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Perceptions of College Students with Autism Spectrum Disorder on the Transition to Remote Learning During the COVID-19 Pandemic

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Abstract

COVID-19 caused a major shift in how college students, including those with disabilities, received their education during the Spring 2020 semester. The rapid shift to remote learning resulted in new challenges, but also some benefits for students. This study presents the results of open-ended responses of a cohort of 31 students with autism spectrum disorder (ASD) who were part of a larger study and enrolled in very competitive to highly competitive institutions (as rated by U.S. News and World Report) during the Spring 2020 semester regarding their experiences—both positive and negative—in shifting to remote learning. The students described advantages (including personal and academic benefits) with remote learning as well as disadvantages. These problematic areas included the structure and infrastructure of course delivery, environmental factors, social factors, and personal factors. Specific examples of each are presented to help richly capture the experiences of these students during an unprecedented period in history.

Plain Language Summary

COVID-19 required most college students with autism spectrum disorder (ASD) to take their courses remotely during the last part of the Spring 2020 semester. This resulted in both benefits and challenges for students. Thirty-one college students with ASD described their experiences and what went well and what were challenges. Advantages included more convenient schedules. Challenges included taking courses online, learning at home, and less chances to talk to teachers and peers. We provide comments from the students that describe their experiences during this unique time.

Students with disabilities constituted 19.4% of all undergraduate students in American colleges and universities in the 2015-2016 academic year (National Center for Education Statistics, 2019) and those with autism spectrum disorder (ASD) are reported to be an increasing subcohort within this group (Dijkhuis et al., 2020; Hillier et al., 2018; Van Hees et al., 2015). The most recent available national data related to students with ASD in college comes from two sources. The National Longitudinal Transition Study-2 (Sanford et al., 2011) reported that 46.6% of students who received special education services under the ASD category went on to some type of postsecondary institution, more often to a 2-year school (32.6%) than to a 4-year school (20.4%). The U.S. Department of Education (2017) reported similar numbers with 33% of students

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with ASD who graduated from high school attending a 2-year school and 20.9% attending a 4-year school in 2013.

The extant literature notes that college students with ASD are likely to face academic and nonacademic challenges in college that can more often lead to unsuccessful outcomes than for their peers (Bolourian et al., 2018; Cox et al., 2017; Dijkhuis et al., 2020). Reis et al. (2021) interviewed 40 college students with ASD. Participants reported that difficulties with mental health issues, time management and organization, and unclear instructional delivery by instructors were the major barriers to their academic success. They also noted that they responded more effectively to instructors who were passionate about their content area and were empathetic to student needs.

Given that this was the context prior to the switch to remote learning in March 2020 necessitated by the COVID-19 pandemic, it is important to consider how students with ASD were impacted by this shift. It was estimated that over 96% of postsecondary institutions in the U.S. transitioned to remote learning during the Spring 2020 semester because of the pandemic (College Crisis Initiative @ Davidson College, 2021), and moreover, this was a rapid shift that took place within a few weeks (Madaus et al., 2021).

Several studies and nonpeer-reviewed articles have been published over the past year that explore the experiences of students with disabilities during this time period, but none have examined the perceptions of students with ASD specifically. The Association on Higher Education and Disability (AHEAD) from the U.S. surveyed their members (i.e., staff at disability service offices; Scott & Aquino, 2020) and found that their members perceived that online learning was more difficult for students with disabilities versus the general population of students during the Spring 2020 semester—immediately after the shift to remote learning. A follow-up investigation of this group reported that disability service professionals perceived that those students were having less difficulty during the Fall 2020 semester (Scott & Aquino, 2021).

