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JOURNAL OF POSTSECONDARY EDUCATION AND DISABILITY • Volume 38, Issue 4 • Winter 2025 • Pages 637-736

Journal of Postsecondary Education and Disability

Volume 38, Issue 4, Winter 2025

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ISSN 2379-7762 (Print) ISSN 2328-3343 (Online)

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Stress, Coping, and Academic Functioning During COVID-19: A Longitudinal Study of Students With and Without Disabilities

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Abstract

Students with vulnerabilities prior to the pandemic, namely those with disabilities, could have experienced increased stress and maladaptive coping skills and lower academic achievement during the pandemic. However, there is little research conducted among students with disabilities using robust longitudinal designs with time points spanning from before to during the pandemic. In the present study, 1,826 college students (M_{age} = 18.2 years, 78.6% female) completed self-report questionnaires before (Fall 2019) and during (Spring 2020 and 2021) the pandemic that assessed disability status, exposure to COVID-19, perceived stress, coping strategies, and academic achievement. The disability types most often endorsed were attention deficit disorder (20%), followed by mental health (20%) and learning disorders (9%) with all other disability types being endorsed by < 2% of the sample. Our results show that students' perceived stress and maladaptive coping strategies increased from before to during the pandemic, and these increases were larger in students *without* disabilities. Secondarily, our results show that students perceived stress and maladaptive coping strategies were predictive of lower academic achievement during the pandemic with no differences across disability status. We conclude from these findings that all college students were at increased risk that augmented over time. Monitoring and preventative interventions should be mandated to ensure mental health of this population moving forward.

Keywords: COVID-19, perceived stress, coping, prevention, students with disabilities, health and prevention measures

The COVID-19 pandemic shook the entire planet, and Québec's college students were not exempt. From March 2020 to April 2021, they dealt with fears of the new virus and learned to live with the restrictions of the government's complex health and preventive measures (e.g., mask wearing, physical distancing, curfew, testing, vaccination). They were also forced to navigate a major shift to distance-delivered education and support services. Although researchers agree that these upheavals caused stress, studies of post-pandemic stress, anxiety, and related symptoms in college students show conflicting results. More specifically, previous results either suggest lower stress (Benham, 2021), higher stress (AlHadi & Alhuwaydi, 2023), or no significant changes in stress (Laher et al., 2021; Prati & Mancini, 2021; Yang et al., 2021) from before to during the pandemic. Moreover, according to a recent meta-analysis of longitudinal studies, the initial lockdown measures had only slight effects on stress symptoms in young adults, and no significant effects on well-being or perceived social support (Laher et al., 2021).

This portrait of adjustment suggests that the majority of college students appear to be resilient and capable of using positive coping strategies to deal with the stresses associated with the pandemic. However, this conclusion is based mainly on observations of general college populations in the first six months of the pandemic. To date, few studies have investigated changes in stress and coping strategies in the longer

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term and in more vulnerable student subpopulations (e.g., students with disability) using longitudinal designs. Outside the pandemic context, vulnerable students tend to experience intense chronic stress that negatively affects cognitive functioning (Evans et al., 2017). Recent research suggests that such experiences were no different during the pandemic. For example, during COVID-19, students with disabilities experienced significantly higher levels of stress and perceived threat compared to their peers without disabilities, particularly in academic and health domains (Conder et al., 2023). Longer-term studies in more vulnerable students are needed to determine how fluctuations in stress and coping levels affect their academic trajectories. Accordingly, the objective of this study was to describe changes in stress and coping strategies in students with disabilities and without disabilities from Spring 2020 to Spring 2021, corresponding to the first and third wave of the COVID-19 pandemic, and to determine whether these changes predict college adjustment and academic success 1.5 years post pandemic.

Hypotheses for Changes in Stress and Coping Strategies

Two hypotheses could explain changes in student adjustment over the first year of the pandemic. First, through a process of *habituation* or *desensitization*, whereby exposure to a repeated stimulus leads to decreased responsiveness (Yang et al., 2021), individuals would feel lower pandemic-related stress as time goes along. For example, studies of anxiety show that the emotional response to an intense and unpleasant event does not increase infinitely; instead, it plateaus and descends thereafter (Robinson et al., 2022). By this logic, students would find the governmental measures and distance learning modes increasingly predictable and manageable as the pandemic wore on. Students would also have time to learn and understand more about COVID-19 and how to contend with it. The logical result would thus be lessened feelings of unpredictability, improved coping strategies, and, ultimately, lower stress (Robinson et al., 2022; Yang et al., 2021). Some studies that measured perceived stress, anxiety, and coping strategies in college students and young adults prior to and during the first months of the pandemic support this argument (Benham, 2021; Robinson et al., 2022; Yang et al., 2021). For instance, Yang et al. (2021) found that stress in students with and without hearing problems decreased over the first pandemic waves. A meta-analysis by Robinson et al. (2022) showed a small increase in mental health symptoms in young adults soon after the pandemic outbreak, followed by a decrease and a return to pre-pandemic levels comparable to spring 2020.

Under the second hypothesized process, *amplification* or *pandemic fatigue*, college students would be subjected to mental overload due to the multiplicity, repetitiveness, and sporadic unpredictability of external demands and constraints. Between March 2020 and April 2021, students were obliged to adjust to new coursework delivery modes, unclear and changing instructional parameters, job losses or new jobs, restricted social lives, and distance relationships, in addition to new home dynamics that could be stifling and conflictual (Tasso et al., 2021). Many students also had to deal with pressures to get vaccinated as well as fears of COVID-19 infection for themselves and others in their social network (Tasso et al., 2021). Furthermore, like everyone else, students were bombarded by incessant media coverage of the pandemic, with its mixed messages of a positive and hopeful outlook fluctuating with despair in the face of a bleak future (Cheng et al., 2021). Consequently, feelings of lack of control over the circumstances surrounding the pandemic could have contributed to weakened coping strategies and worsened perceived stress. In support of this hypothesis, Laher et al. (2021) showed that many students had negative experiences of online learning during the pandemic, finding it stressful, frustrating, and mentally draining, often leading to burnout. The lack of social interaction in distance learning was perceived negatively by most students, especially by those in their first year of college, who felt that the switch to online modes impeded their adjustment to college (Laher et al., 2021. This finding echoes those by Krendl (2023) who concluded that many students felt more stressed and lonelier in the first pandemic year, leading to poorer mental health outcomes. Similarly, in a cross-sectional study, Son et al., (2020) found that 71% of students reported increased stress and anxiety during the pandemic, versus 20% who reported no changes and 9% who reported decreases.

Effects of Stress and Coping Strategies on Academic Functioning

In addition, variations in students' perceived stress and coping strategies during the pandemic could have impacted various aspects of their academic functioning. In a study in university students, 82% of the participants were concerned about the pandemic's impact on their academic performance (Son et al., 2020). Participants found it particularly hard to make the transition to online classes, citing concerns such as technical issues and changes in the syllabus and the quality of teaching. Some (14%) were worried that the new learning environment would affect their grades, a possibility that caused them great stress. Others (8%) reported being less motived to learn and tended to procrastinate (Son et al., 2020). Similarly, Besser et al. (2020) found that once the pandemic was upon them, college students were less concentrated and focused on their work, less motivated to learn, and less confident about their performance. Le Vigouroux et al. (2021) demonstrated a strong negative association between pandemic-related stress and students' career perspectives. More specifically, Le Vigouroux et al. (2021) found the greater the students' expressed concerns, anxiety, and depression during the pandemic, the more they felt that their chances to follow their chosen career were compromised.

Students with Disabilities

In Canada, disability rates have been increasing, with the highest increases observed among youth age 15 to 24 years (13% in 2017; 20% in 2022). Among these youth with disabilities, most report mental health disorders (68%), followed by learning (46%), and pain-related (34%) disorders (Government of Canada, 2023). Among students with disabilities enrolled in public higher education alongside their peers without disabilities, the pandemic presented unique challenges, with multiple studies suggesting that inequities related to disability status were exacerbated by its onset. For instance, Conder et al. (2023), showed that students with disabilities reported higher overall stress levels and perceived the pandemic as more threatening and less controllable in comparison to their peers without disabilities. They also had higher levels of concerns across multiple domains, including health, academics, and access to resources, highlighting the extent to which the pandemic context decreased well-being among students with disabilities. A study by Tarconish et al. (2022) found that with the rapid shift to remote learning, students with disabilities reported increased mental health concerns as a result of insufficient institutional support with transitioning to online learning. Disability resource professionals observed similar trends, noting an increase in mental health-related accommodations requested by students with psychological disabilities during the pandemic (Aquino & Scott, 2022).

Students can experience a wide range of disabilities, spanning mental, physical and developmental disorders, which pose heterogeneous challenges within the pandemic context. As aforementioned mental health and learning disorders are the most prevalent among Canadian youth (Gouvernement of Canada), with ADHD being the most common neurodevelopemental disorder (Espinet et al., 2022). As such, it is important to highlight research on challenges faced by these groups specifically to better understand the population of interest in the current study.

Longitudinal evidence shows that adolescents diagnosed with ADHD before the pandemic had higher levels of mental health and substance use problems during the pandemic, as well as a more sluggish cognitive tempo. Interestingly, these risks appeared to decrease by the use of positive coping strategies and use of routines, but more research would be necessary (Breaux et al., 2021). Regarding learning disabilities, a study showed that students with a self-reported professional diagnosis of dyslexia reported higher rates of not passing at least one exam, increased academic related stress and more difficulties with the new organization of learning (e.g., distance learning; Zawadka et al., 2021). Evidence regarding the putative impact of the pandemic on students with prior mental health disabilities such as anxiety and depression produced mixed results. For instance, cross-sectional research shows that students with mental health disabilities prior to the pandemic report increased levels of anxiety, depression and stress compared to those without a diagnosed mental health disorder (AlHadi & Alhuwaydi, 2023). However, longitudinal evidence suggests that university students with prior mental health problems experienced maintained or even improved symptoms compared to their peers with lower levels of problems pre-pandemic (Hamza et al., 2021). This pattern of results is consistent with a population study in Québec (Canada), in which anxiety and depression symptoms rose in young adults over the first pandemic year, but only in those without preexisting anxiety and depression (Watkins-Martin et al., 2021). To date, there is little research on how the COVID-19 pandemic affected students with disabilities compared to their peers, especially using robust longitudinal designs. It is possible that the pandemic worsened the stress for students who were already vulnerable, but it is equally possible that less vulnerable students experienced greater stress during the pandemic, meaning that the entire college student population would be at greater risk.

The Present Study

Most studies to date on pandemic-related stress and its effects on academic functioning have been cross-sectional and have focused on the first waves. Moreover, few studies have compared the experiences of students with and without disabilities. To fill in these gaps, our study has three objectives. First, to examine changes in perceived stress and coping strategies in college students over an 18-month period, from the first to third wave of the COVID-19 pandemic. Second, to investigate predictive associations between these indicators and academic outcomes (i.e., college adjustment and academic success after a year and a half of the pandemic). Third, to investigate potential moderating effects of disability status to determine if these associations would differ across disability status.

Method

Participants and Procedure

The participants were part of an ongoing longitudinal study called the ESH-Transition project which was initiated in October 2019. The primary objective of this project was to examine the effects of college support services on the academic trajectories of students with disabilities enrolled in public higher education alongside peers without disabilities. To better compare these groups, students with disabilities were oversampled. The study was approved by the university ethics committee and participants gave informed consent.

Participants responded to online questionnaires at three measurement times: Time 1 (pre-pandemic: Fall 2019), Time 2 (during first peak or "wave" of COVID-19 in Quebec: Spring 2020) and Time 3 (during second wave of cases: Spring 2021).

At Time 1, we approached 10 colleges in Quebec province with the goal of finding a balance between students from urban populations, such as Montreal and Quebec City, and rural populations, such as Ste Hyacinthe. General invitations were made to all newcomer students (by email) and targeted invitations (by professional services staff) to first-year students already registered in an adapted service. We did this to increase the number of disability students in the sample. The only inclusion criterion was to be a first-year student. A total of 1,826 students, of which 41% are students with disabilities (M_{age} = 18.2 years, SD = 3.8; 78.6% female), accepted to be part of this first measurement time (32.9% Montreal; 35.3% Québec City, 31.8% Central Québec). Within their institutions, students were enrolled in one of three distinct programs, called Pre-university (57.0%), Technical (35.2%) and Springboard (7.7%). In Quebec, pre-university programs typically last two years and are designed to prepare students for entry into university, bridging the gap between completing high school and entering in the university. Technical programs typically last three years and focus on practical skills directly applicable in the workforce, although graduates can also pursue higher education (Quebec Education System, 2024). The Springboard program lasts up to three semesters and allows students to enroll in prerequisite courses, improve their academic standing or explore different disciplines (Ministry of Education and Higher Education, 2023).

In Fall 2019, all participants were either in their first semester in higher education (93.7%) or their first semester at their current college (6.3%). The assessment carried out at this time covered disability status, college adjustment and high school grade point average (GPA). The pandemic was declared an emergency in March 2020 and schools were closed by the end of the month. Not long afterwards, in April 2020, we began inviting students to participate in the second assessment (Time 2). About 80% of the initial sample (1,435 students) completed the second assessment, which included questions about their experience of the pandemic, focusing on exposure to COVID-19, pandemic related stress, and coping strategies. The sample characteristics were statistically similar for Time 1 and Time 2 in terms of sex, disability status and type, study region, and study program. Moreover, the participants who withdrew from the study at Time 2 presented similar academic adjustment scores and high school GPA at Time 1 to the participants who remained (Larose, 2022). Over the next year, the Canadian government imposed various measures to help curb the spread of the virus, including social distancing, mask mandates, restrictions on gatherings, curfews, closures of in-person classes at schools and universities, vaccination mandates, movement restrictions, and border closures. Like in most other countries, stricter measures were imposed in waves when COVID-19 cases and hospitalization rates increased, and were eased with decreases in cases.

In April 2021 (Time 3), as Québec was undergoing a third COVID-19 wave and a majority of students were pursuing their 2020–2021 academic year entirely online, we reached out all students who had previously participated in the study. A total of 1,242 students (85% from Time 2 and 68% from Time 1) agreed to complete a third online questionnaire. The assessment aimed to re-evaluate their pandemic experiences (exposure, stress, and coping strategies) and their adjustment to college, in addition to an evaluation of self-reported academic achievement. The questionnaire included self-assessed academic success (see Measures). Similar to the Time 2 sample, the Time 3 sample did not differ from the initial sample on sex, disability status and type, study region, or study program. The participants who withdrew at Time 3 also scored similarly to those who remained on academic adjustment and high school GPA at Time 1 (Larose, 2022).

Measures

Disability Status

According to previous research (Bruggink et al., 2013; Charron & Gaudreault, 2023), we chose to define disability status by considering both (a) the presence of a diagnosed permanent disorder and (b) the student perception of not being able to express his or her full potential at college. While this definition differs somewhat from that in the Accessible Canada Act (2025), it does allow for the identification of students who are struggling.

Disability status was then self reported by students at Time 1. The prompt used was as follows: *A student is considered to be in a "situation of disability" when a relatively permanent physical, cognitive, or emotional condition limits their ability to fully express their academic potential. Do you consider that you are in a situation of disability?* The response options were "Yes," "No," "Maybe," and "Prefer not to respond." Students were then prompted with a list of 11 disabilities and asked to check a box next to those that corresponded to their situation. For each box checked corresponding to a disability, students were prompted to indicate if the disability was diagnosed by a professional disability using the response options "Yes" or "No." The list of 11 disabilities used was as follows: hearing impairment, motor/mobility impairment, visual impairment, learning disability (e.g., dyslexia), language/communication disorder, Attention Deficit Disorder with or without hyperactivity (ADD/ADHD), neurological disorders (e.g., epilepsy, traumatic brain injury), organic disorders (e.g., cancer, Crohn's disease), mental health disorders (e.g., anxiety disorder, mood disorder), autism spectrum disorder, and other conditions specified by the student (Larose, 2022). Of the initial sample, 41.2% of all students disclosed having a disability that was diagnosed by a professional at Time 1 (58.8% of students without disabilities). In the full sample, the most frequent disabilities that were disclosed were attention deficit disorder with or without hyperactivity (ADHD) (20%), followed by mood or anxiety disorders (20%) and learning disorders (9%), whereas all other response options were endorsed by only 1% to 2% of the sample. Note that 37% of students with disabilities reported more than one disability.

Exposure to Covid-19, Perceived Stress, and Coping Strategies

The degree of exposure to COVID-19 was measured at Time 2 and Time 3 with Section A of the QCovid19. Inspired by Lazarus and Folkman's (1984) transactional stress model, this questionnaire was developed and validated in French by our team (Larose et al., 2024). In Section A of the QCovid19 (6 items), respondents indicated whether (0) or not (1) they had experienced symptoms of, were tested for, or diagnosed with positive COVID-19 since the start of the pandemic. The same questions were asked regarding individuals in their social circle (i.e., friends, parents, grandparents). The degree of exposure was then calculated by summing the 6 items and averaging by 6 (0 = no exposure; 1 = maximum exposure).

Perceived stress and coping strategies were measured at Time 2 and Time 3 with sections B and C of the QCovid19. In Section B (6 items), students reported the extent to which they perceived the pandemic as a source of loss (2 items, $r = .35$), threat (2 items, $r = .80$), and challenge (2 items, $r = .68$) with respect to the lockdown measures. Responses were rated on a Likert scale from 1 ("Completely Disagree") to 5 ("Completely Agree"). In section C (12 items), students rated four coping strategies that they may have used during the pandemic and the associated lockdown: doing adaptive activities, such as physical exercise or spending quality time with family (4 items, $\alpha = .75$); doing maladaptive activities, such as increased alcohol consumption or online gaming (2 items, $r = .14$); seeking information about the pandemic, such as watching government briefings and consulting evidence-based websites (3 items, $\alpha = .78$); and using denial, such as downplaying the pandemic's impact and viewing society as alarmist (3 items, $\alpha = .53$). Responses were rated on a Likert scale from 1 ("Completely Disagree") to 5 ("Completely Agree").

A factor analysis of the data at Time 2 enabled reducing the number of dimensions in sections B and C to three latent factors (eigen value > 1; explained variance = 63%). The first factor, called *perceived stress,* regroups the dimensions loss (.85) and threat (.86). The second factor, *proactive strategies*, regroups the dimensions challenge (.75), doing adaptive activities (.75), and seeking information (.57). The third factor, *defensive strategies*, regroups the dimensions doing maladaptive activities (.82) and using denial (.62). This factor structure remains essentially unchanged for the data analysis at Time 3. For reasons of parsimony, we opted to construct these three dimensions at each time of measurement and to use the mean scores of Times 2 and 3 in the main analysis.

Adjustment to College

Adjustment to college was assessed at Time 1 and Time 3 using the French version of the Student Adaptation to College Questionnaire (SACQ-F) (Larose et al., 1996). The questionnaire contains 23 items that measure three dimensions: academic adjustment (10 items, e.g., “I am satisfied with my academic performance in college”; $\alpha = .80$), social adjustment (6 items, e.g., “I am somewhat satisfied with my social life at college”; $\alpha = .85$), and personal and emotional adjustment (7 items, e.g., “I find it very hard to deal with the stress of college life”; reverse coded, $\alpha = .76$). Responses were rated on a Likert scale from 1 (“Completely Disagree”) to 5 (“Completely Agree”). The validity and reliability of the SACQ-F have been well demonstrated (Larose et al., 1996). Given the high correlations across the three dimensions of the SACQ-F, we use the global college adjustment score in the present article, expressed as the average score on the academic, social, and personal/emotional dimensions to simplify the results ($\alpha = .83$ and .85 at Times 1 and 3, respectively).

Academic Success

To assess academic success, we asked the participants to situate their overall level of academic success compared to other students in their study program, using the following question: “Indicate how you would rate your course grades compared to the other students in your study program” (1 = “Among the lowest”; 2 = “Below average”; 3 = “Average”; 4 = “Above average”; 5 = “Among the highest”).

High School GPA

At Time 1, the participants reported their high school grade point average (GPA) based on their final report card. In Québec, the high school GPA score is calculated from the grades earned across all fourth- and fifth-year courses and weighted according to the number of units for each course. We used GPA as a control variable to examine how the experience of the pandemic relates to academic success and intention to persevere at college.

Analysis Plan

In our study, some students did not participate at all measurement times or did not respond to all items on a given questionnaire. The quantity of missing data for our variables of interest varied from 3.1 % to 30.2 %. Little’s MCAR test showed that the data were missing completely at random, X^2 (102) = 1.73, *ns*. Thus, we opted for full-information maximum likelihood (FIML) (implanted in Mplus) for missing data (Mplus version 8.2). This procedure enables handling missing data by using maximum likelihood to estimate model parameters using all available raw data (Little et al., 2000). Applied N varied from 1822 to 1826. We performed preliminary analyses with IBM SPSS 27 and main analyses with MPlus 8.2.

To achieve the first study objective, we conducted repeated measures ANOVAs with GLM (regression models) on the exposure score and the three stress scores (i.e., perceived stress, proactive strategies, and defensive strategies), including disability status (i.e., with or without) as a between-subject factor and time as a within-subject factor. We were interested in the factor time and the interaction time X disability status.

To achieve the second study objective, we conducted two multiple linear regressions to predict (a) academic adjustment at Time 3 after controlling for academic adjustment at Time 1 in a first step and (b) academic success at Time 3 after controlling for high school GPA in a first step. The same variable entry model was used for both regressions. After controlling for initial adjustment or high school GPA (step 1), we entered in a second step the exposure scores at Time 2 and Time 3 to determine their effects on academic outcomes. In a third step, we included the scores for perceived stress, proactive strategies, and defensive strategies at Time 2. In a fourth step, we entered the perceived stress, proactive strategies, and defensive strategies scores at Time 3. Steps 3 and 4 enabled determining whether pandemic-related stress and coping strategies predicted academic outcomes. We standardized all variables included in the regression models.

To achieve the third study objective, we created interactive scores for disability status X exposure, perceived stress, and coping strategies and added them to the three previous regression models in a fifth step. If an interaction was significant, we reran the regression models separately for students with and without disabilities.

