1.74
I was able to manage my time well during remote instruction	333	3.1	1.66
I felt connected to the instructors at my college/university during the switch to remote learning	333	3.1	1.50
I coped well with learning from home	334	3.3	1.58
I was able to access student supports (e.g., counseling, advising, career services) easily during the Spring 2020 semester	327	3.5	1.62
The disability services center provided helpful information regarding scheduling finals	328	3.5	1.57
I felt supported by my institution during the transition to remote learning	333	3.6	1.56
The remote platform(s) used to deliver instruction facilitated learning	328	3.6	1.43
I was able to set up a productive workspace at home	333	3.7	1.56
The disability services center provided helpful information regarding receiving accommodations remotely	330	3.7	1.63
I felt supported by my disability services center during the transition to remote learning	330	3.8	1.65
My instructors considered accessibility in the remote learning materials they provided me in their remote instruction	334	3.9	1.54
My access to needed disability related services remained stable during the transition to remote learning	331	3.9	1.64
I received clear guidance related to how to use any new technologies/software needed for my courses in the remote environment	330	4.0	1.53
I felt supported by my instructors during the transition to remote learning	334	4.0	1.45
It was easy to contact my disability services center and they responded in a timely manner	327	4.2	1.44
I received clear instructions from my instructors regarding how to access my course materials remotely	334	4.2	1.46
I received clear information from instructors regarding how my courses would be assessed remotely	333	4.2	1.39
My instructors were helpful in communicating any changes to assignments and projects	332	4.2	1.41
I needed to change the methods I used to take notes in the remote environment	332	4.3	1.47
Family demands (e.g., caring for family members; internet reliability; other distractions) impacted my learning in ways that differed from prior semesters when I learned face-to-face	332	4.4	1.67
The remote platform(s) used to deliver instruction were accessible to me	330	4.6	1.31