The change in instructional delivery also brought changes in the types of accommodations needed and received by students with disabilities as well as in the environment in which students worked (Lalor & Banerjee, 2021; Madaus et al., 2021). Kunkes (2020) and Zhang et al. (2020) conducted surveys of college students with disabilities at specific institutions and both reported that students indicated that their needs for accommodations changed in the remote learning environment. Zhang et al. also found that students with disabilities reported having high levels of distress and anxiety during the Spring 2020 semester. These findings were echoed in a sample of Irish college students with disabilities—the majority of whom disagreed with an item that said they were coping well with the shift to remote learning (AHEAD-Ireland, 2020).

Madaus et al. (2021) surveyed 334 college students with disabilities from across the U.S. Similar to the previously cited research, the students in this sample indicated that they required a shift in their accommodation needs. They reported feeling supported by their instructors and the staff they work with at the disability services offices. They also noted that family demands (i.e., working from home or caring for family members) negatively impacted their learning during the shift to remote instruction.

Given the increasing numbers of college students with ASD and their previously noted unique academic and nonacademic experiences, it is important to understand these perspectives during this unique historical moment. Thus, this study captured the perspectives of a sample of 31 ($N = 31$) college students with ASD, who were participating in another study about the experiences of college students with ASD, and who completed pen-ended written response related to their experiences in the Spring 2020 semester during the switch to remote instruction.

Methods

The current investigation expanded upon the research of Reis et al. (2021), who interviewed 40 academically talented college students with ASD. Institutional Review Board approval was received to conduct the investigation, and recruitment emails were sent to the accessibility services office at very competitive to highly competitive postsecondary institutions. Interested students needed to meet the inclusion criteria, which included (a) the student was in college or was a recent graduate; (b) had been diagnosed with ASD by a K-12 school, a clinical psychologist, or psychiatrist; (c) was receiving services from a college accessibility services office on the basis of ASD; and (d) had a history of being identified as a gifted or talented student in K-12 education or of participating in a gifted education program. Each student also agreed to participate in any follow-up questions that emerged. Participants provided informed consent and were provided with a \$20 gift card after the interviews were completed.

As noted, 40 students with ASD who were enrolled in or were recent graduates of 4-year postsecondary institutions located in Western, Midwestern, and Northeastern states participated in either face-to-face or virtual interviews about their high school and college experiences. Each of the institutions was rated as a top college or university in the U.S. in the *U.S. News and World Report* (2021) *Best National University Rankings*, and eight were private schools and two were public schools. A profile of the total sample of students interviewed in the parent study indicates that 22.5% were first-year students, 12.5% were sophomores, 20% were juniors, 15% were seniors, and 10% were graduate students. An additional 20% were in-between years in terms of academic credits earned at the time of the interviews. Each of these students were registered with their campus disability support office as a student with ASD.

As part of the parent study, a follow-up electronic questionnaire was sent to all 40 participants interviewed. Given that the time frame overlapped with the Spring 2020 semester, the following open-ended questions were added.

- During the Spring 2020 semester, what were your experiences with the transition to online learning?
- What benefits or advantages did online learning offer you?
- What barriers or disadvantages did online learning offer you?

Present Sample

Thirty-one students (of the 40 students contacted) responded to this questionnaire,

which represents 78% of the students who participated in the parent study. Of these, most identified as male (58%), followed by those identifying as female (32%), and non-binary (10%). Twelve percent of the respondents indicated having a disability in addition to ASD. The students ranged in terms of class standing, with 19% reporting as first-year students, 7% as sophomores, 16% as juniors, 19% as seniors, and 10% as graduate students. An additional 26% of the students were in-between one of these class standings credit-wise, and one student (3%) was a recent college graduate. Twenty-six out of the 31 students (87%) indicated majors in the following areas: STEM (e.g., civil engineering, software engineering, computer science, physics, psychology, pathobiology, atmospheric science); business (e.g., journalism, economics, business analytics, digital media and design, management information systems); or liberal arts (history, creative writing, dramatic writing). The remaining students did not indicate a declared major. As noted, 78% of the students who participated in the full-interview parent study responded to the follow-up survey and the demographics of this subsample were representative of the whole sample of 40 students. Thus, we consider this subsample to be acceptable as this was an exploratory study that sought to assess how a sample of college students with ASD responded to the transition during the rapid shift to online learning in the spring of 2020.