Results

Changes in Exposure to COVID-19, Perceived Stress, and Coping Strategies

Table 1 presents the means and standard deviations for the variables exposure, perceived stress, and coping strategies according to measurement time and disability status. Unsurprisingly, the ANOVA results for exposure show a large and significant time effect, $\beta = .562$, $p < .001$. However, the effects of disability status and time X disability status are not significant. This finding indicates a significant increase in exposure from the first to the third wave, which was similar for students with and without disabilities. To illustrate, the percentages of participants who were tested for COVID-19 and who were positively diagnosed in spring 2020 were 3.7% and 0.4%, respectively, and by spring 2021 these percentages had risen to 47.2% and 5.2%. Moreover, substantially more students

Table 1

Means and Standard Deviations for Perceived Stress and Coping During 1st and 3rd Waves of the Pandemic in Québec

	1st wave (April 2020)		3rd wave (April 2021)	
	Students with disability	Students without disability	Students with disability	Students without disability
	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)
COVID-19 exposition	.17 (.22)	.17 (.22)	.50 (.26)	.48 (.26)
Perceived stress	3.21 (1.13)	2.97 (1.05)	3.47 (1.08)	3.41 (1.07)
Proactive coping	3.19 (.77)	3.32 (.72)	2.92 (.70)	2.97 (.71)
Defensive coping	2.20 (.78)	2.09 (.70)	2.18 (.75)	2.01 (.68)

Note. $N = 1826$; all scores appear on a 1 to 5 scale except for the COVID-19 exposition (0-1) scores.

knew someone who had caught the virus by spring 2021 (81.0%) compared to spring 2020 (19.4%).

The ANOVA results for perceived stress show three significant effects: (a) time, $\beta = .199$, $p < .001$; (b) time X disability status, $\beta = -.079$, $p < .05$; and (c) disability status, $\beta = .110$, $p < .001$. Perceived stress increased significantly from the first to third wave for all participants, and more so for students without disabilities than students with disabilities. Note also that although perceived stress differed between these two groups during the first wave, it becomes equivalent during the third wave.

The ANOVA results for the proactive coping strategies scores also show three significant effects: (a) time, $\beta = -.217$, $p < .001$; (b) disability status, $\beta = -.068$, $p < .05$; and (c) time X disability status, $\beta = .077$, $p < .01$. The use of proactive strategies declined significantly from the first to the third wave, and this decline was slightly stronger for students without disabilities than students with disabilities. Moreover, students with disabilities were slightly less proactive than students without disabilities throughout the studied period.

Finally, the ANOVA on the defensive strategies scores produced only one significant effect. Students with disabilities used more frequent defensive strategies than those without disabilities, $\beta = .088$, $p < .001$, but with no increase between the first and third waves. Nevertheless, an examination of the changes over time for each item in the factor defensive strategies reveals significant variations for the item "I consume more alcohol and drugs than usual." The ANOVA results showed three significant effects (a) time, $\beta = .196$, $p < .001$; (b) disability status, $\beta = .082$, $p < .001$; and (c) time X disability status, $\beta = -.094$, $p < .001$. Students reported more alcohol and drug use in the third wave compared to the first wave, with a greater increase for students without disabilities than those with disabilities.

Predictors of Students' Academic Functioning

Tables 2 and 3 present the regression results for the prediction of students' academic adjustment and success by scores on exposure, perceived stress, and coping strategies (proactive and defensive). Table 2 shows that, once having adjusted for initial college adjustment (Time 1), exposure to COVID-19 does not explain college adjustment at Time 3. However, all the scores for perceived stress and coping strategies predict college adjustment at Time 3. Both perceived stress and defensive strategies negatively predict college adjustment, whereas proactive strategies positively predict college adjustment. Overall, the predictors make greater contributions during the third than the first wave. Moreover, the relationships observed for the first wave are entirely explained by perceived stress and coping strategies as reported in the third wave. The predictive model explains an additional 10.7% of the variance in college adjustment at Time 3 beyond initial adjustment.

Table 3 presents the regression results for the prediction of academic success at Time 3. Like college adjustment, exposure does not predict academic success at Time 3. On the other hand, proactive and defensive strategies during the second and third wave as well as perceived stress during the third wave predict

Table 2

*Regression Analysis Predicting College Adjustment Time (*n *= 1826)*

Step	Variable entered	Step 1 β	Step 2 β	Step 3 β	Step 4 β	R²	Δ R²
1	College adjustment at T1	.529***	.525***	.472***	.459***	.280***	.280***
2	Covid19 exposition during the 1st wave		-.053	-.039	-.027	.283	.003
	Covid19 exposition during the 3rd wave		.010	.007	.023		
3	Perceived stress during the 1st wave			-.127***	-.024	.312***	.029***
	Proactive coping during the 1st wave			.105***	.016		
	Defensive coping during the 1st wave			-.062*	-.030		
4	Perceived stress during 3rd wave				-.227***	.387***	.075***
	Proactive coping during 3rd wave				.160***		
	Defensive coping during the 3rd wave				-.119***		

Note. *** $p < .001$; ** $p < .01$; * $p < .05$

Table 3

Regression Analysis Predicting Academic Success at Time 3 (n = 1822)

Step	Variable entered	Step 1 *β*	Step 2 *β*	Step 3 *β*	Step 4 *β*	R^2	ΔR^2
1	High school GPA	.411***	.399***	.379***	.371***	.170***	.170***
2	Covid19 exposition during the 1st wave		-.042	-.050	-.050	.171***	.001
	Covid 19 exposition during the 3rd wave		-.052	-.048	-.046		
3	Perceived stress during the 1st wave			.015	.025	.187***	.016***
	Proactive coping during the 1st wave			.105***	.064*		
	Defensive coping during the 1st wave			-.071*	-.046*		
4	Perceived stress during the 3rd wave				-.019***	.195***	.008*
	Proactive coping during the 3rd wave				.069*		
	Defensive coping during the 3rd wave				-.074*		

Note. *** $p < .001$; ** $p < .01$; * $p < .05$

academic success at Time 3 after controlling for high school GPA. Thus, the more that students used proactive strategies to cope with the pandemic, the greater their academic success, whereas defensive strategies show the inverse effect. In addition, the more threatened the students felt by the pandemic and the greater their feelings of loss during the third wave (perceived stress), the lower their academic success. This second regression model explains 2.5% of the variance in academic success beyond GPA in high school.

Moderating Effects of Disability Status

To determine the moderating effects of disability status, we reran the two regression models while adding disability status to the control variables and introducing the interaction terms disability status X pandemic-related variables in a fifth step. In the first regression model, the interaction scores make a significant contribution to predict college adjustment, F (8, 1810) = 2.18, $p < .05$. This contribution is attributable to only one interaction term: exposure in the third wave, $t = -2.60$, $p < .01$. We found a negative effect of exposure on college adjustment for students with disabilities, $\beta = -.12$, $p < .05$, but a positive effect for students without disabilities, $\beta = .11$, $p < .05$.

The interaction scores for the second regression model also show a significant contribution to academic success, F (8, 1810) = 2.01, $p < .05$. As for college adjustment, this contribution is due to just one interaction term: exposure in the third wave, $t = -2.95$ $p < .005$. Again, we found a negative effect of exposure on academic success for students with disabilities, $\beta = -.12$, $p < .01$, but positive for students without disabilities, $\beta = .08$, $p < .05$.

Discussion

The main objective of this study was to examine changes in perceived stress and coping strategies in college students with and without disabilities from the first to the third wave of the COVID-19 pandemic. In addition, we wanted to determine predictive associations between these indicators and students' academic functioning (i.e., college adjustment and academic success after two years of college and a year and half of the pandemic). We also aimed to verify whether disability status would influence the changes in perceived stress and coping strategies and their effects on academic functioning. Taking all of our results together, our study shows that all students are at risk over the course of the pandemic for increases in stress and maladaptive coping strategies, with students *without* disabilities being disproportionately disadvantaged. Stress and maladaptive coping strategies were associated with lower rates of academic achievement among all students, with no differences across disability status.

Changes in Stress and Coping During the COVID-19 Pandemic

Our first objective was to examine changes in exposure to COVID-19, perceived stress, coping strategies in college students over the course of the pandemic among all students and to investigate if these trends differed across disability status. First, we found, as one would expect, that exposure to COVID-19 increased over time, and this trend was consistent across disability status. This increase in exposure parallels the increases in cases of COVID-19 and suggests that those with disabilities were not disproportionately exposed to the virus. This is encouraging as a meta-analysis suggested that people with disabilities were at increased risk of COVID-19 related mortality, especially those with intellectual disabilities (Kuper & Smythe, 2023), and other research has shown that increases in fear of COVID-19 contagion and contamination are associated with increased levels of stress and negative affect among college students (Iskender et al., 2022). Next, in terms of stress and coping, we found multiple results indicated that students *without* disabilities were actually at greater risk than those *with* disabilities. This overall finding could be related to the prevalence of mental health disabilities in our sample and converges with research showing anxiety and depression rose among young adults in over the course of the pandemic, but only among youth experiencing no problems prior to the pandemic (Hamza et al., 2021; Watkins-Martin et al., 2021). These findings appear to diverge with cross-sectional research that found students with disabilities faced higher levels of stress related to the pandemic at large and within the academic context specifically (Conder et al., 2023).

Use of proactive and defensive coping strategies followed a similar pattern as did stress, which aligns with Lazarus and Folkman's (1984) transactional model of stress (see also, Biggs et al., 2017). We found that proactive coping decreased over time for everyone, with a slightly stronger effect among students without disabilities. Similarly, we found that substance use, a defensive coping strategy, increased over time for all students and even more so for those without disabilities. Findings regarding substance use diverge with findings from Breaux et al. (2021) who found that youth with ADHD diagnoses prior to the pandemic resorted to substance use as a coping mechanism at higher rates than those without the diagnosis. One possible explanation as to why those with disabilities were faring better than those without could lie in levels of resiliency established pre-pandemic. Students with disabilities were already habituated to dealing with higher levels of stress pre-pandemic and have elaborated effective coping mechanisms. For instance, qualitative research carried out among students with disabilities in the pandemic context painted a portrait of resilience, with over 80% of students citing capacities of self-determination. Themes of positive adaptability, increased social awareness and sense of identity also emerged (Toste et al., 2021).

However, even if students without disabilities fared worse in terms of increases in stress and maladaptive coping strategies in comparison to those with disabilities, our results also highlight that *all* students had worse stress and coping over the course of the pandemic, putting the entire student body more at risk. These findings support the hypothesis of *amplification,* or *pandemic fatigue* (AlHadi & Alhuwaydi, 2023; Laher et al., 2021) and go against the through a process of *habituation* or *desensitization*, wherein prolonged exposure to stress is associated with a decrease in response (Yang et al., 2021). This is particularly important and worrisome given the well-known negative effect of chronic stress on mental health, cognitive functioning, and physical health, including immune responses (Marin et al., 2011; McEwen, 2017). Others have highlighted that chronic stress is often a precursor to maladaptive coping strategies (Biggs et al., 2017), emphasizing the need to monitor college students' coping strategies when they are faced with prolonged stress, such as that associated with the COVID-19 pandemic.

Predictive Associations Between COVID-19-Related Factors and Academic Outcomes

In the next set of results, we examined the role of exposure to COVID-19, stress and coping strategies in association with academic outcomes and how these associations could differ according to disability status. Surprisingly, we found that higher rates of exposure to COVID-19 had a positive effect on adjustment outcomes among students without disabilities, whereas higher rates of exposure had a negative effect on adjustment outcomes among students with disabilities. These results may best be explained by factors not involved in our study, such as how students with disabilities react to possible contagion (e.g. isolation, fear) in comparison to those without disabilities. Alternatively, the results could be explained by confounding factors or statistical error as the effects were very small ($b < 0.2$). Further research would be necessary to clarify the meaning of these results.

In regard to stress and coping strategies, we did not find any differences across disability status in association with academic outcomes. The lack of differences across disability status diverges with the findings of Zawadka et al. (2021) which showed lower academic achievement among students with learning disabilities, but the discrepancy could be explained by the relativity low prevalence of learning disabilities in our sample. Instead our analyses indicated that, regardless of disability status, pre-pandemic academic factors (e.g., college adjustment and high school GPA) were the strongest predictors of college adjustment and academic success in the Spring of 2021. However, once having adjusted for initial academic functioning, perceived stress and coping strategies (proactive and defensive) were predictive of academic functioning in college. Students who perceived less pandemic-related stress and used more proactive strategies during the first and third waves (e.g., spending quality time with family, seeking information about the pandemic, and overcoming challenges) were better adjusted in college and reported better grades. In contrast, students who experienced greater stress and relied more on defensive strategies (e.g., denial, alcohol and drug use, or online gaming) were less well-adjusted and reported lower grades. These findings suggest that students' subjective assessments of pandemic-related events were more closely associated with their academic functioning than direct or indirect exposure to the COVID-19 virus. This aligns with the transactional theory of stress and coping by Lazarus and Folkman (1984; see also Biggs et al., 2017), which posits that individuals who feel threatened by stressful events and negatively appraise their resources tend to use defensive coping strategies, impairing personal functioning. Thus, coping strategies, particularly proactive coping, played a significant role in fostering better academic adjustment and success, within a context of increased stress associated with the pandemic context.

Study Strengths and Limitations

The strengths of this study include the longitudinal design, multiple assessment times (before and during the first and third pandemic waves), the large sample size, and the low attrition rate between measurement times. These attributes enabled more precise inferences compared to previous correlational studies of the pandemic's effects on stress, coping strategies, and academic functioning in students. In addition, comparative analysis according to disability status enhances the social relevance of this study in a context where many college stakeholders support the hypothesis of increasing vulnerabilities.

Nevertheless, this study also presents some limitations. The first concerns the exclusive use of self-report measures, including self-reported GPA, which raises the possibility of incidental covariation and biases such as social desirability. It would be advisable in future studies to include physiological data to determine students' experiences of stress as well as institutional data (e.g., academic delays, university enrollment and graduation) to document learning trajectories. Professor and peer assessments could also offset bias associated with self-reported measures. Second, as with all longitudinal studies, there was some attrition. Given that the evaluations occurred during the COVID-19 pandemic, higher rates of participant drop-off were expected. However, our attrition rates were consistent with those reported in another longitudinal study conducted during this period in young adult populations in Canada (see Watkins-Martin et al., 2021), which suggests that the level of attrition observed in our study was within an acceptable range for research conducted under pandemic conditions. A third limitation concerns the ability to capture the true pandemic experience. The pandemic experience comprises multiple aspects besides exposure to the virus, the disease itself, and related stress. For example, studies could consider the effects of job loss or change, the variable quality of distance learning and service provision modes, family and food insecurity, physical and social isolation, unpredictable vaccine accessibility, and inconsistent compliance with sanitary measures. Moreover, the ability to cope with these complex realities differs across individuals. Future studies could differentiate between the experience profiles of professionals, students, and families over the course of the pandemic to better capture the effects of the pandemic on students' academic functioning. Lastly, our study may have been less accessible or appealing to students with specific types of disabilities, such as visual impairments. This limitation could potentially obscure the representativeness of our sample of students with disabilities. Moving forward, it is essential to enhance our dissemination efforts to ensure inclusivity for students with all types of disabilities.

Implications for Research and Intervention

The increasing stress felt by students from the first to third pandemic wave, the greater use of negative coping strategies, and the detrimental effects of these changes on their academic functioning provide significant input for future research and intervention efforts. One fruitful avenue would be to gain a deeper understanding of the seeds of these changes. This study identifies the pandemic as an explanatory factor for certain changes, but a pandemic has multiple facets. For example, studies could examine associations between observed changes on the one hand, and on the other hand perceptions of the sanitary measures, vaccines, governmental and institutional messages, distance learning and service modes, and the realities of work and family life. Latent profile analysis could be used to better describe individual students' experiences of the pandemic and associate them with changes in stress. These determinants should also be assessed at various stages of the pandemic so as to identify the main sources of stress and key times of change. A second avenue would be to continue monitoring stress and coping strategies across successive pandemic waves. Should student stress levels continue to rise and coping strategies continue to deteriorate, we must think seriously about universal preventive measures and reconsider communication approaches between governments, institutions, and higher education students.

Our results suggest that subjective appraisals of the pandemic play a more predominant role than exposure to the disease in determining academic functioning problems. Accordingly, both the form and content of public messages and institutional communications should be carefully considered to prevent needless anxiety. Of course, the persistent governmental press conferences and institutional memos helped raise awareness of COVID-19 and its dangers and guided the public to respond appropriately. At the same time, the onslaught of at times conflicting information could have made students feel stressed and powerless. These public messages should be scrupulously weighed for relevance, mobilizing effectiveness, and anxiety-provoking potential.

Our results open up new perspectives for college and university actors to improve teaching and service provision models that promote resilience, and to work to remove the institutional and personal barriers that sometimes contribute to increasing the stress of students with disabilities. The negative attitudes of some teachers, professionals or peers (stigma and discrimination) towards students with disabilities and accommodations, the sometimes difficult access to adapted resources, or to assistive technology and online classrooms (or the lack of awareness of these resources by students with disabilities), the lack of self-advocacy and awareness skills, and the low prevalence of inclusive pedagogical practices are all barriers well identified by research that should continue (Lindsay et al., 2018; Beaulieu et al., 2022).

Finally, our findings have three direct implications for disability resource officers. First, it would be important to offer disability students, but also all students, workshops on proactive stress management strategies to enable them to better cope with unpredictable events. These workshops could focus on rational beliefs, appropriate causal attributions, healthy lifestyle habits, and study strategies. For example, there is initial evidence for the efficacy of mindfulness workshops in reducing stress in students and improving their coping strategies (Madigan et al., 2024). Second, it would be appropriate for disability resource officers to communicate regularly with their students in times of stress, especially those who are most vulnerable. Reassuring them on a day-to-day basis by identifying situations and behaviors over which they can control could be a positive strategy for adjusting their perceptions of stressful events. Third, if other pandemics arise, it may be relevant for disability resource officers to act as mediator agents between public health and disability students and provide them with evidence-based information on pandemic facts and prevention measures (e.g., hygiene measures, vaccines).

This study shows that college students experienced increased stress from the first to third wave of the COVID-19 pandemic while their coping strategies deteriorated, and these changes impeded their academic functioning. Future studies should monitor further changes in stress and coping strategies over the course of the pandemic to better understand the determinants at play. Preventive interventions should be prioritized, and particularly those designed to reduce the anxiety-provoking effects of media coverage and sanitary measures.

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Nebila Jean-Claude Bationo was a Ph.D. in Education and professional researcher at Laval University who passed away on August 31, 2025, at the age of 44. He made a significant contribution to the ESH-Transition project, assuming leadership roles in data collection, analysis, and communication with our collaborators. Above all, he was a person with strong values of respect, integrity, and sharing.

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Acknowledgements

In memoriam to Nebila Jean-Claude Bationo who passed away on August 31, 2025, at the age of 44

The results presented in this article come from a research project on the college transition of disability students. This project was largely funded by the Action concertée sur la Réussite et Persévérance scolaire from the Fonds Québécois de Recherche Société et Culture (2019-PZ-264654). Additional funds have been granted by the Human Sciences Research Council (1008-2020-0037) and the Quebec Ministry of Health and Social Services (20-CR-00102). Thank you to the ten Quebec colleges (Sainte-Foy, Garneau, Limoilou, Mérici, Maisonneuve, St-Laurent, Bois-de-Boulogne, Marie-Victorin, Ste-Hyacinthe and Sherbrooke) who contributed to the data collection.

Lessons Learned from the COVID-19 Experiences of Autistic University Students: Informing the Future of Higher Education

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Abstract

Autistic university students experienced abrupt changes to course delivery and support services during COVID-19. The loss of structure greatly impacted their need for consistent reliable structures and predictable learning environments. In this qualitative narrative case study, we used self-determination theory to examine the experiences of four university students with autism prior to and during the pandemic. The theoretical constructs provided insights into the consequential beliefs, experiences, and actions necessary to satisfy the need for autonomy, competence, and relatedness. Accessibility and support emerged as another component for success. Recommendations are made for higher education administrators and disability service providers to aid in changing the mindset about the future of higher education enterprise for autistic and neurodivergent university students.

Keywords: autism, higher education administrators, disability service providers, self-determination theory, student voice, narrative case study

The COVID-19 pandemic significantly impacted the emotional and psychological well-being of autistic individuals. Sudden enforced closure or lockdown of non-essential services, social distancing, quarantining, and use of personal protection equipment to curtail the spread of the virus had adverse secondary effects for autistic individuals (Spain et al., 2021). Abrupt environmental changes and major disruption of activities, along with reduced access or loss of service provisions and social networks, resulted in a great sense of uncertainty that affected their routine lifestyle (Ameis et al., 2020; Cahapay, 2020; Spain et al., 2021). The crisis brought on by the pandemic put a greater strain on the existing deficient support systems to meet the needs of autism communities.

The sudden shift to online learning and increased use of remote education was particularly difficult for this population (Ballantine et al. 2023; Monahan et al., 2021). For example, autistic students experienced a higher risk of challenges with the abrupt changes to course delivery, mentorship, and support services. This loss of structure greatly impacted their heavy reliance on consistent schedules and predictable environments (Colizzi et al., 2020). Most autistic individuals are clinically diagnosed with comorbidities such as anxiety, stress, and depression. Having to cope with the consequences of the pandemic such as isolation and loneliness (Hollocks et al., 2019) spiraled into increased psychiatric conditions for some (Vasa et al., 2021).

Increasing numbers of autistic students have been enrolling in institutions of higher education (Nachman et al., 2021). Several universities created or expanded programs to support the strengths and needs of students with autism to facilitate their success (Cox et al., 2021; Nachman et al., 2021). With over a year of remote and online learning (between 2020 and 2022), university administrators reopened campuses and resumed traditional face-to-face or hybrid classes. Because of autistic individuals' insistence on sameness and rigid routine lifestyle, dealing with the uncertainty caused by changes in routines and the back-and-forth shift between face-to-face, online, and hybrid class formats was uniquely challenging for autistic university students (Ballantine et al., 2023). Therefore, understanding their experiences during the crisis is important.

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The purpose of this study was to examine the experiences of autistic university students prior to and during the COVID-19 pandemic. The following research question guided the study: What were the experiences of autistic university students prior to and during COVID-19, as told from their perspective? In the following sections, the theoretical framework, research method, findings, discussion, and conclusions are detailed.

Overview of the Literature

There is an increase in the number of autistic students in university enrollment. According to estimates, over 400,000 (2%) U.S. college students have autism, and that number is steadily increasing (Autism Goes to College, n.d.). The numbers could be higher but some students may prefer not to disclose that they are autistic (Knott & Taylor, 2014). Generally, autistic students take a longer time to meet the requirements when compared to neurotypical students. Some of the challenges encountered include, "transition planning, disclosure, life on campus, social relationships, self-awareness, self-advocacy, appropriate support, and executive skills…and they are at an increased risk of comorbidity, and personal and academic failure" (Bakker et al., 2019, para. 2). They also have a higher dropout rate when compared with their non-autistic peers (Cage et al., 2020). Autistic students who are university drop-outs generally have poorer academic experience, lack a sense of identity and belongingness in the social and organizational culture (Cage et al., 2020), or experience autism burnout while trying to cope with the demands of classes and campus life (Cage & McManemy, 2022).

Prior to COVID-19, research pertaining to how to provide support systems for autistic college students to help them be successful was sparse and exploratory in nature; however, suitable accommodations and recommendations in support of postsecondary education are proposed in the literature (Pinder-Amaker, 2014). Training on the Universal Design for Learning (UDL) approach has been recommended for university educators to enhance and support learning for autistic students (Anderson, 2020; Bublitz et al., 2015). UDL, built on neuroscience research, is a comprehensive framework that provides support for teachers to address students' diverse learning preferences (Rose & Meyer, 2002). This learning framework is built on three primary principles that guide educators to support all learners by providing multiple representations of course content, different approaches for students to express their knowledge, and a variety of ways to engage students through the learning process (Carrington et al., 2020). The teaching strategies aligned with UDL benefit not only autistic students but a diverse range of students (Waisman et al., 2023). To create a more inclusive learning atmosphere, Anderson (2020) suggested the use of UDL approaches in an online learning environment for autistic university students. However, further research still needs to be done to determine how to use UDL frameworks in the online classroom for autistic students. Researchers have recommended that academic support systems that enable autistic university students to be successful in their academic pursuits be put in place; however, supports that address the social and emotional domains applicable to this student population have gained less attention (Gelbar et al., 2015).

There was little to no empirical literature on the impact of the pandemic on university autistic students' learning experiences at the time this study was conducted. Cassidy et al. (2020) expressed concerns about the impact of the virus and the need to isolate, considering the rapid adjustments that had to be made for students. These concerns hold true especially for autistic individuals who face extreme difficulties managing sudden changes (Pellicano, 2010).

One of the big changes that autistic students faced was the format of instruction from the traditional face-to-face format to remote and online learning. Madaus et al. (2022) examined the experiences of 31 autistic university students, focusing on their perspectives of the benefits and challenges they encountered when they were forced to shift to remote learning. Areas that raised concern included the "the structure and infrastructure of course delivery, environmental factors, social factors, and personal factors" (p. 37). Having a more convenient schedule was a benefit of the change in instructional modality brought on by COVID-19, while challenges included the nuances of taking online courses and learning remotely as well as fewer opportunities to interact with the instructors.

Cage and McManemy (2022) compared the experiences of autistic and non-autistic university students with a focus on mental health, burnout, coping during the pandemic, and considerations of dropping out of school. Students from both groups reported having to adjust to online classes as a challenge along with low psychological well-being and a negative outlook on their social life. However, autistic students reported higher rates of burnout, mental health symptoms, and thoughts of dropping out.

Ballantine et al. (2023) interviewed eight autistic university students during the pandemic and discovered that a combination of individual, interactional, and environmental factors determined the quality of their learning experiences. Each student's academic and learning preferences were so unique that individualized support was needed. Further, Ballantine and colleagues (2023) found that autistic students expressed the need for increased autism awareness and education for their neurotypical instructors, teaching assistants, and peers to learn about their learning preferences and to know how to improve their interactions with them.

Major modifications were made to make learning more accessible to all students during the pandemic. However, once the crisis subsided, the changes were reversed to the traditional instructional formats. In a focus group interview study of 12 college students with disabilities, Owenz et al. (2024) sought to understand their experiences with institutional changes during COVID-19. The findings indicated that students felt more supported when classes were offered remotely and were more accessible when compared with traditional in-person classes offered prior to and after the crisis. Students also reported difficulty accessing university support systems. Overall, they felt a sense of "institutional betrayal" with changing university policies that seemingly accounted only for their neurotypical peers. Considering autistic students' social and communication challenges, it is important to understand how to improve their university experiences. In the following section, we provide details on Self Determination Theory as a framework for this study.

Self Determination Theory

Self Determination Theory (SDT), a theory of motivation proposed by Deci and Ryan (2008), incorporates a set of three psychological needs: autonomy, competence, and relatedness. Each of the three psychological needs are considered to be basic, universal, and fundamental to individuals' lives (Deci & Ryan, 2008; Deci et al., 1991; Ryan & Deci, 2022). SDT is based on the assumption that individuals will actively engage in an innate and internal search for personal and psychological well-being and growth (Deci & Ryan, 1985; Ryan & Deci, 2022; Ryan & Vansteenkiste, 2023). The individual's search for personal and psychological well-being and growth is determined by the extent to which the three basic psychological needs of autonomy, competence, and relatedness are met, and the realization of each of these needs is essential for optimal functioning in one's immediate environment (Ryan & Deci, 2000b; Ryan & Deci, 2022; Ryan & Vansteenkiste, 2023).

Autonomy, the most critical component for self-determination to be achieved, is described as having a sense of self-regulation and self-control over the events of one's life (Deci et al., 1991; Ryan & Deci, 2022; Ryan & Vansteenkiste, 2023). Without autonomy, individuals are often subjected to controlling forces (Deci & Ryan, 1991). Individuals must decide on their own volition to act or change, based on their own reasons and values, as opposed to being asked to change by others, which can manifest as being pressured or manipulated (Ryan et al., 2011). Thus, when the individual recognizes the need for change, they will more likely be able to experience success in their efforts to bring about such a change. Methods used to support autonomy typically advance or encourage the use of "voice, initiative, and choice" and "minimize the use of controls, contingencies, or authority as motivators" (Ryan et al., 2011, p. 230).

In addition to autonomy, individuals must possess a sense of competence, which involves a confidence and belief in one's ability and capacity to change or affect certain outcomes. To achieve a sense of competence, the individual must be able to master certain tasks and learn certain skills. When "competence-or control-related barriers emerge" (Ryan et al., 2011, p. 231), individuals may need to receive support and assistance through "relevant input, feedback, and structure" (Ryan et al., 2011, p. 231). In conjunction with autonomy, once individuals realize the need for change and are willing to change, they need to believe they have the skills needed to succeed. Thus, they are more likely to adopt or apply the strategies and competencies they believe they have mastered or have identified as beneficial to achieve their goals before they are motivated to take certain actions.

Relatedness refers to the need to be connected with others and calls for relational support where individuals perceive they are regarded positively and unconditionally by others and can be fully involved in a particular process or activity. Before any significant level of trust and connection can be achieved, the individual must feel a genuine "sense of being respected, understood and cared for" by others (Ryan et al., 2011, p. 231). Supportive conditions that allow individuals to develop their sense of autonomy, competence, and relatedness must be present before they can effectively address any types of disruptive or non-supportive forces that may exist within their individual environment.

Providing opportunities to meet one or more of these three basic needs motivates individuals to take specific actions to satisfy those needs. SDT provides a useful lens of analysis for examining environmental and social factors or events that may prove to be "antagonistic" (Ryan & Deci, 2000a, p. 69) to one's desire or ability to achieve or excel. Ryan and Deci (2000a) proposed a continuum of self-determination resulting in various levels of motivation to achieve. They located a lack of motivation on one end of the continuum, moving through various levels of extrinsic motivation that may exist, and extending to various levels of intrinsic motivation, located on the opposite side of the continuum. A lack of motivation can take place when compliance-oriented controls such as alienation, subordination, subjection, or coercion exist, causing individuals to simply go through the motions to complete a task or activity. On the other hand, individuals are more likely to be intrinsically motivated and experience enjoyment and satisfaction when they are given the opportunity to take autonomous action, engage in self-determined behavior, and pursue a goal in which they are interested.

On both a systems and individual level, SDT has the potential to explain why a person might become engaged and how one's environment may push or restrain that individual to be self-determined in their advocacy. In this case study, SDT was particularly useful for examining the existence or deprival of support for autonomy, competency, and relatedness and analyzing the ways in which autistic university students attempted to navigate their educational experience prior to and during the pandemic as told from their perspective. Their experiences and insights can inform and facilitate higher education administrators' and disability service providers' understanding of the specific challenges and successes autistic students previously encountered. Lessons learned from the study can also be used to determine the potential adjustments or changes that administrators or service providers might make when developing plans for future potential crises should transitioning from on-campus classes and normal operations of disability services reoccur. Since few studies have taken the time to listen to the voices of autistic students prior to the development of such plans in terms of meeting their psychological needs and wellbeing and being able to achieve optimal functioning in their environment, addressing the components of autonomy, competence, and relatedness of SDT provides an alternative perspective for consideration.

Research Method

For this study, we chose a qualitative narrative case study research design and approach. We provide a description of the research design, data collection and participants, and data analysis process.

Research Design

Although both researchers and participants served as "co-creators in the knowledge-building process" (Hesse-Biber, 2017, p. 7), the participants' experiences and perspectives are emphasized. Their narratives were reproduced and analyzed using an interpretive inquiry approach (Merriam, 2009). An interpretive lens was used to gain a deep understanding of the participants' social contexts as told from their perspective: in this case, the pandemic as experienced by autistic university students. A case study covers a specific period of space and time to gain an understanding of a particular case based on the views of those involved (Stake, 2005). We used a narrative case study approach to gain an understanding of university students' experiences during the pandemic. When telling the narrative, an in-depth description of the context in which the case is located is a vital component (Hesse-Biber, 2017).

Typically, the researcher collects data by listening to the stories of a single individual or two to four individuals who talk about a significant issue in accord with their individual experiences within a specific context, place, or situation (Creswell & Poth, 2018). In narrative reviews, interviews serve as the primary source of data. For this narrative case study, we captured the COVID-19 stories/experiences of four autistic university students using semi-structured interviews.

Institutional Context

From January through February 2020, the university was fully operational, conducting in-person, online, and hybrid classes. At the end of the first full week of March 2020, students left the university for their week-long spring break. During the week of spring break, the university president announced the university would cancel all in-person classes the week following spring break to allow for transition to online and alternative instructional delivery options. Instruction would resume for all classes the fourth week of March 2020. The president assured the university community that regular updates would be provided regarding the university's response and preparedness to meet the challenges posed by COVID-19. One week later, the state governor issued executive orders to limit public gatherings to comply with federal guidelines issued by the U.S. President and Centers for Disease Control and Prevention (CDC) to aid in the state's efforts to stop the spread of COVID-19. The university remained closed for in-person classes for more than an academic year.

Prior to COVID-19, the university housed support offices responsible for neurodiversity initiatives with the aim to improve the quality of life for neurodivergent students. During the closure, these offices organized and implemented social activities online to enhance student growth and emotional well-being for students.

Our goal in conducting this study was to develop a practical understanding of students' university experiences prior to when the university closed from spring break of 2020 through the summer of 2021. The university reopened in the fall of 2021 with precautionary measures, although the pandemic was still in force. We sought to illustrate, support, and interpret the participants' accounts of their experiences in the context of the decisions made by those in charge at the university, the implementation and outcomes of those decisions, and the effects their decisions had on autistic students.

Researcher Positionality

As a human resource development professional and researcher, the first author examines ways to help autistic young adults transition to the workplace and investigates various organization development interventions, including training/learning, mentoring, coaching, and leadership to improve their work experiences and work outcomes to increase job satisfaction and retention. She became interested in research related to autism due to her work with autistic individuals and realization of the need for autism research in work settings. The second author is a former high school principal and special education teacher and educational leadership and disability studies researcher who identifies as neurodivergent. She embraces an asset-based approach to working with disabled and nondisabled populations in educational settings and investigates the perspectives of individuals relevant to how certain policies and practices impact their educational and life experiences.

While conducting the research, we made every attempt to renounce any assumptions we had about the outcome of the study to present an unbiased perspective. We used our platforms as academic researchers to give voice to autistic university students to share their stories and experiences of the changes that occurred because of the pandemic.

Data Collection

Purposive sampling was used to recruit a small sample size of a targeted population of participants with specific knowledge and an understanding of the topic being studied (Orcher, 2016). The targeted population for this study was undergraduate and graduate students with a diagnosis of Autism Spectrum Disorder (ASD) who were enrolled in classes during the period of COVID-19 at a public research university located in the southwestern U.S. with a student population of approximately 40,000 students.

To recruit participants, we emailed the directors for two university offices responsible for neurodivergent initiatives to reach autistic students. The directors forwarded the invitation to participate in the study to students on their mailing list. Prospective participants were emailed once per week over a two-month period; however, only four students agreed to participate in the study despite several attempts to reach students. Participants included one undergraduate student, one master's student, and two doctoral students. Each of the students (a) attended the university prior to the decision to close the university for COVID-19, and experienced the pause of traditional face-to-face learning opportunities and the decision to require students to attend classes that were fully online; (b) enrolled in online classes between spring 2020 and summer 2021 when the university remained closed; and (c) enrolled in a mix of face-to-face, hybrid, and online classes in fall 2021 when the university reopened.

We conducted a semi-structured interview with each participant using the Zoom video conferencing tool. The semi-structured interview format provided the flexibility to start with a set of guiding questions yet allowed us the opportunity to probe more deeply into their responses to unearth additional data and insights into their thinking and description of experiences. The interview guide was divided into four sections with the opportunity for students to take a break prior to answering questions in the next section. The first set of questions asked the participants to think about and answer questions related to how they experienced their classes, peer and professor relationships, experiences outside of class and on campus, and the types of support they received from the disability services office and other offices at the university. The second set of questions asked them to describe their experiences when COVID-19 started and the university shut down, especially in light of pausing face-to-face classes and moving all classes to an online format. The third set of questions asked participants to talk about how they were experiencing their classes after the university reopened and returned to face-to-face classes, describe their peer and professor relationships and experiences outside of class and on campus, and share about whether they were experiencing different types of support from the disability services office and other university offices after they returned. The fourth set of questions asked participants to share any suggestions they had for improving the experiences and support provided for autistic students as well as anything else they wanted to add relevant to their experiences at the university. The interview guide was sent to the participants prior to the interviews to allow time for participants to prepare their responses. The interviews were conducted over a one-month timeframe and ranged from 45-60 minutes.

Data Analysis

We used both inductive and deductive approaches to analyze the data and establish patterns or themes. An inductive analysis is used when there is a lack of research on the phenomenon (Huberman & Miles, 2002). Since previously conducted research on the pandemic and its impact on autistic university students was limited (Ballantine et al., 2023), our study necessitated the use of an inductive approach. Because we used the self-determination theory to interpret the participants' experiences prior to and during the pandemic (Elo & Kyngäs, 2008), a deductive analysis was also appropriate for our study.

To gain an overall sense of what was going on, we conducted a primary exploratory analysis of the data (Plano Clark & Creswell, 2015) by (a) reading through the transcriptions of the interview recordings with participants, (b) creating analytic memos of our ideas in the margins of the transcripts and field notes; and (c) reflecting on the specific order and organization of the data. The data were coded by the two researchers and one research assistant. In our initial analysis, we coded the interview transcripts separately, then met to discuss our initial codes and identified themes within the components of self-determination theory as well as additional themes. We reached consensus on the themes after several iterations.

Trustworthiness

To strengthen the accuracy and credibility of the research findings, we used the validation strategy of data validation. Transcripts were sent to all participants who were invited to clarify, correct, change, or add to the transcript. No changes to the transcripts were offered. Including multiple coders during the data analysis process also helped to ensure accuracy and consistency of the themes that were generated. As researchers, we were careful to set aside our personal assumptions and biases and focused on our commitment to respect the integrity of the participants' narratives and honor the voices and perspectives of those who are often "silenced, excluded, marginalized, expunged" (Smyth & McInerney, 2013, p. 2) or denied the opportunity and space to enter their voices into previous discussions about their educational experiences.

Participant Profiles

Participants were asked to write their own profile in response to several prompting questions, with the flexibility provided for them to offer additional details about themselves during the interview to enrich our understanding of each participant in the study. Pseudonyms are used to maintain confidentiality and anonymity of the respondents.

Anna. Anna, a White female, was diagnosed with autism at the age of 51 years prior to pursuing her Ph.D. in educational leadership. Anna admitted that she utilized the office of disability services to identify herself and gain certain accommodations to protect her from situations in classes that she encountered with her classmates and certain professors who thought she was being disrespectful in her comments to others in class. Prior to pursuing her Ph.D., Anna worked for 14 years in the K-12 public school system as a teacher and administrator and then started teaching classes at a local community college. Anna was in the final year of the doctoral program, completing her doctoral dissertation study. After obtaining her degree, Anna intends to continue conducting research, advocating on behalf of students with autism, and plans on developing a support program for these and other students with disabilities at the community college level.

Micah. Micah, a White male of 46 years, was diagnosed with autism at 41 years of age, three months after his son was diagnosed with autism. After Micah received his diagnosis, he admitted, "It all made sense," and that being diagnosed earlier and having accommodations as an undergraduate student of nine years "would have been helpful." He is pursuing his doctoral degree in learning technologies. At the time this study was conducted, Micah was in the final year of taking classes in the doctoral program and developing next steps to complete his dissertation study. Micah plans to pursue a career as an education advocate for equity, relevant to educational and instructional technology, on behalf of nontraditional learners.

Angela. Angela, a 25-year-old African American female, was diagnosed with autism at the age of 24. She acknowledged, "It's not been that long, but I knew that something was, for lack of better words, different up there for a very long time." While she originally pursued a diagnosis for attention deficit hyperactivity disorder (ADHD), she was diagnosed instead with autism. She took classes at the university prior to, during, and after the COVID-19 pandemic and had recently graduated with a major in social work. Angela was serving as a licensed master social worker with the office of diversity and inclusion. She aspires to be a telehealth therapist and hopes to dedicate additional time to art as an avocation.

Emily. Emily, a White female of 22 years, was diagnosed with autism at the age of 20. She admitted, however, that she suspected there was something different about her throughout her elementary and secondary school years. In her interview, she noted she was already diagnosed with a learning disability. However, she knew there was something else that she did not understand: "I didn't understand why [there were] certain noises and certain lights I couldn't handle or why I didn't understand social situations." Prior to high school, she attended a parochial school that "didn't have any kind of testing." Her parents refused to allow her to be tested, despite her high school teachers telling her she was "acting different" and "was not like a typical person." When she got to college and visited a psychologist "for a different reason" she was diagnosed with autism which she "always knew." She was finishing her senior year, pursuing an undergraduate degree in integrated studies. Emily noted the existence of other neurodevelopmental disabilities in her life and, as a result of her experiences, wanted to become a special education teacher.

Findings

The three components of the self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2022) as well as a fourth theme, accessibility and support, were used to organize the findings. The four themes are supported by the participants' direct quotes to paint a picture of their perspectives, impressions, and beliefs (Smyth & McInerney, 2013).

Belonging and Relatedness

Belonging and relatedness characterized the lives of each student prior to and during the pandemic. Overall, respondents shared experiences of continuous challenges and struggles with classroom situations in which they felt they were othered by and from their classmates, which often resulted in anxiety around socializing. Throughout the interviews, participants mentioned having difficulty connecting with their classmates even before the COVID-19 pandemic. One participant, Emily, stated, "My only fear was being seen as different by classmates, which I often was." This fear of being seen or treated differently by peers was echoed by other participants, including Anna, who expressed difficulty connecting with others in class due to the "high-stress" nature of attending class. Anna also mentioned a specific instance of being the only individual excluded from a class-wide group chat and how it affected her sense of belonging:

> It is sometimes difficult for me to bond well with other people and going to class was an extremely high stress activity. One time everybody made a group chat and didn't include me in it and I found out…there was a bunch of hysterical crying on the way home.

As she progressed through her program, Anna "found a couple of students who seemed to appreciate what I had to say" and complimented her due to the "detailed thoroughness" of her assignments. They worked "together as partners" on assignments, and she was "keeping in touch with them now," representing a long-sought reprieve from being excluded by her cohort.

Three of the four participants mentioned a level of social anxiety while being around others prior to COVID-19. Micah sometimes struggled to express himself when interacting with others, clamming up and finding himself unable to speak. He shared, "Nothing comes out at all. And so, of course, because nothing is happening, the anxiety and the panic sets in." Anna cited the opposite problem, where she struggled with discussing topics that were uninteresting to whomever she was speaking with. She became an "outsider" when she "talk[ed] to people as if they were as passionate about [her interests], and then they were not." Angela shared that socializing in-person was difficult because she "wasn't an entirely sociable person" and "being on the spectrum" she had a "hard time forming relationships and friendships." Yet, it was something she was able to do since it was a crucial part of her program. On the other hand, Angela admitted that she was ""really close" to her professors because she was one of the students who "was always asking questions" and was more sociable with students in her internship class due to the smaller class size and the fact that she "knew everyone in the class."

The participants' sentiments regarding feelings of belonging and relatedness were fairly split during the height of the COVID-19 pandemic when classes were offered online. Anna and Angela experienced relief from their anxiety and improved communication with peers during the pandemic when classes were offered fully online. For example, Anna mentioned that her social filter seemed to improve in online forum discussions, chat tools, and Zoom calls. Specifically, Anna said, "Apparently, the filter between my mouth and my brain is a different filter between my fingers that type and my brain." She continued to explain:

> I think the filter that goes between my mouth and my brain is not there; the way they are for everyone else. I don't recognize nonverbal communication the way I wish I did, so I become very passionate about saying something…then I become sort of an outsider when they realize that "oh she is one of those people."

Angela also had a slightly more positive experience socializing during the COVID-19 pandemic, as she was able to spend more time socially with her sister and did not have to deal with the anxiety of contracting COVID-19 when talking with her friends. Emily kept in touch well with her peers through Zoom peer support groups and texting, but she cited some discomfort with being online for classes because "on Zoom it's hard because you're afraid of accidentally interrupting someone," which contributed to her sense of a lack of belonging. Micah indicated that it was difficult to stay in contact with peers because COVID-19 ended in-person work and volunteering. He "fell out of contact with everyone" including those in his cohort and added that it was difficult to stay in contact with people when he was not seeing them, contributing to an "out of sight, out of mind" mentality.