Data Analysis

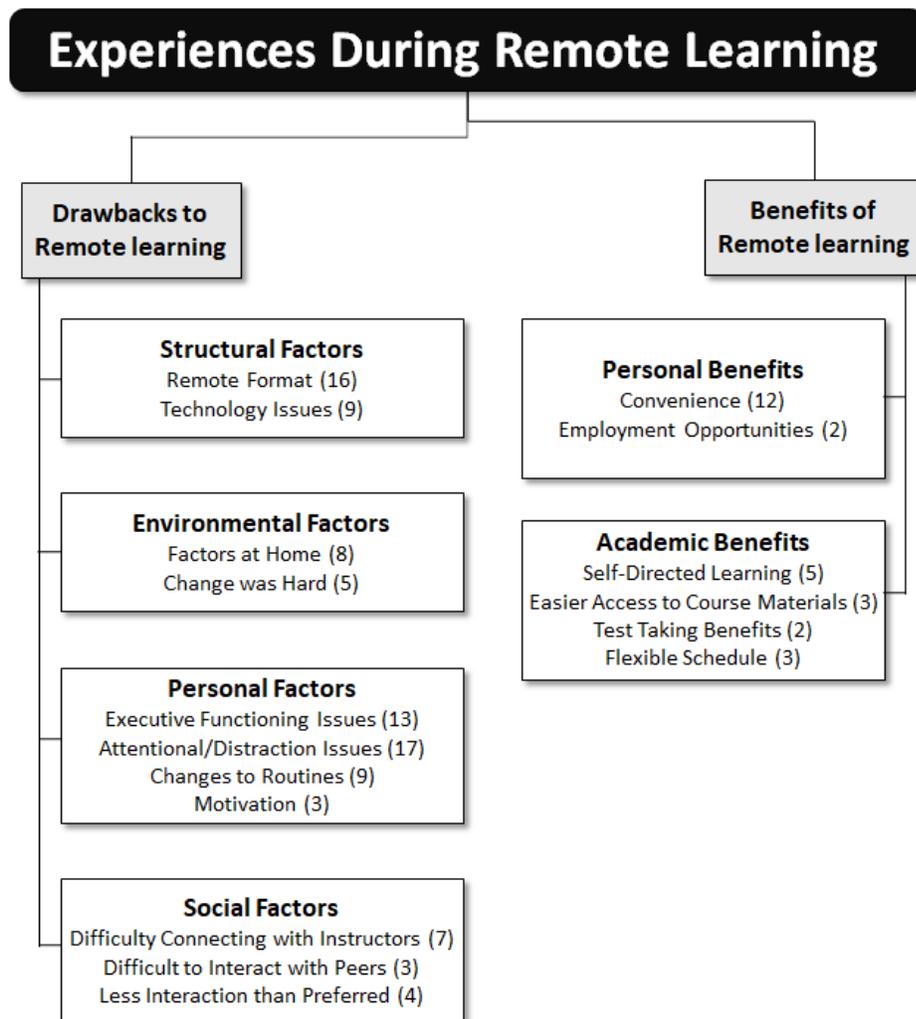
Data analysis followed the guidelines suggested by Braun and Clarke (2006). The first two authors began the analysis by independently doing a broad reading of each response and identifying common statements. As Braun and Clarke described, they “generated an initial list of ideas about what is in the data and what is interesting about them” (p. 88). They then collaborated to identify and define specific codes and subcodes over three rounds of review and discussion and a final set of codes and subcodes was established. The data from the respondents were then entered into Dedoose, a qualitative data analysis software program. The two authors independently coded each response using the determined codes and subcodes. Discrepancies were identified and the two authors met and resolved each. The third author conducted a reliability check with 25% of the excerpts. A Kappa of .65 was calculated, which is within accepted guidelines (Syed & Nelson, 2015). A frequency analysis of each code was conducted, and the codes were re-examined and, in some cases, collapsed into other codes if there was insufficient data to support them as a unique code. Two broad themes emerged: (1) benefits of remote learning, and (2) drawbacks to remote learning. Within each, subthemes were identified and described, as described below. A thematic map of the data is shown in Figure 1.