For most participants, the pandemic shifted how they interacted with peers. Emily, Micah, and Anna had fewer positive feelings of belonging and relatedness during COVID, even after the university reopened. Prior to COVID, Emily was able to establish a relationship with one or two peers in traditional face-to-face classes. However, she was not socializing as often with her classmates during the lockdown. She noticed a formation of "cliques" based on established friend groups, making it difficult to establish relationships with her peers, and mostly attended class alone. Prior to the pandemic, Micah was involved in research activities as a graduate assistant, working with faculty and peers. However, he mentioned feeling out of the loop and "very disconnected" as a result of the pandemic. Regarding social situations, he added, "when you are autistic, not socializing isn't the best thing either because you fall out of practice," which can complicate one's ability to communicate and stay in contact with people. On the other hand, Anna echoed this sentiment due to the "severe anxiety" she felt after being isolated from people during COVID and then "coming back to real life" and having to "pick up on the interactions of humanity" and readjust so that she could be a "normal person in society."

Autonomy and Choice

Each participant shared likes and dislikes about how they learned during the COVID-19 pandemic. Going beyond the pandemic, every participant expressed a dire need for more choices for students with autism, specifically with learning modalities. While each student had their own preference, each mentioned how useful it would be to choose from a variety of learning modalities options. For example, Angela said, "students could either do something in person or they could do something online, because there are certainly those who hate online, but there are students who would actually benefit from the accessibility it has." Both Anna and Angela mentioned hybrid classes as a way to help students with autism have autonomy over their experiences. Additionally, Anna and Micah called attention to specific teaching methods and the importance of providing a variety of instructional and assignment options from which students could choose. Anna suggested the use of "multiple methods of instruction" and explained that instructors should "explain it verbally, put it in writing, leave it on video," and allow students to choose what learning techniques worked best for them. Micah offered similar suggestions and imagined the positive effects that allowing students to choose how they wanted to convey what they knew might have on them: "Just think about how much nicer the class would be if the class would just convey the knowledge that they are learning, just in different formats." His specific recommendations included interactive Google Docs and pictures. In his words, students should be able to choose how they demonstrate their learning: "At least have a choice: just because you are not comfortable with a PowerPoint, that student can do something, and you can see it."

Another common thread was providing students with autism control over their learning environments. Specifically, Emily mentioned that providing multiple quiet areas in each building would provide students with more autonomy and choice over the type of environment in which they learned: particularly, one that would help to prevent them from being overstimulated. Angela's call for hybrid classes was partially grounded in this desire to choose her learning space. She mentioned experiencing anxiety over being in-person, both in general and due to COVID-19. The ability to choose the social arrangement and physical placement of her classes helped to reduce her anxiety as well as her commute and lessened her feeling of being overwhelmed with a packed schedule. Rather than having to worry about how to "juggle" all of her classes and go from "one campus "to the "other campus" and "do it all in person all in one week" she could "close out a Zoom window" and get to her "next class in five minutes."

Competence and Belief in One's Ability

All four participants spoke about the challenges they faced when they were asked to return to the university and engage in the type of learning and activities that existed prior to the pandemic when the university closed. Each student encountered various layers of anxiety which, in turn, affected their level of competence and belief in their ability to adjust to the immediate changes to their learning environment.

Anna referred to the two years she spent at home and the automatic assumption on the part of university administrators that autistic people would be able to switch from online to in-person learning and "instantly turn it on and reintegrate" into the traditional learning environment, which was "really difficult" and "making me crazy." She encapsulated her experience accordingly:

> Something terrible happened when the [COVID-19] pandemic hit. All of my structures that I had to live my life that allowed me to function were gone. And now I am supposed to put them back into place, and I don't know how. I am not functioning well.

Angela spoke about having anxiety when having to leave the house or be too far from her home due to cumulative news reports citing large numbers of deaths globally caused by COVID-19 and the potential transmission of COVID-19 through close contact with others. Each of these concerns affected her ability to attend classes and complete her assignments: "Being able to work from the comfort of my apartment—what I knew—and not have to worry about going out to society was very comforting to me." When she had to attend certain classes after the pandemic, she spoke about classes with 20 or more students and the fact that a number of students in her classes did not wear their masks. With the lack of social distancing possible, she experienced a "layer of anxiety and worry" but tried to "put her faith" in the fact that she was wearing her mask and was vaccinated.

Referring back to the times when his mind would go blank, Micah spoke about how the anxiety he experienced would "feed itself" causing him to "freak out and have a panic attack." Several weeks later, he would revisit the assignment and understand what he was supposed to do. He shared, "I would think, 'God, this is easy. What was wrong with me?' I couldn't see it." To make sense of what he was learning and avoid going into a panic attack, he learned to translate the directions and say them out loud to himself. He explained,

> And so, there are a lot of translations. It is weird to have to translate them from English to English, but that is exactly what has to go on in my head. Because if I don't successfully do that, panic sets in.

Because he was able to receive extended time on assignments, this strategy worked. The differentiated experiences were clear:

> Sometimes, I go to write something, and it's like I have never written anything before. Other times, I have gone back and read stuff that I have written, and I don't really remember when I wrote it. Like, "I wrote that? That's crazy." That is part of autism too, the language deficit, being able to pull it out.

Emily participated in numerous activities before COVID hit, one of which included the flag team for the marching band, as well as various neurodiversity initiatives and support programs at the university. She was able to socialize more during those events and, due to the added accommodations and services she received, she was much more at ease when attending classes face-to-face. When they moved to online classes, some of her instructors maintained their lecture formats and assignments were confusing, causing her to be overwhelmed due to the uncertainty from week to week. Students chose to take their classes pass-fail because they "weren't learning anything" by "sitting at a computer." Emily noted that she got easily distracted. Due to auditory issues, she could not understand what people were saying because "all the sounds went together" on Zoom. Being in a classroom worked better for her because her brain told her, "Okay, you're in a classroom; you need to learn." In-person classes enabled her to understand what she was learning since she could "read the cues" from others better than when online. Emily added that she had "bad reading comprehension" and relied on lectures to help her understand what she read, noting that when "there's no lecture, I can't do it, or it's very challenging." Further, when she tried to ask questions, certain students made comments such as "she should already know that" or "why didn't she know this?" or "what's wrong with her"? Fortunately, several classmates suggested that she email her questions to the instructor or set a time to meet and this way she would avoid students making "mean" comments.

Accessibility of Support

In addition to the three components of self-determination theory (Deci & Ryan, 1985), accessibility of support also emerged as a theme. Emily, an undergraduate student, indicated that she believed she received significantly more support from the various university programs than her graduate student counterparts. Emily received accommodations through the office of disability access and was able to participate in and gain access to additional services through the university initiatives designed specifically for neurodiverse students.

All three graduate students interviewed did not receive many services despite their awareness of such programs. Angela and Micah mentioned not receiving the support services they needed during COVID-19 due to everything being online. Angela said she attempted to receive accommodations but found it difficult to get the paperwork sorted because of the virtual process. Micah expressed concern for online students, noting that it would be difficult to duplicate the types of services students received on campus. Similarly, Angela pointed out that university services that were accessible prior to the pandemic, such as food services at the student union and counseling through the health and wellness center, were limited once the university went online. Angela admitted that she did not use as many support services as she should; however, she acknowledged that she was not aware of what existed until she got closer to graduation. Micah shared a similar lack of knowledge about the types of support groups that existed for neurodiverse students, especially for non-traditional students. Micah noted that one cannot assume that autistic people who need assistance will ask for help or, in some cases, they may not even know they need help. He shared how he did not identify the skills he needed ahead of time to complete an assignment; thus, he did not seek them out until "the dam was broken and the water was gushing" and then he had to "try to repair the damage." Anna shared that she initially sought accommodations but stopped the process due to the stigma attached. She indicated that she did not want to "admit, officially, on paper I can't do something like everyone else."

At the same time, Anna admitted that she wished she could talk with a counselor or therapist who "actually knew something about autism in adults" and "people my age." She opined, "You can't really tell colleges, 'Why don't you have that?'" which signals the need to consider what types of support and services might need to be differentiated for people attending the university "in their 30s or above" whether undergraduate or graduate students. Micah shared about the lack of check-ins he received when COVID-19 hit and the university went online, despite knowing his disability status:

> I identify as autistic, the university knows that, but I never got a call. I never even got an email. No one has ever reached out to me and asked if everything is alright. Not even during the crazy beginning of COVID-19.

The only emails he received were the same emails that went out to every student. He clarified that like most people, "autistic people don't want to feel alone" and "want to know that people are noticing what they are doing or that they are there." Due to the lack of connection, he analyzed, questioned, and overthought things and discouragement started setting in. Several barriers encountered by these students receiving the ongoing support they needed highlights an overarching issue in the services provided to students who are online and/or in graduate school.

The availability and accommodation of professors also emerged as crucial in the learning process. Three of the participants mentioned having issues with asking professors questions when online since office hours were held over Zoom. For example, Emily said, "if you have a question, you can go up and ask the question after class, but on Zoom, we couldn't do that because the Zoom call would be over." Angela also mentioned having more difficulty chatting one-on-one with professors in an online setting. Micah spoke about a professor with whom he was conducting a study in a school district that he "was really excited about" and saw "all the time." The project abruptly stopped due to COVID-19, and he "went from seeing him every day to seeing him for only 25 minutes in two years" which represented a dramatic shift and halt to "being able to do anything." However, Anna had positive experiences with her professors and engaged in individual conversations via email.

Participants also mentioned having difficulty with professors providing accommodations or being understanding. Emily said in her experience, professors struggled with applying accommodations online because they did not know how to "put the extended time on certain assignments or quizzes." Prior to COVID-19, other professors were hesitant to provide accommodations or would tell her, "You're in college, you don't need any of this." In another case, the professor called her out and asked, "Why do you learn differently? Why are you so different than anybody else?" When she reported the incident, the professor denied it.

Micah discussed having difficulty with trying to translate the types of accommodations he needed in terms of "different ways to show understanding of content" to his professors. For him, discussion board posts were "a sea of words." He believed the expectations to post and write comments to "get your points" interfered with his style of learning, diverse thinking, and creativity. Anna experienced a similar situation where a professor required students to have a Twitter (now X) conversation, throwing out questions for them to respond to the professor and their peers, an activity that required them to rapidly fire their tweets before the next question appeared. When asked how they liked the assignment, she told him the activity was "outrageously stressful" and she "had to take a Commatin" due to her anxiety. She continued,

> Neurotypical people do not understand people with anxiety or autism or any type of communication difficulty they might have. It causes a lot of stress when you tell me that I am being graded on how fast I am firing my thoughts. You wouldn't do it in class. Why would you think you can do it online?

Discussion

The three components of self-determination theory (SDT), information gained from the students and the need for accessibility and support, and recommendations shared by the students themselves provide valuable information for higher education administrators and disability service providers. In this section, we discuss our findings in relation to previous research and we offer recommendations to improve the learning experience for university autistic students through the lens of SDT. We also make recommendations for university administrators, disability service providers, and academic support systems based on the autistic students' perspectives and experiences.

The SDT framework (Deci & Ryan, 1985; Deci & Ryan, 2008; Deci et al., 1991; Ryan & Deci, 2022; Ryan & Vansteenkiste, 2023) offers a new and unique way to understand autistic students' experiences prior to and during the pandemic. To effectively address disruptive or non-supportive forces that threaten an individual's environment, supportive conditions for the development of autonomy, competence, and relatedness must exist (Ryan & Deci, 2000a). Although the positive realization of all three components of the SDT framework did not take place for every participant, representations of all components were evident in participants' responses. While students spoke positively about their experiences, the challenges they encountered relative to each of the three components and accessibility and support, both prior to and during the pandemic, warrant a reconsideration of how higher education administrators, disability service providers, faculty, and support staff can structure the learning environment for neurodiverse students.

The university's overall learning environment did not necessarily engender an atmosphere of belonging or relatedness for our participants prior to or during the pandemic. Regardless of the format in which classes were offered, students felt disconnected from their peers. Prior to the pandemic, all participants admitted to anxiety about attending classes or being treated differently by their peers. The decision to shut down and shift to online classes altered the nature of their relationships, further distancing them from the ability to form authentic relationships with their peers and professors. Although a sense of belonging is a basic human need (Maslow, 1958) that leads to better mental and physical health, the participants struggled to gain relational support where they were regarded positively by their neurotypical classmates. However, in a recent study, Pesonen et al. (2023) found that belongingness can be multidimensional and fluid for autistic students in higher education. For instance, Micah described a feeling of disconnection when the university closed while prior to that, he experienced a sense of belonging in classes and working on research projects with faculty.

To achieve a sense of belonging and relatedness and support (Ryan & Deci, 2000b; Ryan & Deci, 2022; Ryan et al., 2011; Ryan & Vansteenkiste, 2023), all participants highlighted the importance of various neurodiverse initiatives on campus and voiced the need for additional support, training, and staff to work with students on the spectrum. When asked to provide suggestions on how the university might improve the experiences of autistic students, Angela underscored the importance of utilizing various "forms of communication" and knowing what methods of communication worked best for each student. Micah suggested, at a minimum, that instructors and departments should reach out to students via email to ask, "'How are you doing? How is your work going along?' That is all I need." Similarly, Emily, an undergraduate student who was challenged by her professor due to her requested accommodations suggested, "Have professors be more understanding" and recognize that "people are different neurotypes and not everyone is the same." In addition to the university's support initiatives for neurodiverse students, Anna recommended having counselors or therapists with expertise and understanding of autism in adults.

Regarding competence and belief in one's ability (Ryan et al., 2011), anxiety was experienced mainly because of the challenges with communication and socialization. For example, Micah voiced that in classes and even while working on assignments, his brain would go blank sometimes. He stressed, however, that these "blank" events did not occur because he did not have a contribution to make but rather "blank in that I can't get everything out" or "nothing comes out at all. Because nothing is happening, the anxiety and the panic sets in." Allowing extra time to submit an assignment and making deadlines more fluid can be very helpful.

When asked to speak to their preference for online versus in-person classes based on their experiences prior to and during COVID-19, belonging and relatedness and competence and belief in one's ability were operational. Not having the ability to choose their preferred learning environment and being forced to switch to online classes with little to no warning denied them of their need for autonomy and choice. Micah and Emily experienced a feeling of belonging and relatedness in the in-person classes while Anna and Angela felt more comfortable in the virtual environment. According to Anna, in the virtual learning environment "there is an acceptable amount of time that you can spend before you have to respond to someone…you can pause" for example, on the discussion board as opposed to being present in the physical classroom moment and engaging in discussions. Moving to an online learning environment provided each of the students the freedom to email professors rather than having a direct conversation in class.

When attending classes through Zoom meetings rather than in-person, several participants indicated they experienced less tension and anxiety in online classes and felt more competent in their ability to interact with their professors and peers. In face-to-face classes, as noted by Anna, she "almost had to take anxiety medication" due to her concerns about not recognizing "nonverbal communication" signals from her classmates, having to ask questions in class that annoyed other students, and feeling like she was an outsider to her cohort. Online classes gave her more confidence in her ability because she was "not nervous in Zoom meetings" and "no longer had chest-tightening anxiety about going to class, sitting there for three hours, and holding it together."

Because of the pandemic, students experienced both online and in-person classes and in some instances hybrid options where a gradual transition was made to traditional face-to-face classes. From this experience, our participants were able to determine their preferred learning environment. The university's eventual elimination of online options ended this flexibility which worked better for Anna and Angela's learning needs. Hope (2022) underscored the point that accommodations and the student's right to request and obtain certain accommodations should not be viewed as providing students with an unfair advantage over their peers. The author maintained that disability service providers should be willing to advocate on behalf of students "through the lens of identity" rather than becoming a "compliance office" (p. 2). While recognizing the need to honor the university's policies, disability service providers might search for ways to involve autistic students in conversations with higher education administrators as well as faculty and staff who are responsible for setting the campus climate so multiple options rather than a one-best-way approach to instruction can be offered.

The hybrid learning model offers a more fluid schedule of both the traditional face-to-face and online learning activities with a self-paced approach as determined by the instructor or the university (Aycock et al., 2002). The hybrid format may be more appealing to autistic students since this mode of instruction blends components of both pedagogies that allows a more balanced approach that is conducive for their learning. Students who do not cope well with traditional face-to-face classes would also benefit from the flexibility of the virtual learning environment and vice versa. According to Madaus et al. (2022) in their study on autistic students during the pandemic, the change in instructional format with a more convenient schedule was a benefit of the change brought on by the pandemic for autistic students.

Findings from our study along with other studies that were conducted during and after the crisis (Madaus et al., 2022; Owenz et al., 2024) have confirmed research prior to the pandemic (Anderson, 2020; Bublitz et al., 2015). University administrators should invest in Universal Design for Learning (UDL) and ensure that educators are trained to utilize UDL in the classroom in general and even more specifically to better accommodate learners with disabilities and neurodiverse challenges (Anderson, 2020; Bublitz et al., 2015; Rose & Meyer, 2002). Scholars have supported the notion of UDL and its capacity to address the needs of postsecondary students on the autism spectrum (Carrington et al., 2020; Waisman et al., 2023). Because autistic students have a range of abilities and challenges that can impact their learning, educators can support their needs by integrating flexible strategies to engage and promote learning outcomes. Including autistic individuals in the design and development processes of instructional methods may help heighten awareness of their different learning preferences (Owenz et al., 2024; Pesonen et al., 2023).

As stated by Jacobs (2023) in the context of helping students with disabilities, "faculty need to demonstrate a willingness" toward their students "to not just meet them where they are" but also, "to value and honor their unique backgrounds, perspectives, and experiences beyond simple gestures toward accessibility" (para. 11). Faculty might consider the diversity of neurodiverse students' perspectives, learning preferences, and accessibility and belonging and relationship concerns when planning how they organize their courses and delivery options and search for ways to incorporate that knowledge into how they structure student interactions, student grouping, and specific course assignments. Universities can invest in autism awareness training for instructors with the goal of improving communication and creating a classroom environment that is accommodating to the learning abilities of autistic adults. In their study on autistic students' experience of the pandemic, Ballantine et al. (2023) also highlighted the importance of increasing autism awareness and training for instructors and non-autistic peers to enhance the learning process for autistic students. Embracing an appreciative inquiry and strengths-based approach to learning can be encouraged to better promote inclusivity (Johnson, 2022). In addition, universities could hire professional therapists and counselors who are trained to work with neurodiverse adults, especially autistic adults.

Despite individual preferences for online or in-person classes, Emily talked about specific sensory issues that she experienced in *both* online and in-person learning environments. The inability to understand what people were saying posed a problem for online classes; however, certain buildings or classrooms with bright lights or loud sounds created an obstacle to learning. Providing alternative places that can help to mediate sensory disruptions experienced by autistic students is recommended.

University support services need to be improved for autistic students. Our findings concur with Owenz et al.'s (2024) study on the pandemic experience of university students with disabilities, including autistic students, to make campus services more accessible and improve the academic accommodations system in order to reduce ableism. Clear guidance on the process for completing paperwork to receive accommodations with specific information on how to access opportunities to interact with service providers and receive a one-on-one virtual or face-to-face arrangement could be offered. Micah spoke about a lack of knowledge about what he needed to be successful, prior to and during COVID-19, and the types of supports and services available. Regular check-ins with neurodiverse students delivered from the disability services office that engender a culture of care and concern and provide reminders and updates of the support services and support groups available could also be provided.

Limitations

Although a sample size of four participants is considered adequate for a narrative study (Creswell & Poth, 2018), data saturation was not fully achieved. Thus, the perspectives of the four participants may not necessarily represent the perspectives of other undergraduate and graduate autistic students who were enrolled in university classes during the timeframe examined for this study.

For this study, however, it is important to note that for autistic participants, the wide variety of differences and challenges that exist across the spectrum often requires individualized plans and interventions to address their unique challenges. Each participant told a different story and narrative; nonetheless, we were able to identify themes from their rich narratives to gain a deep understanding of the topic. In fact, Ballantine et al. (2023) in their interview study of eight autistic university students' lived experience during the pandemic found that "each autistic student reported unique learning experiences and needed individualized supports for their learning" (p. 325).

Although the participants' age range was varied, which could pose a limitation to the study, each experienced the pandemic while studying at a university. All four participants were also diagnosed in their adult years; two were diagnosed in their earlier adult years while the other two were diagnosed later. Prior to receiving a formal diagnosis, however, each participant acknowledged a sense of being different and admitted they pursued a diagnosis as a result. This reality could have impacted the challenges they faced in a different way from autistic students attending the university who received a diagnosis of autism prior to attending the university or in their earlier years. Additionally, the participants may have been hesitant to fully disclose certain details of their experiences of the pandemic and concerns about how they may have been perceived by us as researchers.

Conclusion

This study gives voice to autistic university students who experienced the impact of the pandemic on their lives. The knowledge gained from this study can enlighten higher education administration and service providers of appropriate techniques for addressing students' learning preferences beyond the pandemic. A better understanding of the successes and challenges during the time of remote and online learning can help to inform university instructors of effective teaching and learning strategies that may promote the academic success and social and emotional well-being of autistic students. The findings from the study provide insights beyond typical academic support for autistic university students and can help to increase awareness of university administrators of longer-term benefits such as improving retention and overall experiences of autistic students.

The structural configuration and policies of higher education tend to serve as disincentives for supporting a more personalized teaching and learning environment (Waddington, 2017). The educational contexts of higher education, as stated by Hamilton and Perry (2023), "largely illustrate a conditional view of an acceptable student, i.e., a student is acceptable only when fitting to a neurotypical standard," and characterize difference negatively rather than interpreting it as a demonstration of "novelty, originality or excellence in academia" (p. 2).

When addressing the topic of disabilities and neurodiversity, Nieminen and Pesonen (2022) spoke to the prevalence of ableist assumptions and underpinnings that are inherent in higher education despite specific policies and laws dedicated to downplaying or eliminating their existence. They called for higher education to "unpack and challenge the idea of a 'normal, able student' in pedagogical design and policies" and systemically adopt the concept and practical application of anti-ableist pedagogies "to promote belonging and to challenge the exclusion and marginalization of disabled students" (p. 1). Hamilton and Petty (2023) advanced the concept and application of compassion and the adoption of compassion-informed pedagogy that includes the use of UDL and strengths/assets-based approaches so neurodivergent students can thrive. The authors claimed that a compassion-informed pedagogy calls for educators to recognize the struggles faced by students and search for ways to mitigate them.

To enable neurodivergent autistic students to thrive, we recognize that an anti-ableist and compassion-oriented approach to higher education as a whole and, more specifically, applied to the overall learning environment requires an entire shift in thinking about the higher education enterprise. To continue to operate in ways that require autistic students to alter their own behavior to fit into a system that does not account for the contributions that they can make to the university and beyond represents an even greater travesty.

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Journal of Postsecondary Education and Disability, 2025, 38(4), 671-686 671

Disability Services in Community College Prison Education Programs: A Mixed Methods Study

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Abstract

As community colleges increasingly implement for-credit educational programs within prison settings, they are likely to serve many disabled students. However, little is known about the services provided to students with disabilities in prison education programs facilitated by community colleges and how accommodations are managed. Thus, the purpose of this exploratory, explanatory sequential mixed-method study was to gain insights into disability accommodations provided in for-credit prison education programs. Specifically, this research study identified the number of community colleges providing disability accommodations inside the prison setting, the types of accommodations being provided, and the barriers the disability providers experienced trying to facilitate access to the college classes. Data were collected via a survey and interviews with college disability service providers. The findings highlight the lack of adequate services provided to disabled students in prison education programs and the complexity of providing disability accommodations within the carceral context. The findings point to several implications for practice including a need for more collaboration across all stakeholders involved in providing college education to the incarcerated population and the importance of reimagining processes and procedures to work within the highly controlled environment of a prison education program.

Keywords: disability services, correctional education programs, prison education accessibility

Introduction

Research shows providing correctional education programs to the incarcerated population reduces recidivism, supports post-release reintegration into society, develops productive members of their community, and saves taxpayer dollars (Larson, 2015; Nally et al., 2012; Pelletier & Evans, 2019). College correctional education programs can take several curricular formats, including face-to-face, telecourses (either recorded or streamed), intranet managed "online" classes, correspondence by mail, or a combination of any of these formats (Alliance, 2024; Montag, 2022). Post-secondary prison education can be provided by either two-year or four-year institutions (Alliance, 2024).

Many individuals who are incarcerated taking college courses may have a disability. Identified disabilities in correctional settings include learning disabilities, autism, intellectual disabilities, cognitive disabilities, hearing, ADD/ADHD, ambulatory, vision disabilities, mental health conditions and chronic health conditions (Maruschak et al., 2021; Schlanger, 2017; Vallas, 2016). The estimated rate of disability among those who are incarcerated is 38% (Maruschak et al., 2021), almost double the National Center for Education Statistics (2023) rate of disability among enrolled undergraduate college students, which is 21%. While the exact number of disabled students attending for-credit prison education classes is not known, colleges need to be prepared to serve students with disabilities in correctional settings.

Currently, most colleges provide disability accommodations to non-incarcerated students with a variety of disabilities such as learning, sensory, physical, mental health, and chronic health conditions (Raue & Lewis, 2011). Common accommodations provided by colleges for these students are extra exam time and alternative format of exams (Raue & Lewis, 2011).

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However, little is known about what accommodations colleges provide in college correctional education programs (CCEPs) or how the accommodations are managed in the highly controlled correctional setting. The purpose of this exploratory mixed methods study was to gain a basic understanding of the accommodations provided and ways these accommodations are managed in correctional education programs. As an exploratory study, this research focused on the community college setting. Community colleges have historically been the institutions providing education in correctional settings and continue to house almost half of the correctional education programs (Castro et al., 2019; U.S. Department of Education Office of Vocational and Adult Education, 2009;). We were particularly interested in identifying (a) what accommodations public community college disability services (DS) personnel are currently providing to disabled students who are incarcerated (DSIs), (b) how many colleges are providing disability-related accommodations in CCEPs, (c) what barriers the DS staff encounter in attempting to provide accommodations, and (d) how DS staff navigate the provision of accommodations in the nonstandard learning setting of the correctional site.

For this study, we followed language practice within the field of correctional education in prison, using person-first language (person who is incarcerated) and avoiding the terms inmate, felon, prisoner, and all derivatives. Regarding language in terms of disability, both disability justice identity-first (e.g., disabled student) and person-first (student with a disability) are used for inclusive purposes (Association of Higher Education And Disability, 2022). Gaining insights into the accommodations provided to those who are incarcerated is particularly important as the U.S. Department of Education (2022) recently expanded federal financial aid through the Second Chance Pell Grants program for higher education in prisons. As more individuals who are incarcerated gain access to correctional education programs, the number of students with disabilities served by these programs is likely to increase.

Services for Disabled Students

Under federal laws Section 504 of the Rehabilitation Act of 1973 (2015) and the American with Disabilities Act (ADA) (2008), higher education institutions must ensure equal and equitable access to all programs, services, and activities (U.S. Department of Education Office for Civil Rights, 1998). Disability services (DS) staff typically determine appropriate accommodations or "reasonable modifications," which can include test accommodations, use of assistive technology, auxiliary aids for effective communication, alternate text materials, accessible built environment, accessible online materials and modification of institutional policies and procedures (Academic Adjustments, 1980; Colker & Grossman, 2014; Evans et al., 2017). Despite legal requirements, disabled college students indicate experiencing barriers in college due to lack of instructional accessibility (Evans et al., 2017; Lee, 2014; Wilson et al., 2000), inaccessible course materials (U.S. Department of Education, 2016), and faculty questioning or even denying the use of accommodations (Harbour & Greenburg, 2017).

The funding structure of DS offices complicates disability service provision. The U.S. Congress, when drafting the ADA, "excluded [federal] funding to states, institutions…" to meet these requirements (Rund & Scharf, 2000, p. 85). DS office institutional funding often does not adequately cover the cost of accommodations, the number of staff needed to coordinate services, and the pay for staff with the unique skills needed to provide various accommodations (Huger, 2011; Rund & Scharf, 2000). The entire campus is responsible for disability law compliance, not just the DS office (Evans et al., 2017; Harbour & Greenburg, 2017; Huger, 2011; Scott, 2019).

Correctional Education

Correctional education programs in federal, state, and private correctional facilities range from prison staff teaching high school equivalency programs, adult basic education, English as a Second Language (ESL) programs, and vocational training programs (Hall, 2015; Klein & Tolbert, 2007) to CCEPs. CCEPs are formal postsecondary education programs provided by colleges and universities with college faculty (Hall, 2015), oftentimes focused on certificates or degrees like those provided on campus. Many challenges to providing college education in correctional settings exist including a lack of instructor interaction when the program is distance-learning format, limited library resources, unavailability of textbooks, limited access to computers and tutors, and limited course selection (Meyer & Randel, 2013; North, 2016). The basic design and daily operations of the prison, including the structure of the facility, the policies and procedures, and the prison administrative hierarchy— all focused on security and control—further limit access to a college education for those who are incarcerated. (McCarty, 2006; Simpkins, 2015; Wright, 2020).

Existing literature on disabilities in correctional programs focuses on specific types of disabilities and physical access within the secure correctional facility setting (Hayes, 2007; Talbot, 2010; U.S. Department of Justice Civil Rights Division, 2021) or K-12 delivery of special education in the correctional setting, mainly in juvenile facilities (Miller, 2019; Steurer, 2000). More research is needed on the provision of college disability services in correctional settings in for-credit college classes and programs to identify what types of accommodations colleges are provided and the barriers DS staff experience when providing accommodations in this constrained secure setting.

Organizational Change

This study was guided by Bolman and Deal's (2013) four-frame model. Bolman and Deal (2013) suggest that organizational leaders should consider four perspectives, which they called frames, when addressing issues or trying to make change in an organization. As the purpose of this study was to examine how DS offices navigate the provision of accommodations in CCEPs, utilizing Bolman and Deal's (2013) four-frame model allows for insights into the perspectives or frames that created challenges for DS staff when striving to provide accommodations in CCEPs. The framework further provides helpful guidance on ways to foster change at institutions to better serve disabled students in CCEPs.

Bolman and Deal's (2013) model describes the following four frames: Structural (the strategy of change), human resources (focus on employee needs), political (limited resources and conflicting agendas), and symbolic (sense of purpose). Identifying where among the different frames the greatest problem or issue is can help the organization develop effective responses to implement a change. For example, if the challenge in providing accommodation is a lack of adequately trained staff (human resources), advocating for additional staff training could be a way to foster change. If the challenge is related to organizational confusion about priorities and who is responsible for providing accommodations (structural), fostering change would require clarifying legal requirements, organizational structures, and staff responsibilities.

Research Design

This study used an exploratory, explanatory mixed methods design. Explanatory mixed methods research uses quantitative and qualitative data approaches to find solutions to real-world problems (Creswell & Plano Clark, 2018). Quantitative data is collected first to gain a basic understanding of the central concerns under investigation (Creswell & Plano Clark, 2018). Next, qualitative data is collected to build on the knowledge gained through quantitative data and gain a more comprehensive understanding of the problem (Creswell & Plano Clark, 2018).

Participants and Participant Recruitment

This study focused on community colleges, specifically those that had more than one year of experience providing prison education. The population for the study was selected based on the following criteria: (a) public community college; (b) have provided prison education for at least one year, thus having navigated disability provisions for this populations for at least one year; and (c) providing education within state adult correctional system. Additionally, those excluded to limit variability in setting were institutions providing education in federal or juvenile systems or city/county jails, in U.S. territory justice systems, or the District of Columbia justice system (serious offense detention is in federal prisons) (DC Department of Corrections, 2024).

The first author identified 158 public community colleges that provide for-credit education programs in the correctional setting from publicly available information and databases, including the Alliance for Higher Education in Prison National Directory (2020, 2024), state agency correctional education websites, press releases or news articles highlighting correctional education, accrediting organizations' websites listing college site locations (such as the Higher Learning Commission), the U.S. Department of Education's Second Chance Pell Grant first-round recipient lists, and the Database of Postsecondary Institutions and Programs (DAPIP). These 158 met the criteria of being a two-year school providing education in the state prison system. All 158 schools were then invited to complete the survey to gain the broadest sample. These institutions represented 39 different states, the 9 regional divisions of the U.S. Census, and the 10 ADA Network regions (ADA National Network, 2021). To identify the potential participant at each institution, the first author searched each college's website for the person responsible for providing disability accommodations and services. Potential participants included full-time DS staff with varying titles or, for institutions without full-time DS staff, academic or student success advisors tasked with providing disability services as part of their job role.

After receiving IRB approval, the first author sent a survey invitation via Qualtrics to potential participants in February 2021. Over the next four weeks, three reminder emails were sent out to the potential participants. As only nine responses were received, after receiving IRB approval, a second shortened survey was sent out in April 2021 to the same 158 potential participants. With the second survey, participants were offered an incentive (i.e., electronic gift card worth $10.00) for participating in the survey. A reminder to complete the second, shortened survey was sent on 5/3/2021. This survey yielded an additional 24 responses. Thus, a total of 33 survey responses were received, a response rate of 20.89%. To ensure anonymity of the respondents, no demographic or identifiable data were collected with the survey.

The initial and abridged survey invited participants to volunteer in a qualitative interview. Participants were offered an incentive of an electronic gift card ($15.00) to engage in the interview. The qualitative interview was completed by 12 participants representing 9 states. Interview participants were assigned pseudonyms, any identifiable demographic information (e.g., age, race, years in disability services), and institution names were excluded to protect respondent confidentiality (Table 1).

Data Collection Methods

The original survey instrument, developed by the first author in consultation with the second author, consisted of 17 questions. Questions covered demographics of the college disability services staff members and students served; the CCEP format, location, and staffing; means of connection to the college DS office for general disabled students and those who are incarcerated; the numbers of students from the general, dual enrollment, and prison education program populations registered with the college DS office; and the demographics of those student populations by different types of disabilities. The last set of questions related to the variety of accommodations provided and frequency/types of barriers encountered in providing accommodations for each of the student populations. The abridged survey instrument reduced the number of questions to six, removing much of the student demographic questions and the discrete student populations served (dual-enrollment, general, CCEP). The focus of the shorter survey was on who determines or facilitates the disability accommodations for enrolled disabled students within the CCEP, how many disabled students are provided accommodations within the CCEP, the types of accommodations provided, the barriers experienced, and outlining how accommodations are arranged for students enrolled in non-standard learning environments, such as the CCEP. The final question on each instrument asked respondents to indicate their interest in participating in follow-up interviews.

Survey responses highlighted a lack of adequate service provision in correctional education programs. Interviews, thus, homed in on the challenges participants encountered in providing accommodations in this setting and strategies they used to navigate this challenging environment. Interviews were semi-structured, 45-minutes long, and conducted either in a virtual online meeting or by phone. With participant permission, interviews were recorded and later transcribed by a professional transcription service. The first author completed short field notes at the conclusion of each interview to capture initial impressions. The interviews covered an overview of the DS office structure and services both for the student population on the institution's campus and students in non-standard settings, such as dual-enrollment and CCEPs. Follow-up questions dove into specific processes, barriers, and successful accommodations provided. For participants who were unaware if the institution was providing correctional education, the questions looked at processes used for accommodation provision in other non-standard environments such as dual-enrollment or health science clinical settings, as well as, reasons for the lack of involvement of DS staff in service provision in this setting.

Data Analysis

First, the data from the two surveys was merged and tables showcasing descriptive statistics in response to each question developed. Next, each interview transcript was analyzed through multiple rounds of coding. In the first round of coding, the first author used in vivo codes to retain the explanations of the participants (Creswell & Plano Clark, 2018). With additional rounds of coding, the first author, in consultation with the second author, collapsed the codes into categories and eventually themes, focusing on ways DS staff navigated barriers they encountered. Use of a thematic concept matrix enabled the authors to "cluster" the specific barriers, challenges, processes, and strategies disability service personnel expressed in the interview (Miles & Huberman, 1994, p. 131). The last step of data analysis was a broad integration of the qualitative data with the descriptive quantitative data through a modified joint display table (Creswell & Plano Clark, 2018). Alignment of comments from the interviews with specific survey results highlighted patterns of practice, processes, and strategies (the data analysis focus) between the survey and interview results (see Table 2).

Quality of Research

The quantitative data was anonymous, descriptive, aggregated, and no claims of causation or correlation were made. This reduces construct and internal validity concerns. The strategies used to increase the

Table 1

Qualitative Interview Participant Demographics

Pseudonym	College size	Region	# of Campus Sites	DS Staffing Level	AHEAD Member	# DS Students Served	# of FTE Enrollment	% DS of FTE
R1	M	South, State #4	1 campus	1 PT Coordinator	N	~50/yr	~2500 FTE	2.00%
R2	VL	West, State #3	4 campuses	1 FT Director, 2 FT, 3 PT	N	~1400/yr	~11,000 FTE,	12.73%
R3	M	South, State #6	4 campuses, 4 counties	1 FT Coordinator	N	~100/yr	~3100 FTE	3.23%
R4	M	South, State #1	6 campuses	1 FT Collegewide coordinator, 5 PT ‘DS reps’ secondary to main job role (advisors)	N	~180/yr	~4700 FTE	3.83%
R5	VL	West, State #7	10 campuses (DS coverage at non-main sites 1/2 to full day/ week)	1 FT Director, 26 FT, 25 PT staff including staff interpreters; AT profs; etc.	Y	~3500/yr	Over 50,000 FTE	12.07%
R6	M	South, State #4	2 campuses	1 PT coordinator	N	~100/yr	~3400 FTE	2.9%
R7	M	Midwest, State #9	4 campuses	1 FT Director	Y	~160/yr	~2400 FTE	6.67%
R8	VL	West, State #8	Over 10 campus sites	8 FT staff (incld. Director) 22 PT staff / interpreters	Y	~1400/yr	~27,000 FTE	5.19%
R9	M	South, State #2	4 campuses	1 FT Coordinator	N	~230/yr	~3800 FTE	6.05%
R10	M	Midwest, State #9	4 campuses	1 FT Coordinator	Y	~150/yr	~2500 FTE	6.00%
R11	L	Midwest, State #5	4 campuses	1 FT Director 1 FT Staff Assistant	Y	~230/yr	~8100 FTE	2.84%
R12	VL	West, State #8	Over 10 campus sites	8 FT staff (incld. Director) 22 PT staff / interpreters	Y	~1400/yr	~27,000 FTE	5.19%

Table 2

Joint Display Representing Survey Data Explained in Interviews (Partially Represented)

Survey Data	Comments from Interviews as Explanations
14/33 (42.42%) respondents provide no accommodations	"[college VP telling DS staff why DS will not work with DSIs] 'Because they're incarcerated, the ADA will not be covering them the way it will be for people who aren't incarcerated.'"; "I'm assuming that they [CCEP] don't have anybody disabled..."
Of the 19 (57.58%) who provide at least one accommodation: 17/19 (89.47%) identified at least one barrier in providing accommodations	"I have talked to, all the way up to state senators… "… explore different accommodations that would be suitable and meet the safety requirements of the prison too."

Barriers Stated – Survey Responses	Interview Statements Explaining Survey Data
No technology / assistive technology available or able to provide in correctional setting: 10/17 (58.82%) respondents stated this was barrier	"…[we need] a text to speech program that does not require internet …because there is no internet access . "…AT would take months to go in…but they don't allow."
Prison security prohibitions creates barriers to service provision: 8/17 (47.06%) respondents	"…if there is an ADA issue, we have to work around the constraints of safety…"; "…security protocols are absolute…"

Table 3

Numbers of DSIs Receiving Accommodations Based on Survey Responses

Number of DSIs Receiving Accommodations	Number of Respondents (*n*=19)	Percentage of Respondents
Don't have the number	3	15.79%
1-5	10	52.63%
6-10	3	15.79%
11-15	1	5.26%
16-20	0	0.00%
21+	2	10.53%

Table 4

Number of Different Accommodations Provided to DSIs by Survey Respondents

Number of Different Accommodations Provided	Total Number Respondents Providing Accommodation (*n* = 19)	Percentage of Respondents Providing One or More Services to DSIs (*n* = 19)	Percentage of All Survey Respondents (*n* = 33)
Provides only one type of accommodation (Extra time / tests read; braille / LP; ASL / CART)	9	47.37 %	27.27 %
Provides 2 types of accommodations	4	21.05 %	12.12 %
Provides 3 types of accommodations	2	10.53 %	6.06 %
Provides 4 types of accommodations	3	15.79 %	9.09 %
Provides 5+ types of accommodations	1	5.26 %	3.03 %

Table 5

Number of Specific Accommodations Provided to DSIs by Survey Respondents

Type of Accommodations Provided	Total Number Respondents Providing Accommodation (*n* = 19)	Percentage of Respondents Providing One or More Services to DSIs (*n* = 19)	Percentage of All Survey Respondents (*n* = 33)
Extra Time on Tests/Quizzes and/or Read Aloud	16	84.21 %	48.49 %
Only Extra Time Tests/Quizzes and/or Read Aloud	7	36.84%	21.21 %
Braille / LP	7	36.84 %	21.21 %
Only braille / LP	1	5.26 %	3.03 %
Interpreter / CART	6	31.58 %	18.18 %
Only Interpreter / CART	1	5.26 %	3.03 %
Audiobooks	5	26.32 %	15.15 %
Notetakers	3	15.79 %1	9.09 %

trustworthiness of the qualitative data were interview confidentiality, member checking, and peer review. The first author discussed strategies for protecting interview participants' confidentiality prior to the start of each interview, including use of pseudonyms for those who participated in the interviews. Throughout the research project, the first author reflected on their biases and how they may shape their approach to the study. To reduce potential bias and ensure interpretation of the data aligned with participants' perspectives and experiences, the first author conducted member checks by sharing a summary of the findings with key interviewees and asking for initial reactions and feedback. Based on interviewee feedback, no changes were needed. The second author served as a peer reviewer, reviewing survey instruments and the interview protocol prior to data collection and providing guidance and mentorship during the data analysis and writing processes.

Findings

This exploratory mixed methods study found (a) many institutions did not provide the range of accommodations/services that are often provided to the non-incarcerated students to DSIs in for-credit CCEPs; and (b) if DS personnel provided accommodations, the majority provided very limited types of accommodations. Study findings further highlighted the complexity of trying to provide accommodations, the unique barriers DS staff encountered when providing accommodations, and ways DS staff navigated these barriers.

Accommodations

Twenty-two (66.67%) of the college DS staff respondents to the survey (*N*=33) indicated they understood the DS office is responsible for ensuring the DSIs receive their appropriate accommodations. However, only 19 of the 33 (57.58%) indicated they provided accommodations to DSIs. Among these 19 respondents, only 16 (84.21%) respondents tracked data on the number of DSIs served. See Table 3 for details on the number of students served.

Additionally, great variation existed in the number and types of accommodations the DS staff provide to the enrolled DSIs (see Table 4). Notably, the majority of respondents provided only two or fewer types of accommodations.

Great variation also existed in the specific types of accommodations provided to DSIs (see Table 5). Fewer than 50% of all the survey respondents provided test accommodations such as tests with extra time or read aloud. Only a few provided more complex services like notetaking, braille/large print materials, audiobooks, or interpreting/CART services.

Barriers to Providing Accommodations in Correctional Settings

Survey respondents and interviewees identified five categories of barriers they experienced in providing accommodations or services to enrolled DSIs: (a) actions or attributes of the prison administration, (b) lack of technology access, (c) limited access to documentation and interactive dialogue with the DSIs, (d) limited DS staffing, and (e) lack of understanding of legal requirements and responsibilities.

Actions or Attributes of the Prison Administration

Of the 17 survey respondents who identified barriers to providing accommodations or services to DSIs, 8 (47.06%) indicated that the prison security prohibitions and administration limited their ability to provide accommodations. Interview participants indicated they often lacked knowledge of security regulations and were unable to connect with the correct prison staff to obtain permission to bring in the accommodations. For example, Respondent 8 (R8) shared:

> It was like detective work, like who do I need to talk to. I got bounced around and talked to probably everyone in that [prison] facility. It was like getting information on how they [DSIs] access things that was challenging…and then all of a sudden, all the people I was talking to [in the prison] were gone and I had to start all over again.

As R8 explained, not only is connecting with the correct prison staff member difficult, but frequent turnover in prison staffing further complicates service provision to the DSIs. Prison security and administration also created unique challenges to providing certain accommodations such as sign language interpreting or real-time captioning. Respondent 7 (R7) shared:

> The security requirements for bringing individuals into the prison is that they have to complete a background check, after that, they have to complete the [prison security] training and then they get a badge [to enter]…so if I need to find a new sign language interpreter to go into a class, it could be a four-to-eight-week process.

Participants identified that routinely provided accommodations and services in the standard college environment are significantly complicated within the correctional setting. Greatly impacting the work and efforts of participants were the actions and attributes of the prison administration, especially related to coordination, collaboration, and security processes.