Results

Benefits of Remote Learning

Student comments that described the benefits of remote learning clustered into two subthemes—personal benefits and academic benefits.

Figure 1

Thematic Map of Experiences During Remote Learning**Personal Benefits**

In terms of personal benefits, the most commonly mentioned advantage of remote learning was the convenience ($n = 12$). For example, students described being able to get ready for class quickly, with less preparation, and being able to better set their own schedule to study with the extra time. A male student wrote, “I had a lot more time to study because I wasn’t walking back and forth, looking for food, looking for a place to study between classes, or trying to recover from anxiety.” A female student wrote, “It was nice to not actually have to drive to campus and park and take the shuttle first thing in the morning.” Another male student described that “I was having sleep problems during the semester, which made it hard to attend class but having it online made it much easier to participate in class.”

Academic Benefits

The most common academic benefit to remote learning, cited by five students, was that remote learning allowed them to self-direct their learning and one student described that he was able to “target my studying to the time of day when I felt most alert.” A male student from a 4-year postsecondary institution wrote, “I felt like I could do assignments more freely and in my own time. I didn’t feel as pressured to do things at an incredibly fast pace.” Another male student wrote, “I enjoyed having the opportunity to devote time to individualized learning without fear of distraction.”

Three students commented on the benefits afforded by having a more flexible schedule, with one male student stating, “I found it much easier on my schedule since due dates were much more flexible and I was able to do my schoolwork in accordance with my schedule.” The same student wrote, “I took up a part-time job, and I found the online format was easy to work around with my part-time job.”

Other benefits related to notetaking and testing. Being able to access recorded lectures to watch at any time and having access to online notes was noted by three of the students. One male student stated that “it was nice to be able to watch lessons without having to be there all the time and make my own schedule for completing work.” Two students commented on benefits of taking exams remotely. As a female student wrote, “online exams were more comfortable for me than in-person exams.”

Drawbacks to Remote Learning

The student responses also described drawbacks or disadvantages to remote learning. These clustered into four subthemes: (1) structural factors, (2) environmental factors, (3) student personal factors, and (4) social factors.

Structural Factors

Issues that we considered structural centered on such things as the format of remote courses, technology, and dealing with the transition from face-to-face instruction to remote learning. For example, 16 students specifically described how remote learning was more challenging and that the format interfered with their learning, especially when course structure and expectations changed. Some students mentioned specific content areas, such as art, acting, painting, music, dentistry, second language classes, and courses with group work that were more challenging remotely than face-to-face. A male student from a 4-year postsecondary institution wrote, “Some barriers I encountered were consistent changes in curriculum, which was difficult since I do have difficulty adjusting and adopting to sudden deviations from a routine.” Another male student from the same 4-year postsecondary institution described,

I certainly know that I have an incredibly difficult time learning online compared to in a classroom, particularly when a professor merely posts videos or PowerPoints (sic) or uses some other format that completely loses the interactive experience of learning.

One student explained that the rapid shift also impacted instructors, which in turn impacted students, stating:

Most of the issues with the online learning were that the teachers were thrown into this as fast as the students were, so they had to scramble to figure out how to teach online just as we were scrambling to learn.

Nine students commented on issues with technology that negatively impacted their learning. These tended to center on internet connections, and as a male student described, “The biggest transition was that our new songs could no longer be performed live, as no two bandwidths (sic) on zoom are created equal.” Students also commented on the impact of technology issues impacting social interactions. As summarized by a male student, “Internet issues often made online calls a bit difficult.”