Lack of Technology Access

Stringent security protocols in correctional facilities often prohibit the use of technology, including assistive technology. Out of the 17 survey participants, 10 (58.82%) identified lack of or limited access to technology as a challenge. Interview participants further expanded on these challenges. For example, R8 explained, "I am operating like decades ago, like in an environment that is decades old. It's just, like being in the Twilight Zone…how am I going to get this information to this person [without technology]." The lack of access to technology limited R8's ability to provide accommodation and she often found herself reverting to early 20th Century, nontechnology-based accommodations.

Moreover, participants often did not have the authority to decide what technology to use. R2 shared, "I don't have the power to tell the prison what they [DSI] can have access to…they [prison administration] decide if the [DSI] can have access to a typewriter." Participants like R2 may recommend a certain assistive technology but because of prison regulations and security limitations, they may not be able to provide that specific accommodation.

Limited Access to Documentation and DSI Interactive Dialogue

The incarcerated status of the DSI within the correctional setting significantly limited the student's involvement in the accommodation process. Five of the 17 (29.41%) survey respondents providing accommodations inside the prison noted that the limited interactive dialogue with the DSI when determining the appropriate accommodation was a challenge. Six of the 17 survey respondents (25.29%) also noted the DSIs' inability to provide documentation of disability was a challenge. Interview respondents shared additional context for these barriers and their impact. R7, whose college's CCEP is an in-person curriculum format, explained:

> Many times the students will tell me that they had an IEP in high school but, of course being in the prison, they don't have access to the IEP and don't have access to the outside world to request the IEP [from the high school].

R7's quote highlights how the correctional setting restricted the DSI's ability to advocate for themselves or access the required documentation. R2, whose CCEP is correspondence-based, highlighted these challenges and barriers:

> I think the biggest barrier that some of our students [DSIs] have is getting that verification [documentation]…they are lucky if they can get somebody to sign something for them. You know, we are trying to "fit shoes" and we are not even in the same room [to determine appropriate accommodations].

As R2 highlighted, the nonstandard setting of the correctional facility limited the DSI's involvement in the interactive process. This limited involvement, in turn, limited the ability of participants to determine and facilitate appropriate accommodations to the DSIs effectively.

Limited DS Staffing

Participants shared that limited staffing of the DS office also created challenges for meeting service needs. Of the 12 interview participants, 8 (66.67%) stated there was only one part-time or one full-time DS staff member for the entire college, including those with multiple campuses. Almost 92% of the interview participants (11 of 12) explained the limited DS staff curtailed the level of accessibility activities they were able to engage in. For example, Respondent 5 (R5), at a college with 10 campus/satellite sites, including an additional three correctional institutions, explained even with a larger staff of 27 full-time professionals, the non-main campus sites did not have full-time disability service coverage. She shared, "The other sites are not fully staffed all week long. I mean virtual appointments are available." Not having on-site staff, including at the correctional settings, limited the services R5's office could provide.

At smaller institutions, regardless of any additional sites, DS staff was limited to the main campus, limiting services provided. Respondent 1 (R1) explained:

> I am part-time. I am the only disability person on campus and I am part-time. So, while we do have those correctional facilities close to us, and I have been here about five years part-time, I haven't had contact with either correctional facility…not providing any accommodations to DSIs.

Being part-time, R1 struggled to address the needs of students on the main campus, leaving no time to reach out to CCEP students. As the examples of R5 and R1 highlight, limited staffing significantly impacted participants' outreach and coordination of accommodations with CCEPs.

Confusion about Responsibility of Providing Accommodations

Participants shared that they and/or their supervisors were often unsure whose responsibility providing accommodations was. Almost 25% (8 of 33) survey respondents indicated that the disability accommodation process within the CCEP was the responsibility of "others," including the prison administration or the CCEP faculty/staff. Nearly 30% (5 of 17) of the survey respondents identifying at least one barrier in providing accommodations, indicated they did not get referrals, service requests, nor were they routinely informed about DSIs. R1 explained, "I am not aware of the program. I'm assuming they [CCEP] don't have anybody disabled. I have not been approached as the disability person on campus." Others noted their confusion about the DS responsibility to provide accommodations to DSIs enrolled in the college's CCEP. Respondent 9 (R9) said, "I know I don't, not with accommodations. Um, who does that?"

Several participants had differing understandings of DS staff's responsibility in providing accommodations to DSIs than their supervisors. For example, Respondent 11 (R11) was preparing to start working with the DSIs. Then her supervisor halted her efforts, informing her, "You aren't going to be working with the [DSIs] because they have a different set of rules or the law [ADA] doesn't apply to them because they are incarcerated." Confusion about whose responsibility it was to provide accommodations to the DSIs led to participants not engaging in service provisions to the students in the CCEPs.

Responses to Barriers

Interview participants shared that they were often unable to overcome the barriers they encountered. Participants made difficult choices regarding the extent to which they engaged in the accommodation process in CCEPs. Participants who chose to engage tried to navigate among multiple stakeholders, raise stakeholder's awareness, and re-envisioned existing procedures.

Making Difficult Choices About Extent of DS Engagement

DS staff often had to make difficult choices about the level to which they engaged in the accommodation process. Some participants felt they had to retreat when faced with potential issues or conflicts. When R11's supervisor told her the DS office would not be responsible for providing accommodations to the enrolled DSIs, R11 did not feel safe to engage in further discussion or advocacy efforts. She explained, "It is that I got to eat and I got to feed [my] kids." She understood pushing back against her supervisor could be a risk to her employment status.

Some participants engaged at reduced levels. Respondent 6 (R6), whose CCEP was in-person, utilized a proxy, the CCEP director, who determined and provided the accommodations to the DSIs. He said, "She [the CCEP director] will say [to me], 'Well, XYZ identified with me, and these are the accommodations he will need.'" While using a proxy allowed R6 to provide accommodations to DSIs, he had to rely on others to determine the appropriate and effective accommodations; others who may not be trained in determining appropriate accommodations.

Other participants stepped up their involvement and outreach. Respondent 2 (R2) chose to increase her level of engagement with DSIs, though that engagement had to occur through different modes of communication as the program was correspondence-based. She explained:

> So, everything is done the old-fashioned way, through the U.S. Postal Service. The [students] get a student handbook—everything [about DS] is through the student handbook. My actual communication about qualified accommodations is directly with the student via a [USPS] letter, then that letter is also the same I send to the faculty [and] the educational liaison [prison staff] at the facility.

R2 worked to engage directly with the students, as much as possible, even if it was limited to communication via postal mail rather than in person.

Proactively Navigating Among Multiple Stakeholders

In order to provide disability accommodations, all 12 of the interviewees identified the need to proactively navigate and negotiate with multiple stakeholders. Identified stakeholders include (a) DS staff; (b) community college administrators, faculty, and staff; (c) CCEP administration, faculty, and staff; (d) prison administrators and staff; (e) DSIs/students with disabilities; and (f) state-level governing body, including the Department of Corrections (DOC). Even though participants attempted to proactively reach out to stakeholders, not all attempts were successful. For example, R5 explained, "So the [prison faculty] are barely getting hired by the time the class is being taught." The CCEP hiring process stymied R5's attempts to proactively collaborate. Other participants, like R7, shared how proactive outreach turned into a game of "telephone:"

> [I] will talk to the [CCEP] director and I will say this is what I need and she'll say, "Well I have to talk to the warden," and then it comes back down from the [state DOC] to the warden who then tells the [CCEP] director…the director then will inform me.

This process differs from the standard college environment, where DS staff can communicate directly with faculty and staff. R7 had to navigate through several layers of staff— at the community college, the prison and state levels—to attempt to provide accommodations. Though not always successful, proactive outreach to multiple stakeholders was key in addressing the barriers participants encountered when trying to provide accommodation in CCEPs.

Re-envisioned Procedures to Providing Accommodations

Participants re-envisioned existing processes and procedures to navigate the barriers they encountered in the correctional setting. For example, R2, whose CCEP was correspondence-based, included information in the CCEP student handbook:

> There is an inquiry form that is in that handbook. They [DSIs] will fill that out, let us know that they are interested in services. They will identify via a check box the nature of their disability and then we, in turn, will send them an application for services and explain what kind of verification [documentation] we would need.

As every enrolled CCEP student receives a student handbook, by including DS process information in the handbook, R2 was able to ensure that each student was informed about their rights to request accommodations and the request process. Similarly, for an in-person CCEP, R7 established a request for services form provided to every student during the CCEP new student orientation. Additionally, to engage in the interactive process, she explained, "I would hold office hours one hour a week at each institution in order to have students meet with me…[completing] several intakes during that office hour at both institutions." Participants create ways to reach DSIs and share information with them that allowed them to circumvent some of the barriers they encountered in the correctional setting.

Other participants adapted or streamlined processes to apply for services to increase DSIs' access to accommodations. For example, R6 developed the practice of approving the DS proxy inside the facility to provide provisional services on a temporary basis while disability documentation was acquired, usually submitted by an outside family member. He explained:

> I provide those complementary [provisional] services, extended time, preferential seating based on the information that was given to me [by the CCEP director]. We do have to make those provisions with an individual on the outside, whether it is the wife or it's the mother or father, they [DSI] will reach out and the [family member] will get the documentation to me…you have to have that flexibility.

Developing an effective process for the unique setting of the correctional facility allowed R6 to provide the needed accommodations to DSIs. Similarly, R2 created a process that allowed the DSIs to "designate a family member that we can talk to" that helped to remove situational barriers. Revising and re-imagining processes that took the unique context of the correctional setting in account was an important strategy participants used to navigate existing barriers.

Discussion

These findings highlight room for improvement for provision of accommodations to DSIs within CCEPs by the college/DS staff. While participants are attempting to provide appropriate disability accommodations, many struggle to provide equal and equitable access to DSIs pursuing coursework from the community college. Study participants shared that the typical barriers to providing accommodations experienced in standard college settings are compounded and intensified in correctional settings. Similar to the CCEP faculty experience, the DS participants faced prohibitions of many common instructional and accommodation materials due to the stringent security protocols and prison administrative controls, which is consistent with previous studies (e.g., see McCarty, 2006; Meyer & Randel, 2013; Simpkins, 2015; Wright, 2020). Intersecting these barriers are the challenges faced by DS staff in standard college settings, such as technology access, environmental barriers, instructional and course material access, and difficulty for disabled students to work with the DS office (Evans et al., 2017; Scott, 2019; Wilson et al., 2000). Combined, these struggles led to unique challenges in trying to provide accommodations in correctional settings. For example, they may rely on assistive technology to provide access in standard settings, but are unable to do so in correctional settings due to security limitations. Similarly, limited DS staffing was found to negatively impact the participants' ability to meet the needs of disabled students, coordinate services, and ensure accessibility, even on the standard campus. This finding was also consistent with previous research (e.g., see Harbour & Greenburg, 2017;

Huger, 2011; Rund & Scharf, 2000; Scott, 2019). Considering the need to travel to a different location, as well as the additional extensive collaboration required to provide accommodations in the correctional setting, limited staffing becomes an even more pressing concern and potential barrier in the CCEPs.

The lack of providing appropriate accommodations in CCEPs is concerning, particularly as several recent U.S. Department of Justice and Department of Education settlement agreements, consent decrees, letters of findings, compliance reviews, and final court cases emphasize and explain legal responsibility for ensuring equal and equitable access, within correctional settings, including facility and program access-such as education programs (see U.S. Department of Justice Civil Rights Division v. Vermont, 2021; U.S. Department of Justice v. Minnesota, 2023; U.S. Department of Justice Ohio ODRC Agreement, 2016). The Ohio agreement spells out that "employees, agents, or contractors, who are wholly or partially responsible for the custody and care of inmates…" must ensure nondiscrimination based on disability. College education providers to correctional settings are considered agents or contractors and thus, are responsible to ensure disability access and inclusion. Additionally, recognizing that the responsibility for accessibility is a nondelegable duty (Goren, 2012) is also important. CCEP faculty and staff, community college administrators, and the college's DS professionals need to be aware of this level of responsibility. Furthermore, it is critical to include the college DS professionals in the development and maintenance of the CCEP to meet this level of responsibility.

Analyzing the findings through Bolman and Deal's (2013) Four-Frames model highlights challenges related to all four frames as well as ways DS staff utilized the four frames to improve CCEP accommodations. When some institutions started CCEPs, whose responsibility providing accommodations would be was not clarified (structural), leading to confusion among staff. Many participants also discussed human resource-related challenges such as limited staffing or being placed in positions that limited job performance. Experiences with different stakeholders, conflicting priorities, and the contradictory goals of control (prison) vs. access (DS/college) highlight the impact of the political frame. To address these challenges, participants leaned into the structural and political frames. Several of them focused on developing new processes or systems (structural), while others proactively reached out to and collaborated with multiple stakeholders (political).

This study also highlights the lack of institutions connected to adequate resources, indicating a need to lean into the human resources frame. From the list of potential survey participants providing CCEPs only 30% were AHEAD members. Becoming AHEAD members could address some of the needs of DS staff by giving them access to resources to address barriers in non-standard learning environments (i.e., CCEPs).

Finally, and of great importance, is an understanding and acknowledgement by college DS professionals of the impact of the criminal justice system on marginalized or underserved populations and how this intersects with the impact of disability and inclusion. In the U.S., Black Americans make up half the entire prison population in 12 different states (Nellis, 2021). The incarceration rate in U.S. state prisons of Black Americans is almost five times that of White Americans while the rate of incarceration of Latinx Americans is 1.3 times that of White Americans (Nellis, 2021). Compounded discrimination (Wright, 2024) and barriers exist for those who have multiple intersecting identities. Actively engaging in disability access in CCEPs is essential to upholding the profession's values of social justice, equity, and inclusion.

Limitations and Implications for Future Research

This study has several limitations. Generalizability is limited due to the low survey response rate (20.89%, or 33 of 158 invited participants) and restrictive eligibility requirements (i.e., focusing on only public community colleges). Future research should explore service provision in CCEPs with broader participant categories (e.g., four-year, public, private, two-year) and with larger sample sizes. Another limitation is that this study only looked at state correctional facilities, with no delineation for security level (e.g., minimum, medium, maximum) or type of facility (e.g., women's/men's). Future studies should explore how type of security or type of facility influences accommodation provision. Furthermore, this study only explored service provision from one perspective—the DS staff members' perspective. Future research should include the perspective of the CCEP administrators, faculty, and staff; the community college administration; and the prison administration to provide a more holistic picture. More importantly, future research must include the perspective of the DSIs to better understand the effectiveness of services provided and alignment of accommodations with DSIs' needs.

Overall, this study points to a need for more research in this area. While this study provides an overview of services provided, exploring why certain accommodations could not be provided went beyond the scope of this study. More information is needed to better understand the accommodation process in CCEPs and identify opportunities for improvement.

Implications for Practice

Bolman and Deal's (2013) frames can provide guidance to DS staff, institutional leadership, and staff in correctional settings on how to improve accommodation provisions in CCEPs. First, focusing on the political frame, the findings highlight a need to increase collaboration among all CCEP stakeholders: the DS staff, the prison/DOC administration, the CCEP and community college faculty and administration, and the DSIs. For example, several survey respondents indicated the CCEP does not inform or contact the DS staff that a student needs disability services. The remedy for this lack of notification is to bring the DS office into the collaboration structure.

Second, focusing on the human resources frame, the findings indicate that DS staff should be given the information needed to perform their jobs well. A basic understanding of the CCEP type and format will help the college DS professional anticipate possible barriers for students and service provision inside the facility. For example, it is important to know in addition to college for-credit programs, some colleges are providing non-credit development programs (e.g.,life skills, art), while other colleges are contracted to provide Adult Basic Education or HiSET/GED preparation classes. The format of the CCEP is critical to understand potential barriers. These formats can include correspondence programs (USPS delivery of paper materials), in-person programs, prison-provided tablet based programs using prison managed systems, synchronous or asynchronous programs (streamed lecture or use of videos viewed by students), and even Inside-Out classes where half of the class are general campus enrolled students who travel to the prison site and join the class in person with half of the class being students who are incarcerated. Each of these types and formats raise complex barriers for the various types of accommodations that the DS professional may routinely provide for the general college student. However, while nothing about providing accommodations inside the prison is routine, understanding the potential barriers and proactively anticipating steps needed to provide routine accommodations is critical for student access.

Third, stakeholders need to focus on the structural frame by developing processes and procedures to ensure accommodation provision in CCEPs. Specifically, the college DS office should work with the CCEP to develop strategies of informing DSIs about disability services availability. Within the prison setting, there is limited or no access to the college DS webpage for awareness of service availability or how to request accommodations. Thus, the DS office and the CCEP staff should work to develop multiple contact strategies, including printed announcements in the education area, syllabi statements, DS applications to use at placement testing or new student orientations, and DS information in the student handbook.

Another step to facilitating access inside the CCEP through a structural perspective is to recognize process and procedures will need to be adapted to the non-standard prison setting. For example, staff need to question what processes require technology that may not be available in a correctional setting and what alternatives exist to the use of technology. Staff may also need to identify alternate ways to gain access to documentation such as a release to have a family member or the student's previous high school share the documentation with the DS office.

To summarize, providing accommodations on college campuses can be difficult. Providing accommodations for college programs in prisons is complex and complicated, but not impossible. Utilizing Bolman and Deal's (2013) Four-Frames model, DS staff and other stakeholders can identify strategies to improve access to accommodations in CCEPS through collaboration with all stakeholders, proactive investigation and understanding of the CCEP setting and rules, and creative problem-solving.

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How Universities Prepare Disabled College Students for Employment: Disability Service Professionals' Perspectives

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Abstract

Although numerous researchers have identified the importance of meaningful collaboration between offices of disability resources (ODRs) and career services (CS) offices as a means of reducing employment disparities among disabled college students (e.g., Kutscher et al., 2019; Kwon et al., 2023; Liu et al., 2024; Pillette et al., 2019), little remains known about how disability service (DS) professionals understand their roles in preparing disabled college students for employment. Through a series of semi-structured interviews ($n = 7$) and a larger focus group interview (n =14 participants), this study investigated DS professionals' perceptions of the career development opportunities available to disabled students on their campuses, as well as DS professionals' understanding of their role in supporting students' career development. Findings emphasized (a) a common belief that ODRs served as a campus-wide authority on disability, (b) collaboration with CS offices was hampered by practical considerations despite being valued, (c) ODR career development support varied substantially by institution, and (d) a sense of responsibility for career development balanced with the need to prioritize limited resources. Practical implications and recommendations for strengthening DS and CS professionals' roles in supporting disabled students' career development are discussed.

Keywords: disability services, career services, disabled college students, career development

Over 80% of incoming college freshman report choosing to attend college because it will improve their employment options (Stolzenberg et al., 2020). Such motivations may be especially salient for disabled college students (Bartolo et al., 2023), given data showing that individuals with disabilities experience inequitable life outcomes when compared to those without disabilities (Bureau of Labor Statistics, 2024; Newman et al., 2011; Soria et al., 2022). Evidence indicates that a college degree can reduce some employment disparities among graduates, with recent disabled graduates and those without disabilities reporting no statistically significant differences in employment rates (Phillips et al., 2022). At the same time, such statistics can mask ongoing inequities experienced by disabled employees, who experience lower job satisfaction and wages, are more likely to be underemployed, and are less likely to be employed in a career related to their college major (Henly & Brucker, 2020; National Center for Science and Engineering Statistics, 2023; Phillips et al., 2022).

Seeking to address gaps in the employment outcomes of disabled graduates, many researchers have recommended deepening collaboration between offices of disability resources (ODRs) and career services (CS) offices (e.g., Kutscher et al., 2019; Kwon et al., 2023; Liu et al., 2024; Pillette et al., 2019). However, little research has examined DS professionals' perceptions of how such collaboration occurs within diverse higher education contexts. Moreover, with recent updates to professional standards for disability service (DS) professionals (e.g., Lalor et al., 2023; Madaus & Kunkes, 2023), little is known about how DS professionals themselves conceptualize their role with regard to supporting career preparation among disabled college students. Therefore, the purpose of this qualitative study was to explore DS professionals' perceptions of the career development opportuni-

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ties, including those offered by CS offices, available to disabled students on their campuses, as well as DS professionals' understanding of their role in supporting students' career development.

Career Development of Disabled College Students

In the United States, about 68% of available employment opportunities require some form of postsecondary education and/or training beyond the secondary level. It is anticipated that this requirement will increase to 72% nationally by 2031, thus making a college degree an increasingly important pathway to participation in the labor force (Carnevale et al., 2023). Despite promising findings that recent college graduates with and without disabilities participate in the labor force at similar rates (approximately 80%; Phillips et al., 2022), significant and persistent gaps remain in the broader workforce. For example, 32.8% of disabled individuals with bachelor's degrees participate in the labor force compared with 76.5% of those without disabilities (Bureau of Labor Statistics, 2024). Additionally, even when employed, disabled college graduates continue to experience disparities. Specifically, they are less likely to obtain a job related to their degrees or to hold full-time employment status (National Center for Science and Engineering Statistics, 2023; Phillips et al., 2022), and they earn significantly less than their peers without disabilities, with reported gaps in median wages ranging from $6,000 to $11,000 annually (Henly & Brucker, 2020; National Center for Science and Engineering Statistics, 2023). Facing restrictive caps on income, disabled college graduates who rely on federal benefits to cover the cost of attendant care may choose to leave the workforce in order to maintain access to those needed services (Parker & Markle, 2021). Such disparities reflect the systemic barriers faced by graduates with disabilities as they work to leverage their college degrees into fulfilling careers.

Given systemic barriers to fulfilling employment for disabled individuals, targeted career development support can be especially valuable as students prepare to pursue employment after college. For example, disabled individuals may be uncertain when to best disclose their disability in the employment process, especially if anticipating discriminatory employer attitudes (Bonaccio et al., 2020; Liu et al., 2024). While in the past disclosure was described as primarily relevant to individuals with less-apparent disabilities, a shift toward virtual interviews and onboarding processes following the COVID-19 pandemic means that individuals with more-apparent disabilities may also find themselves grappling with disclosure decisions. Unfortunately, individuals with disabilities may face negative employer attitudes at any point in the employment process (Bonaccio et al., 2020). Given these challenges, career development support may be essential for disabled students (Roessler et al., 2007), with previous literature identifying the need for training in disability-related self-advocacy skills (e.g., Izzo et al., 2011; Liu et al., 2024) and navigating workplace disability disclosure (e.g., Antonelli et al., 2018; Goodall et al., 2022; Izzo et al., 2011). Although such training will not address barriers at a systems level, tailored career development may equip individual students to effectively navigate such barriers.