Environmental Factors

A number of students expressed that they experienced challenges leaving the campus environment and returning home ($n = 8$). Some noted that home is where they would normally relax and that it was harder to focus and do work there. One male student wrote, “I found I was having a hard time being as productive working at home as I was at school. It was easier to work faster versus at home.” But other students described that the home environment itself created the challenge. This included having space to work, and also family situations that impacted learning. As one female respondent stated, “It was harder to get extra help if needed because of all the chaos going on (especially whilst also living in a turbulent household).” Another female student commented “It was pretty awful for me, because my family is very large, and it was hard to focus on school.”

Personal Factors

Perhaps the most commonly described drawbacks centered around the student specifically, and issues with attention and being distracted ($n = 17$). One student wrote, “I became too easily distracted in the familiar environment,” while another stated, “It did also mean that I had less impulse control, as I could access the internet whenever I wanted during class hours.” One female student wrote that “I kind of have a Tetris addiction, and I’d be tempted to play or surf the web instead of listen.” A male student described:

The biggest disadvantages was [sic] what I would call P.Q.S. “pandemic quarantine syndrome.” I actually had significant time to watch Netflix and catch up with friends and especially old high school friends that I never had before. While this did not impede my work flow and output, it definitely [sic] productivity harder and also more draining.

Thirteen of the students described the impact of executive functioning skills (most commonly around time management) on their learning in remote environments. One student stated, “My time management was worse than it was with in-person classes, the long class times were monotonous.” A male student from a 4-year postsecondary institution described that

“Online learning was harder in some ways because different classes had different deadlines and I had a hard time remembering when they all were.”

Nine students described challenges dealing with changes to their routine. One student stated, “I hated having to live at home again instead of campus, as I had just gotten done acclimating to being on campus and then I had to transition again and live at home.” Another wrote, “I was in the groove [sic] of things on campus. My routine was set in stone. I felt very independently driven. At home I had to readapt everything routine wise.”

Social Factors

Students commented on the drawbacks of not being able to interact or communicate with their professors and peers. Seven students focused on not being able to obtain the live time support and answers to questions that are available in face-to-face learning. This included not receiving answers to emails and having professors with inconsistent office hours. One female student from a 4-year postsecondary institution summarized these concerns this way, “I also did not have professors readily available, as they now had to do more at home with their own families and children, which I understand entirely, but was frustrating as a student.” Another female student stated, “The barriers I faced were emailing professors and not getting answers to questions about assignments in a helpful way. Sometimes, the professors only respond to emails once per day, then the next thing you know, it’s exam day.” Another noted, “Office hours with instructors moved around frequently and the Zoom links would change from time to time, which led to some initial frustration. All in all, it was an interesting experience.”

Social interactions with peers were also noted as a challenge by three students. One female student commented that online learning “did not allow me as much connectivity with my peers as I would have liked.” The other two students commented on the impact of lack of connection on group projects. As one female student wrote, “Group assignments became harder because I actually had to contact other students who I didn’t really know.”

Discussion

To the authors’ knowledge, the present study was one of the first to explore the experiences of college students with ASD specifically during the shift to remote instruction during the Spring 2020 semester. Studies of heterogenous samples of students with disabilities collected during the same period noted that students indicated that they needed different accommodations in online environments (Kunke, 2020; Madaus et al., 2021; Zhang et al., 2020). The students in the present study did not comment on their accommodations specifically but many discussed how the environment (both the space in which they completed work and the remote learning environment) impacted their learning. For example, many participants noted that working from where they lived was challenging as they found it difficult to relax. They also reported more distractions in this environment, a finding echoed in research conducted with heterogenous samples of college students with disabilities (Madaus et al., 2021).

The students who participated in this investigation were clear that there were some advantages to remote learning; namely the convenience of being able to work with a more flexible schedule and at a pace that was more self-directed. While this may be in part due to the way the prompt on the electronic questionnaire was worded, this finding echoes the results of Madaus et al. (2021) whose sample reported on the convenience of remote learning in terms of self-scheduling and pacing. Madaus et al. also found that students felt their instructors effectively communicated with them but did not feel as connected to their instructors or other students in the remote learning environment. The students in the present study also noted feeling less connected and experiencing social difficulties in the online environments. College students with ASD have been reported to have social challenges also in the traditional instructional paradigm. Hillier et al. (2018) stated that the students in their sample faced issues with loneliness and social isolation, and both Bolourian et al. (2018) and Van Hees et al. (2015) noted that college students with ASD described a need for social interactions—exhausting as they may be. Regardless of the challenges, the students in the present study were clear that not being able to interact face-to-face with instructors and to socialize with their friends and peers was a detrimental experience.

Many students ($n = 13$) in the present study reported issues with executive functioning; specifically, most often regarding time management, changes to routines, and self-scheduling. This is perhaps not surprising given that literature about college students with ASD often describes difficulties in these areas during traditional instruction paradigms in college (Bolourian et al., 2018; Hillier et al., 2018; Van Hees et al., 2015). Therefore, early and frequent emphasis and practice in areas related to time management, setting realistic goals and work deadlines, and work completion should be a key part of secondary transition planning, and when possible, in postsecondary environments via freshmen seminar courses and other academic support initiatives. As colleges offer more remote learning options in the future, it will be important for administrators and instructors to be aware of and address the structural issues that students experienced in the Spring 2020 semester, namely having clear and stable course structure and expectations, with technologies that are consistent and accessible and that allow for timely interactivity among instructors and students.

Implications

Some of the common challenges faced by college students with ASD in traditional learning settings were perhaps exacerbated by the rapid change to remote learning. Students who relied on routines to help manage academic demands found these thrown off and having to develop new ones in familiar settings. However, these familiar settings often led to other distractions. As students begin to transition back to face-to-face instruction, it will be useful for service providers and other college student affairs personnel to assist them in reidentifying and re-establishing routines and organizational plans that best help the students to readjust. It might also be useful to assist students to re-examine and re-establish social networks and activities that can help them connect with both their instructors and peers. The respondents also noted some advantages to remote learning as they also discussed the benefits of being able to structure their learning and at work at times that were convenient and more productive for them. These types of executive functioning skills can be taught to students and can be of long-term benefit.

Limitations

The switch to remote learning in the Spring 2020 semester was a rapid, complex, and dynamic experience. We recognize that individualized interviews would reveal richer and deeper insights than written responses to an open-ended query. As noted, the students described within this investigation participated in individual interviews about their secondary and postsecondary experiences as part of a larger parent study. Those interviews began and were held prepandemic, or right as the pandemic was shifting learning into remote formats, so exploring students' perceptions about this topic was not a consideration when the full interviews were conducted. The students agreed to answer follow-up questions about their interview, and the timing of this part of data collection at the end of the Spring 2021 semester lent itself to an inquiry about this topic. We sought to capture and record an important point in history with a purposive sample of students with disabilities at minimal intrusion into their time.

We also recognize that a broad definition of academically talented students was used, in keeping with the rationale used by Reis et al. (2021). Moreover, we acknowledge that the *U.S. News and World Report (2021) Best National University Rankings* is only one way to capture the "competitiveness" of the institutions in which the students were enrolled. However, it does provide a commonly used framework by which institutions are ranked, including the competitiveness of their admissions process.

Summary

It is important to note that the present results capture the perceptions of college students with ASD regarding the Spring 2020 semester specifically. However, as noted by Madaus et al. (2021), such descriptions provide future researchers with a "clear benchmark" for understanding student experiences during this unprecedented point in time. Future investigations should continue to explore student experiences with remote learning, especially as colleges transition to hybrid and eventually back to face-to-face instruction. Given the academic challenges faced by students with ASD, such knowledge is critical to enhancing their success in college.

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