Disabled college students may not receive tailored career development support (Liu et al., 2024), however. In order to facilitate career development among college students in general, many institutions have established CS offices. (For clarity, we refer to the programs provided by CS offices as *career services*, and the individuals providing those services as CS professionals. Students' *career development* or *career preparation* may occur through the provision of career services but can also occur through programming or services provided outside of CS offices, such as through ODRs or with other faculty.) CS offices are known for helping students work to secure internships and job opportunities that align with their interests through activities such as resume reviews, job fairs, and interview skills trainings (Thompson et al., 2023). Although CS offices are specifically designed to help students explore career options and apply for jobs, disabled students may perceive that CS professionals are not adequately prepared to address disability-specific career needs (Mask & DePountis, 2018). Given such challenges, scholars have called for strengthened collaboration between CS and DS professionals to better serve disabled students (Kwon et al., 2023; Liu et al., 2024). Despite these calls, researchers have yet to investigate DS professionals' perceptions of the disability-specific career development opportunities available on campus and how they view their role in supporting students' career preparation.

DS Professionals and Career Development

Within the higher education landscape, DS professionals play a crucial role in providing academic accommodations and support services (National Center for Special Education Research, 2023). However, it cannot be assumed that the academic accommodations or supports experienced within the higher education context, nor the self-advocacy skills developed, are generalizable into an employment context. Preparing disabled students for the demands and opportunities of the workplace requires a multifaceted approach that extends beyond the realm of academic support. Researchers have historically described the disconnect in career-specific knowledge within ODRs (e.g., Hennessey et al., 2006) and noted that liaison-type approaches between ODRs and CS offices may be insufficient to fully meet the career development needs of disabled students (Roessler et al., 2007). Notably, cross-training approaches may offer a more promising pathway for developing and leveraging mutual expertise, with one community of practice recently reporting benefits across DS and CS professionals, as well as students (Parker et al., 2024).

With some asserting that student needs cannot be met in the absence of career development training for DS professionals (Roessler et al., 2007), it is important to consider the expectations and professional boundaries of DS professionals' roles. To better understand connections between ODRs and career preparation, it may be useful to consider the Association for Higher Education And Disability's (AHEAD) guiding standards for ODRs and DS professionals. AHEAD's recently updated code of ethics and program and professional standards reflect an expanded understanding of ODRs, as they move toward a social justice focus, advocate for increased accessibility across campus, and serve students with a greater variety of disability types (Madaus & Kunkes, 2023). Nevertheless, the updated code of ethics, professional competencies, and program standards give minimal attention to career preparation. Specifically, ODRs are encouraged to engage with other offices on campus, including CS offices, through collaborative partnerships and technical assistance or training (AHEAD, 2021). Thus, calls to expand the role of DS professionals to additionally support students' career development may not be aligned with professional expectations for the field. It is important to understand how DS professionals describe the provision of career preparation services to disabled students on their campus, as well as how they view their offices as supporting that work.

Conceptual Framework

AHEAD's revised standards, competencies, and ethical code outline the organization's core principles and serve as a guide for best practices in supporting disabled students within higher education. Lalor et al. (2023) analyzed the three documents and identified four key themes. We drew on these themes as a framework for investigating DS professionals' perspectives regarding their role in collaborating to support career development among disabled college students. The first theme focused on social justice and highlighted the importance of a paradigm shift within disability services organizations. Specifically, the standards and ethical code encourage DS professionals and ODRs to increasingly emphasize intentional strategies that proactively dismantle systemic barriers experienced by disabled students and foster inclusive environments. The second theme focused on disability identity and intersectionality, recognizing the multifaceted nature of disability experiences and the importance of considering factors like race, religion, gender, sexual orientation, age and social class. This theme underscored the need for DS professionals to move beyond a one-size-fits-all approach. The third theme focused on the evolving nature of disability service provision and emphasized the need for reflexivity and commitment to continuous evolution within the field. The fourth theme focused on the need to cultivate a campus culture that values access, equity, and inclusion for disabled students. This theme emphasized the importance of moving beyond the role of DS professionals as the sole point of contact for disability support, which may also have implications for the 65% of disabled college students who choose not to disclose their disability to their institution (Newman & Madaus, 2015). Given the relevance of the four themes reflected the priorities of AHEAD, we used these themes as a lens for investigating DS professionals' perceptions of career preparation support for disabled students. Specifically, we were interested in the availability of disability-specific career preparation, as well as how DS professionals conceptualized their role in supporting disabled students' career development.

Methods

This study used a basic interpretive qualitative design (Merriam & Tisdell, 2016) to address the following research questions:

1. What are DS professionals' perceptions of the career development services, including career services, offered on campus and to what extent do professionals believe those services meet the needs of disabled students?
2. How do DS professionals understand their role in supporting or preparing disabled college students for post-college employment?

Participants

Demographic information about focus group and interview participants is provided in Table 1. The focus group included 14 participants from 10 state-funded postsecondary education institutions within a single state. These institutions include small institutions (enrollment of less than 10,000 students),

Table 1

Characteristics of Participants and Institutions

Characteristic	Focus Group		Interviews	
	n	%	*n*	%
Institution Size				
Small (total enrollment less than 10,000)	2	20%	1	20%
Medium (10,000 to 20,000 students)	4	40%	3	40%
Large (20,000 to over 60,000 students)	4	40%	2	40%
Total Institutions	10		6	
Participant Title				
Director	8	57.1%	5	71.4%
Associate Director	4	28.5%	2	28.5%
Accessibility Consultant	1	7.1%	0	
Testing Coordinator	1	7.1%	0	
Participant Experience				
Less than 10 years	2	14.2%	2	28.5%
10-20 years	2	14.2%	2	28.5%
Over 20 years	2	14.2%	2	28.5%
Not reported	8	57.1%	1	14.3%
Total Participants	14		7	

Note. Number of institutions does not match the number of participants because in some cases two professionals from a single institution participated in the focus group or interview. Percentages may not sum to 100% due to rounding.

medium-sized institutions (enrollment of approximately between 10,000 and 20,000 students), and large institutions (enrollment between 20,000 and over 60,000 students). Furthermore, individual interviews were conducted with seven DS professionals from six institutions. Among these professionals, two came from large institutions, three from medium-sized institutions, and one from a small institution. The participants' experience at their institutions varied from 3 to more than 20 years. In particular, 2 of the 7 participants had experience of less than 10 years, 2 of them had experience of between 10 and 20 years, and 2 had experience beyond 20 years. One person did not share the length of their experience. Five of the seven interviewed participants were in the director role, while two were in the associate director role. Demographic information on race or ethnicity was not collected, and individual-level demographics are not being reported to protect the confidentiality of the participants.

Data Collection

Data were collected in two stages. First, DS professionals were invited to participate in a 90-minute, in-person focus group, which took place at an annual meeting. The meeting, as well as the research study, was funded by a foundation that offers a scholarship for disabled college students with demonstrated financial need. Participation in the focus group was voluntary, and attendees were assured that their relationship with the funder would not be affected if they chose not to participate. Fourteen of the 15 attending DS professionals provided signed consent to participate. The focus group was led by two members of the research team and was recorded using multiple digital recording devices placed around the room. Questions included, “What kinds of college services do you think are most helpful in preparing students with disabilities for employment after college?”

Following the focus group, we emailed 16 individuals (i.e., all attendees, plus any directors of ODRs who were unable to attend the meeting), inviting them to participate in an individual interview. Seven responded and chose to each participate in one, 60-minute interview via Zoom. The first interview was conducted by all three members of the research team to support consistency across interviews, and all other interviews were conducted by two members of the research team. Interview questions included, "What kinds of services are offered through your office?" and "Can you tell us more about how you work with career services or other offices on campus to support students with disabilities?" Audio recordings from both the focus group and interviews were transcribed using Otter.ai, a transcription service that uses artificial intelligence technology. All transcripts were checked for accuracy by a member of the research team.

Data Analysis

Coding and thematic analysis took place through two phases (Saldaña, 2021). During first-cycle coding, each member of the research team independently read all transcripts and identified emergent codes. The team then met to discuss codes and developed a common code book with 26 mutually exclusive codes. During second-cycle coding, transcripts were uploaded into a qualitative data management system (i.e., Dedoose) and the code book was consistently applied. Specifically, members of the research team worked individually or in partners to apply codes to the focus group and interview transcripts. In alignment with the qualitative approaches implemented in this study, interrater reliability was not calculated. Instead, the first author reviewed the coded transcripts, making note of any coded excerpts that required further discussion; the few discrepancies were then discussed with the full research team and resolved through consensus. Thematic analysis was conducted by identifying groups of related codes and analyzing patterns across coded excerpts. For example, seven codes were identified as related to a theme of ODRs being a campus-wide authority on disability: (a) requesting accommodations; (b) accommodation types; (c) diversity, equity and inclusion; (d) name of ODR; (e) serving campus needs; (f) disability-specific programming; and (g) serving student needs. (Code book is available upon request to the first author.) Excerpts tagged with these codes were pulled and transferred to a data display in which the research team could review the coded excerpts by participant. Researchers initially independently reviewed the extracted excerpts and then met to discuss potential patterns and themes. Overall, this approach prompted the team to consider both confirming and discrepant perspectives when developing themes and ensured that themes did not reflect the views of a single participant.

Researcher Reflexivity

Although none of the authors have worked as a DS professional or in an ODR, all authors have experience and a commitment to understanding disability as diversity in higher education. The first author identifies as a non-disabled, white woman who teaches in a master's program that prepares graduates for careers working with transition-age youth and young adults with disabilities, including careers as DS professionals. The second author identifies as a white, non-disabled woman who offers expertise as a higher education administrator, as well as extensive experience in application of disability policy and practice. The third author identifies as an invisibly disabled, white woman who previously received ODR support as a student and who now centers her research on disability in higher education. The fourth author identifies as a non-disabled woman who is an international student pursuing a doctoral degree in special education and disability studies. She has experience working in bachelor's and master's programs that prepare graduates for careers working with children and young children with disabilities. The fifth author, a neurodivergent African American woman pursuing a doctoral degree in special education and disability studies, brings a critical lens informed by experiences navigating higher education. As a research team, we chose to use identity-first language in our manuscript because it is the language generally preferred by the disabled college students and colleagues with whom we work.

Findings

Theme 1: DS Professionals View ODRs as a Campus-Wide Authority on Disability

Focus group and interview data indicate that ODRs serve as a campus-wide authority on disability. Consistent with AHEAD standards and competencies, all DS professionals described their primary role as ensuring that disabled students receive reasonable accommodations for their documented disability, in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. One participant explained, "We administer probably 7,000 exams to students a year. We're coordinating the intakes for students who are applying for accommodations [and conducting] either student negotiations or the faculty explanations" (Susan). Examples of accommodations included testing accommodations (e.g., reduced distractions, extended time), interpreting services, or ensuring course materials were accessible (e.g., video captions, Braille, audio books). Some DS professionals indicated their emphasis on assistive technology in order to support students' future independence. One participant noted,

> We try to encourage more in the realm of independence, rather than the reliance of a human. Because as you gradually transfer into the workforce, that's not going to be an option, so this is the place to learn. So we're really big into assistive technology (Amy).

However, DS professionals shared a level of expertise that extended beyond the provision of reasonable accommodations as they described taking an active role in campus outreach. As one professional explained, “The Office also has a fairly extensive outreach program about who we are and what we do. What is ableism? How do you become a disability ally? So that’s what we’re focused on” (Susan). Similarly, another professional shared that their outreach focused on “disability awareness…highlighting disabled students’ lived experiences, education on important disability rights” (Pricilla). DS professionals described providing training during faculty onboarding, offering workshops to career service professionals, and helping to shape institution-wide policies. One professional described, “The other aspect of it is more of that policy thing, right? So right now we’re looking at faculty training and faculty onboarding” (Samantha). At times, DS professionals described these outreach efforts as part of their institution’s broader commitment to diversity, equity, and inclusion, but it is important to note that student programming and campus outreach varied significantly by institution.

Theme 2: Collaboration with CS Offices is Valued but Hampered by Systemic Realities

The outreach described in the previous theme extended to CS offices. Overall, participants described collaborative relationships with CS professionals. One participant shared, “We do training for the career center. So I do a whole presentation about understanding disabilities, some accommodations that they can provide. We do have a good relationship with the career center” (Amy). Another participant described asking CS professionals to present to students working with the ODR, saying, “They come in and do presentations because they're the experts” (Drew). Almost all DS professionals who discussed their relationship with the CS office mentioned that the CS office had designated a liaison to work with the ODR. For example, one participant explained that when a student came to ODR for career development support, “We start with career services; we do some work with them. They have actually a career counselor that's assigned to different schools and departments. So we do have one that's assigned to us as well” (Mary).

While most participants described collaborating with CS offices, they also identified challenges when encouraging students to access career services support. As one participant stated during the focus group, “I do find that a lot of my students don't take advantage of the career center.” Participants attributed this to students’ hesitation to work with a new office that might have a less personal feel than the campus ODR. Participants at the focus group went on to say, “They get lost between our office and career services and they get nervous because it's very corporate.” Other participants felt students avoided contacting career services because, “Our students are tunnel vision on graduating and nothing else” (focus group). For students who chose to seek support from career services, participants noted that career service professionals were frequently unaware that a student had a disability, unless the student chose to disclose directly to the professional. Several participants identified this as a challenge, noting, “We can't share that information unless the student decides to disclose that” (Drew). However, a DS professional at one institution indicated they addressed the problem by asking new students registering with ODR to sign a referral form if they were interested in working with career services. ODR passed along the referral forms to career services professionals, who then reached out to students to schedule appointments.

In addition to students’ hesitation to connect with CS offices, collaboration between the two offices could be hindered by gaps in knowledge, lack of training, and turnover within CS offices. For example, some participants expressed doubt that CS offices had the resources and knowledge to meet the individual needs of their students. As one participant stated, “My students need more attention than what the Career Services can provide, right? They need more help with resumes, they need more help with interviewing. They need more help with searching for jobs and how to search for jobs” (Mary). Some DS professionals noted that the experience and knowledge of their liaisons varied, with some liaisons demonstrating a strong background in disability-related employment issues and others requiring additional training from DS professionals. For example, one participant shared, “the only barrier is lack of knowledge; they really don't have like an ADA expert” (Amy). Relationships with liaisons could be further complicated by high turnover in career services offices, which was reported to be worse following the pandemic. One participant shared, “This is probably like the fourth or fifth liaison we've had in the last three years. With COVID, the turnover right now is insane” (Amy). Thus, while DS professionals expressed a desire to leverage their relationships with CS professionals, they also identified a number of challenges that could prevent full collaboration.

Theme 3: ODR Support for Career Development Varies Widely by Institution

Seeking to address their students' individualized career-development needs, some ODRs worked to incorporate career development opportunities into the services offered by their office. Some DS professionals shared that their ODR offered career development services or programs to support skills needed for internship and job applications, interviews, and placements. For example, some professionals shared that their office supported students with applications, resumes, cover letter writing, and interview practice. Occasionally, DS professionals reported that they were able to embed career development activities within programming they offered to disabled students. For example, one participant described programming for students with autism, saying, "It has two career courses built into it. Along with interviewing and resume writing, we really work on networks and even networking through digital sources" (Drew).

Several other DS professionals shared that their office was involved in or was in the process of restarting their involvement with the federal Workforce Recruitment Program (WRP) managed by the U.S. Departments of Labor and State. The WRP connects federal and private sector employers with college students and recent graduates with disabilities who meet the eligibility criteria. Student applications for the program are accepted annually; accepted candidates are matched for internship or job placements. The Federal government indicates that this program is frequently a first step in developing a federal career. ODR professionals described the WRP opportunity as a partnership occurring primarily with their offices. However, in one case the DS professional mentioned that the CS office was also involved. The WRP was put aside by many institutions during COVID-19, but was in the process of starting back up. However, several DS professionals indicated that the summer internship program was time intensive, and expressed concerns about sufficient office support for recruitment and accepted students. For example, DS professionals were responsible for recruiting students and scheduling interviews, but found that few students were willing to complete the process or were open to traveling if internships were offered outside of the campus region. One participant stated, "We also have Workforce recruitment, which we've just kind of brought back to life. It's been on hold for about four or five years, because we just didn't have the staff to be able to handle it" (Amy).

Internships offered another type of campus-wide career development opportunity, although DS professionals reported that policies varied widely by institution. In some institutions, internships were required for all or nearly all enrolled students, regardless of program of study. At other institutions, internships or practicums were required for some programs (e.g., medicine, education) but not others. However, regardless of the institutional policy regarding internships for students, DS professionals described a limited role in supporting students in those internships. At one institution where students registered their internships as a university course, the internship coordinator would be informed of the student's academic accommodations as they would for any other course. However, at other institutions, DS professionals were only involved if a student required accommodations during their internship. Another DS professional indicated that, in the case of formal internship programs offered by an employer, the employer's human resources department would be responsible for providing any workplace accommodations. Several professionals noted a disconnect between the academic accommodations their students received and the type of accommodations they might require in the workplace. One participant stated, "I can work miracles with a student's academic life, right. And I know that as I'm doing it, I'm like, this isn't gonna work when you get a job. Like, it just doesn't work that way" (Susan).

Theme 4: DS Professionals Express a Sense of Responsibility for Career Development but Have to Prioritize Resources

Despite varying opportunities for career development across the different institutions, all participants expressed that students who received support through their ODR would benefit from tailored career preparation services. Some DS professionals felt that the nature of various disabilities put some students at a disadvantage. For example, one professional stated, "Interviewing is so hard for many of my students. A lot of them have anxiety, depression, mental health issues that might prevent them from [articulating] their thoughts. In the interview process, often that's the only thing that is determining whether they get the position or not" (Mary). Other DS professionals identified a hidden curriculum with regard to successfully maintaining employment. One DS professional recognized, "There's so much social aspect to having a job, right, like, no one's going to tell you that you need to check your email every day, it's assumed. I feel like, for this demographic, these are students who potentially need to be told this, and we need to practice it, and we need to learn it, and we need it modeled" (Samantha).

Given such concerns, all DS professionals described a desire to support students' career development, but some felt their roles were constrained by a lack of resources or personnel. This feeling seemed to be especially true for small offices (which may employ only one or two DS professionals) or for professionals who were newer in their role. One participant who was the only professional staffing her campus' ODR shared:

> If I'm honest, I think sometimes a lot of what we're doing is managing expectations of what our office can do in terms of service. It's not that we want to just be the bare minimum of making sure they're accommodated in their classes. But being careful that students don't have an expectation that my office is able to be their academic success coach, their career counselor... It's a very strange balance, when you are a department of one. (Pricilla)

Although they expressed a desire to provide additional supports or services, these professionals ultimately focused on connecting students with other offices and resources available on campus.

Many DS professionals identified that their limited budgets presented a need for external funding (i.e., beyond their allocated office budget) to implement additional programs, including those focused on career development. For example, one campus leveraged external funding to hire a transition specialist for the ODR. This participant explained:

> I really felt the need to have somebody on my staff. And we also will help them with postgraduate work. So [if] they wanted to go on to graduate school, doing applications, research schools, things like that. I have one person for, you know, 600 students (Mary).

Another participant tapped into an external grant to fund a program specifically for students with autism that incorporated career development activities. Other DS professionals described a desire to offer such programs or expanded services, but indicated that they lacked resources to do so.

Discussion

This study investigated DS professionals' perceptions of career development opportunities available to disabled students on their campuses, as well as their perceived roles in supporting career preparation for the students served by their ODR. Findings revealed that DS professionals saw a need for tailored career development and spoke about their role in supporting disabled students' career development in ways that were consistent with the revised AHEAD competencies and standards (AHEAD, 2021; Lalor et al., 2023). Specifically, DS professionals emphasized the importance of collaboration with other campus offices, including CS offices, and provided training for professionals in those offices. They also described the importance of disability advocacy on campus and how this served to raise awareness about the rights of disabled individuals. However, many DS professionals expressed a sense of responsibility for career preparation that went beyond these roles. Several DS professionals shared that their ODR provided career preparation services directly to students, such as offering support with writing resumes or developing interview skills. At the same time, DS professionals varied in terms of the resources they had access to, in order to promote individualized career development. Some ODRs received sufficient support from their institution to provide supplementary career development services (e.g., resume writing) while other directors of ODR tapped into external funding to develop specific programming or hire a coordinator specifically focused on post-college transition. DS professionals in smaller offices with fewer resources, however, grappled with how to manage students' expectations regarding the support their ODR could realistically provide when it came to career preparation.

Together, these findings suggest that disabled students' access to career preparation opportunities are inconsistent, with services varying significantly across institutions. For example, DS professionals described varying institutional approaches to internships, with some institutions requiring internships for nearly all students and others with only a handful of programs with internship requirements (e.g., nursing placements or student teaching). Participation in work-based experiences, such as internships, has been linked to positive employment outcomes after college (Liu et al., 2024), but DS professionals described a limited role in preparing students to obtain and be successful in internship experiences. DS professional support may be particularly important for students whose disabilities may make relocation for internship opportunities challenging due to a need to maintain access to medical or other services and/or social support, as well as the time or resources necessary to obtain accessible housing or learn to safely navigate the community (e.g., Markle et al., 2024). In the current study, DS professionals provided support if students came to their office for internship advice, but described a lack of systemic involvement in programmatic internships. Thus, it is unclear if disabled students are receiving guidance to leverage the full potential of their college internship experiences.

It is relevant to note AHEAD's (2021) fourth competency focuses on maintaining professional and personal balance, with *working within the scope* of one's role listed as the first key attribute (4.1). Given that supporting the career development of disabled college students is not currently explicitly identified as a competency for DS professionals, it is perhaps meaningful to consider how DS professionals can promote equitable employment outcomes for disabled college students without overstretching their own capacity and/or the capacity of their ODR. As recommended in previous literature (e.g., Kwon et al., 2023; Liu et al., 2024), collaboration with CS offices, who are already responsible for the career development of all students on campus, offer an obvious opportunity for partnership that would fall within the scope of DS professional competencies.

Results from the current study, though, suggest a number of barriers that could limit the efficacy of collaboration efforts with CS offices, including high turnover rates, lack of disability-specific knowledge among CS professionals, student reluctance to reach out to an unfamiliar office, and the need to protect student confidentiality. Thus, it may be necessary for DS professionals to approach such collaborations from the perspective of capacity building rather than a more traditional partnership (Parker et al., 2024). Most participants described having a liaison in their institution's CS office. The benefit to this approach was that it provided both DS professionals and disabled students with a specific contact who, in theory, had specialized knowledge and skills to support employment considerations unique to disabled individuals. In practice, however, DS professionals were often the ones providing training to their liaison, with the liaison model potentially becoming a single point of failure when the liaison changed roles or left the institution. It is worth noting that the National Association of Colleges and Employers (NACE)—an organization dedicated to professionals focused on career development for those with a college education, including CS professionals—mentions disability in their professional program standards for CS offices. Specifically, CS offices must be familiar with disability law, must not discriminate against persons with disabilities, and CS professionals should be prepared to work with people with disabilities (NACE, 2019). However, these standards do not explicitly identify the need for CS professionals to be aware of considerations that are specific to disabled individuals (e.g., disclosure, requesting accommodations) who are preparing for a career. Furthermore, the experiences shared by this small sample of DS professionals suggests that despite these standards, CSO offices may not be meeting the needs of disabled college students.

Implications for Practice

The findings of this study support several recommendations at for improving access to and the quality of career development opportunities for disabled college students. At the national level, there is a need for professional organizations to consider the scope of professionals' role in promoting disabled students' career preparation. While NACE currently mentions disability in its professional standards, it is likely that these standards do not go far enough in providing CS professionals with a clear understanding of how disability experiences may impact a college student's job search and employment experiences. Further, although career development is not currently included in the AHEAD program standards and competencies, it may be meaningful for AHEAD and NACE to collaborate around this issue.

Importantly, ODRs need not wait for change at the national level to advocate for change on their campuses (Lalor et al., 2020). At the institutional level, DS professionals could work with CS offices to put processes in place that would facilitate information sharing across the offices, such as offering students the opportunity to sign information-sharing agreements if they would like their ODR to communicate with the campus CS office (Parker et al., 2024). Further, given the potential shortcomings of the liaison model, DS professionals may consider advocating for all CS professionals to possess sufficient disability-specific knowledge to support disabled students in pursuing their career goals. By offering training for all CS professionals, DS professionals help to ensure that students will receive thoughtful support regardless of whom they connect with in their campus CS office. Where possible, deeper connections between DS and CS offices through cross-training and the development of a community of practice may promote effective, systemic collaboration with longer-term implications for practice (see Parker et al., 2024). In addition to deepening opportunities for collaboration with CS offices, DS professionals may find it meaningful to advocate for the development of more systematic opportunities for ODR involvement in preparing students for internship experiences, either with specific departments or institutionally (Liu et al., 2024).

Finally, although individual DS professionals may have varying levels of influence at the institutional and/or national levels, there are steps DS professionals can take within their own offices to support promote students' career development. As explicitly noted by participants in this study, academic accommodations do not always generalize to workplace contexts; thus, when discussing academic accommodations with students, DS professionals may encourage conversations regarding reasonable accommodations that could be appropriate in both academic and employment settings (e.g., technology). Similarly, recognizing that many college students are already working while studying (National Center for Education Statistics, 2022), DS professionals can incorporate a discussion of workplace or internship accommodations when identifying academic accommodations each semester. Beyond such shifts in conversations about accommodations for individual students, DS providers may also consider approaches they might take within their office. Specifically, if their ODR is currently offering career-relevant programming for students with specific disabilities (e.g., autism), DS professionals may consider if or how such programming could be relevant and expanded to include students with other disabilities. ODRs may also find it helpful to look for grant opportunities that could allow the office to offer disability-specific career preparation services or programming without overstretching the capacity of DS professionals. Furthermore, it was notable that few DS professionals described meaningful collaboration with Vocational Rehabilitation (VR), although VR is tasked with preparing disabled individuals to obtain and maintain meaningful employment. Thus, individual DS professionals could continue to cultivate a collaborative relationship with VR and support students in understanding the potential benefits of connecting with VR. Additionally, the federal government has developed the federal Workforce Recruitment Program, which specifically focuses on connecting disabled college students and recent graduates with internships and jobs in the federal government. Any disabled college student is invited to apply, but they must attend a participating college or university. Thus, DS professionals seeking to expand available career development opportunities might consider registering as a participating school. Finally, DS professionals can further their professional development and contribute to professional practice by joining AHEAD's recently renewed the Career Planning Knowledge and Practice Community (KPC), which focuses on supporting DS and CS professionals in engaging in employment preparation activities (AHEAD, n.d.).

Limitations

Though participants worked within institutions that reflected diversity in terms of size and focus, all institutions were part of the same state university system. Furthermore, specific contextual factors, such as the strains facing higher education recovering from the COVID-19 pandemic (Soria et al., 2023) or more recent policy challenges to diversity, equity, and inclusion (Gretzinger et al., 2024) may limit the applicability of the findings in current contexts. Recognizing that the purpose of qualitative research is not to promote generalization, we have sought to offer thick descriptions of participants' perspectives to support readers in drawing conclusions about the relevance of these findings in their own professional contexts (Merriam & Tisdell, 2016).

Conclusion

Disabled college students view their postsecondary education as a critical stepping stone to their future employment (Bartolo et al., 2023), but they may encounter challenges specific to the disability community, including disclosure or requesting accommodations (Bonaccio et al., 2020). Despite these known challenges, however, disabled students may receive little disability-specific career development support from their institution of higher education. While partnerships between ODRs and CS offices may offer a promising pathway for tapping into existing resources to better support disabled college students, institutional realities may prevent effective collaboration. There is a need to rethink traditional collaborative structures to ensure that disabled college students receive tailored career services that will empower them to fully leverage their postsecondary education into a fulfilling career.

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Acknowledgement

Data collection and analysis were sponsored by the Johnson Scholarship Foundation. We have no known conflict of interest to disclose.

Journal of Postsecondary Education and Disability, 2025, 38(4), 701-715

Individualized Comprehensive Support: Retention and Belonging Beliefs of College Students with Disabilities

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Abstract

College students with disabilities encounter unique challenges that impede their academic success and personal well-being. Despite rising enrollment in postsecondary institutions, students with disabilities continue to experience lower retention and persistence rates than their peers without disabilities. Although colleges and universities provide disability support services, these standard accommodations may not suffice for all students. This study examined the impact of individualized comprehensive academic support programs, including tutoring, on attitudes toward retention and belonging among college students with disabilities. The study involved 110 students with disabilities from two midwestern universities, categorized by their enrollment in support programs and tutoring status. A survey measured students' attitudes toward retention and belonging, along with their beliefs about integration, retention, and self-determination. Factorial ANOVA indicated that tutoring significantly enhanced students' integration beliefs and overall attitudes toward retention and belonging. Logistic regression analysis indicated that integration beliefs were significant predictors of enrollment in comprehensive support programs and tutoring. Findings highlight the benefits of individualized comprehensive academic support programs and tutoring in fostering social and academic integration, self-confidence, and a sense of belonging among college students with disabilities. Implications for higher education practice and recommendations for future research are provided.

Keywords: college students with disabilities, retention and persistence, fee-based individualized academic support programs, integration beliefs, sense of belonging

Introduction

College students with disabilities encounter various challenges that negatively impact their academic success. Despite an increase in enrollment of students with disabilities in postsecondary institutions, from 11.1% in 2011-12 to 19.4% in 2015-16 (U.S. Department of Education Institution of Education Sciences National Center for Education Statistics, 2019), this population continues to experience lower retention and persistence rates compared to their peers without disabilities (Lee et al., 2015; Newman et al., 2011). Newman et al. (2011) found that 41% of students with disabilities completed their degrees within eight years, compared to 52% of their peers without disabilities.

Students with disabilities face unique challenges in higher education, including adjusting to new levels of independence (Hadley, 2009), meeting coursework expectations (Janiga & Costenbader, 2002), and developing self-determination (Frieden, 2004; Hong et al., 2007; Rosenbaum, 2004). These challenges align with seminal retention theories, including Vincent Tinto's (1975) model of student departure and William Spady's (1970) dropout process model, which highlight the importance of both academic and social integration for student success. Additionally, Terrell Strayhorn's (2019, 2023) framework of college students' sense of belonging is particularly relevant for marginalized groups, including students with disabilities, emphasizing the need for social inclusion in unfamiliar environments like the first year of college. Strayhorn's work demonstrates that targeted interventions can enhance students' sense of belonging, leading to improved educational outcomes (Strayhorn, 2023).

Although colleges and universities provide disability support services and accommodations, these

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may not be sufficient for all students. This study investigates the impact of individualized comprehensive academic support programs, which offer more intensive and personalized assistance, on attitudes toward retention and belonging among college students with disabilities. Individualized comprehensive support programs offer tailored academic assistance beyond standard accommodations, providing targeted interventions such as tutoring and coaching to address students' unique needs.

The purpose of this study was to examine whether participation in individualized comprehensive support programs and tutoring services affects attitudes toward retention and belonging compared to students with disclosed disabilities who do not receive such support. By understanding the effectiveness of these interventions, institutions can better support students with disabilities, potentially improving their retention and persistence rates.

This article is derived from the author’s doctoral dissertation (Depinet, 2023). Sections of this paper, including the literature review, methodology, results, and discussion, draw heavily from that work.

Fee-Based Individualized Comprehensive Academic Support Programs

Individualized comprehensive academic support programs provide personalized assistance to students with specific learning disabilities, attention deficit hyperactivity disorder (ADHD), and other related difficulties, extending beyond standard academic accommodations. These programs offer services specifically tailored to each student's individual needs, addressing academic, social, and emotional aspects while leveraging individual strengths and weaknesses. Common features include individual learning specialists, personalized academic support plans, weekly one-on-one meetings focused on academic progress and accountability, organizational skills training, and individualized tutoring. These comprehensive support programs aim to provide academic and emotional assistance, facilitate students' transition to higher education, foster independence, and enhance self-esteem, self-advocacy, and self-determination (Troiano et al., 2010), ultimately improving persistence and success. The level of support is dynamically adjusted as students’ progress through their academic careers, with the ultimate goal of promoting academic success and well-being.

A distinctive feature of these programs is the individualized tutoring provided. In contrast to group tutoring sessions available to the general student population, these programs typically provide one-on-one tutoring tailored to each student’s specific course needs. This personalized approach has been shown to be particularly beneficial for students with learning disabilities, who often prefer individual sessions due to challenges with self-confidence and academic self-assuredness (Hadley, 2009; Koch et al., 2014; Koch et al., 2016).

Another important and distinctive feature of these programs is that many operate on a fee-based model to sustain their intensive services. While the benefits from these services arise from their comprehensive and individualized nature rather than their funding structure, the cost may limit accessibility for students from lower socioeconomic backgrounds, raising equity concerns (Marshak et al., 2010). The potential financial barriers highlight the need for institutions to consider strategies for making these valuable services accessible to all students who could benefit from them, regardless of socioeconomic background.

This study investigates the impact of individualized comprehensive academic support programs on attitudes toward retention and belonging among college students with disabilities, as well as the role specific student statuses might play in predicting these attitudes. To address this aim, the following research questions were formulated:

1. Is there a statistically significant difference in attitude toward retention and belonging of students with identified disabilities based on tutoring status (receiving tutoring, not receiving tutoring) and enrollment status (enrolled, not enrolled) in an individualized comprehensive academic support program?
2. (a) Can enrollment status (enrolled, not enrolled) in an individualized comprehensive academic support program predict a student with a disability’s attitude toward retention and belonging, retention belief, integration belief, and self-determination belief?
   (b) Can tutoring status (receiving tutoring, not receiving tutoring) predict a student with a disability’s attitude toward retention and belonging, retention belief, integration belief, and self-determination belief?
   (c) Can socioeconomic status (SES) (Pell Grant eligible, Pell Grant ineligible) predict a student with a disability’s attitude toward retention and belonging, retention belief, integration belief, and self-determination belief?

These research questions will attempt to contribute to the limited body of research on individualized comprehensive academic support programs and their effect on college students with a disability. The results may assist postsecondary institutions in improving academic support services and promoting the success of this underserved population.

Literature Review

Research has identified that students with disabilities face many challenges in higher education that affect their retention and persistence rates (Rothman et al., 2008). This review begins by exploring theoretical frameworks that inform our understanding of student retention and belonging, particularly in relation to students with disabilities. Next, it discusses the various academic support programs available, focusing on comprehensive and individualized support services. Finally, it addresses the accessibility and financial considerations associated with these programs.

Theoretical Framework

This study's theoretical foundation draws on several key models of student retention and belonging in higher education. These frameworks offer essential insights into the factors influencing the persistence and success of college students with disabilities.

Vincent Tinto's model of student departure (Tinto, 1975, 1993) and the model of the dropout process by William Spady (1970) form the cornerstone of our theoretical understanding of the critical importance of academic and social integration in student retention and persistence. Spady (1970) identified that student attrition primarily depends on how well students integrate academically and socially into the college environment. Similarly, Tinto (1975, 1993) argued that a college student's persistence or attrition depends on their level of academic and social integration. Students who continue their academic careers likely develop strong integration and commitment to their educational goals and institution (Tinto, 1993).

These seminal theories underscore the need for colleges and universities to create environments that facilitate students' academic and social integration. For students with disabilities, who may face additional challenges in integrating into the college environment, these theories are particularly relevant.

Building on these foundational theories, Terrell Strayhorn's (2012, 2019, 2023) framework of college students' sense of belonging is particularly relevant to marginalized populations, including those with disabilities. Strayhorn (2012) conceptualizes sense of belonging as the extent to which students feel socially supported, connected, and valued within their campus community. This sense of belonging significantly influences students' academic achievement, retention, and persistence (Strayhorn, 2023).

Strayhorn (2019) notes that the significance of belonging is amplified during periods and in environments where individuals may be particularly susceptible to feelings of exclusion, loneliness, or estrangement. Belonging is especially relevant for students navigating their initial year of higher education, and even more so for students with disabilities who may face unique challenges in integrating into the college environment. Strayhorn (2023) demonstrated that even brief, targeted interventions can significantly impact students' sense of belonging in the short term. This finding suggests potential for interventions like individualized comprehensive support programs to positively influence students' sense of belonging. Research has linked this enhanced sense of belonging to improved educational outcomes such as increased persistence intentions (Hausmann et al., 2007), better retention (O'Keeffe, 2013), and higher academic motivation and engagement (Freeman et al., 2007; Zumbrunn et al., 2014).

These theoretical frameworks are particularly relevant when considering the unique challenges faced by college students with disabilities. The difficulties students face in achieving academic and social integration, as emphasized by Tinto and Spady, are often exacerbated by factors such as adjusting to new levels of independence (Hadley, 2009) and meeting increased coursework expectations (Janiga & Costenbader, 2002). Additionally, Strayhorn's (2019) concept of sense of belonging takes on added significance for students in this population, who may struggle with feelings of exclusion or disconnection in the college environment.

The integration of these theoretical frameworks, Tinto's and Spady's emphasis on academic and social integration, and Strayhorn's focus on sense of belonging, provides a comprehensive lens through which to examine the experiences of college students with disabilities. It also provides valuable insights into the potential impact of support programs designed to enhance these students' integration and sense of belonging in the college environment.

Academic Support Programs for Students with Disabilities

The development and implementation of specialized academic support programs reflect a growing recognition of the unique challenges that students with disabilities face in higher education. These programs aim to develop self-determination skills (Frieden, 2004; Hong et al., 2007; Rosenbaum, 2004) and provide individualized support to help students navigate the complexities of college life. By offering targeted interventions, these programs seek to mitigate the specific obstacles that can impede academic success and integration for students with disabilities.

Academic support programs in postsecondary education are designed to assist students with varying intellectual, social, and emotional needs (Arikan, 2016). Research demonstrates the effectiveness of academic support programs in higher education for students with disabilities (Harrison et al., 2012; Newman et al., 2021; Troiano et al., 2010). For instance, Harrison et al. (2012) found that 82.9% of students in the Learning Opportunities Task Force (LOTF) program achieved academic success, with the program significantly contributing to student retention. Troiano et al. (2010) reported that participants in the Learning Resource Center (LRC) program achieved higher GPAs and were more likely to persist to graduation.

Individualized tutoring is a key feature of these programs. As noted earlier, individualized tutoring sessions offer tailored academic support, a critical feature for students with disabilities who benefit from and prefer one-on-one instruction (Hadley, 2009; Koch et al., 2014; Koch et al., 2016). DuPaul et al. (2017) found a direct correlation between the amount of individual coaching and tutoring received and academic progress. Furthermore, Grillo and Leist (2013) and Laskey and Hetzel (2011) concluded that increased tutoring hours correlated with higher GPAs and improved likelihood of retention and persistence to degree completion. Colver and Fry (2016) found that peer tutoring programs significantly improved academic performance and retention rates for undergraduate students, including those with disabilities. Similarly, Vogel et al. (2007) reported that tutoring programs specifically tailored for students with learning disabilities improved not only academic performance but also self-confidence and social integration.

In a comprehensive review of literature on students with disabilities in higher education, Kimball et al. (2016) found that targeted academic support, including tutoring, consistently led to improved outcomes. This aligns with earlier findings by Rath and Royer (2002) , who concluded that individualized tutoring was among the most beneficial interventions for academic success of college students with learning disabilities. The structure and goals of these individualized support programs align closely with Strayhorn's (2012, 2019) concept of sense of belonging potentially enhancing students' feelings of being valued and connected to the campus community. This increased sense of belonging, according to Strayhorn's (2012, 2019) framework, can positively influence students' academic achievement, retention, and persistence.

While many programs are free, some comprehensive support programs may incur additional costs. However, their individualized nature provides a level of support that goes beyond standard accommodations, potentially making a significant difference in the college experiences and outcomes of students with disabilities.

Financial Accessibility of Comprehensive Support Programs

While comprehensive support programs have been shown to offer noticeable benefits, their resource-intensive nature can present accessibility challenges, particularly for students from lower socioeconomic backgrounds (DuPaul et al., 2017; Newman et al., 2021; Troiano et al., 2010). The high level of personalized attention, specialized staff, and extensive services often require substantial resources, which some institutions address through additional program costs. The self-funded nature of many comprehensive support programs allows for high-quality, individualized support but may limit accessibility for students from low socioeconomic backgrounds. This funding model, which often relies on enrollment fees to cover operating expenses, raises important questions about equity and access in higher education support services.

Importantly, socioeconomic status (SES) already plays a vital role in retention for students with disabilities (Lee et al., 2015; Showers & Kinsman, 2017). Students from low SES backgrounds are at higher risk of poor academic performance and attrition. McGregor et al. (2016) found fewer students from low SES backgrounds received accommodations compared to students from higher SES backgrounds, further impairing the challenges faced by this population. Limiting access to comprehensive support programs could further exacerbate these gaps in support for low SES students.

To address these concerns, institutions have implemented various strategies to make comprehensive support programs more accessible. Some institutions have explored ways to integrate support services into broader campus initiatives (Getzel & Thoma, 2008), while others have focused on improving the overall accessibility of their services and programs for students with disabilities (Lombardi et al., 2016). Given the potential impact of these programs on student success, retention, and persistence, finding solutions to these accessibility challenges is crucial (DuPaul et al., 2017). By addressing barriers, particularly financial ones, institutions can create more inclusive and equitable learning environments that support all students' success, including those with disabilities (Lombardi et al., 2016).

Methods

This study utilized a comparative research design to examine the impact of individualized comprehensive support programs and tutoring on attitudes toward retention and belonging among college students with disabilities. The following subsections detail the research design, participant selection, data collection procedures, and data analysis techniques.

Study Setting and Programs

This study was conducted at two midwestern universities, Bowling Green State University (BGSU) and Southern Illinois University (SIU), that offer individualized comprehensive support programs for students with disabilities. Both programs operate on a fee-based model, requiring an additional cost beyond standard tuition. This fee-based structure allows the programs to provide extensive, personalized support, maintain low student-to-specialist ratios, and employ specially trained staff. However, this structure may limit accessibility for some students, particularly those from lower socioeconomic backgrounds. Both programs offer services that go beyond standard accommodations, providing comprehensive support tailored to each student's specific needs.

At BGSU, the Falcon Learning Your Way (FLY) Program provides individualized academic support by creating tailored learning plans based on student documentation (IEP, 504 Plan, evaluations) and initial meetings. This plan targets specific academic needs and may include strategies for executive function, study habits, test-taking, and communication, along with accommodations and assistive technology. Students can also access course-specific tutoring, math support, academic coaching, and the FLY Study Lab. Regular reviews of course calendars, assignments, and grades help students stay on track, while connections to campus resources, such as the testing center and university librarians, further support their academic success. The program also keeps families informed through a monthly newsletter.

SIU's Achieve Program offers a tiered system of support with varying degrees of individualized assistance. The program offers three levels of support: Comprehensive, enhanced, and basic. The comprehensive level provides the most intensive support, including weekly meetings with a learning specialist, individualized academic coaching, and access to subject-specific tutoring. The enhanced level offers biweekly meetings and some tutoring support, while the basic level provides general academic guidance and limited access to tutoring. All levels include assistance with course selection, liaison services with faculty, and support in developing study strategies.

Participants

This study included 110 undergraduate students with disclosed disabilities. Participants were recruited using a convenience sampling method from the disability services offices and comprehensive support programs at both universities.

Participants were categorized into four groups based on enrollment in fee-based individualized comprehensive academic support programs and tutoring status. The groups were as follows: (a) students enrolled in a comprehensive support program and receiving tutoring (n = 17); (b) students enrolled in a comprehensive support program but not receiving tutoring (n = 9); (c) students not enrolled in a comprehensive support program but receiving tutoring (n = 16); and (d) students not enrolled in a comprehensive support program and not receiving tutoring (n = 55).

Fifty-four students (49.1%) reported having multiple disabilities, n = 18 (16.4%) reported having attention/hyperactivity disorder, n = 16 (14.5%) had mental disabilities, and n = 11 (10.0%) had a learning disability. The number of students not enrolled in an individualized comprehensive support program was n = 81 (73.6%), while students enrolled in an individualized comprehensive support program was n = 29 (26.4%). Among the respondents, 60 (54.5%) identified as female, 33 (30%) as male, and 17 (15.5%) selected 'other' for gender. The majority of participants identified as White (n = 86, 78.2%) and not receiving tutoring (n = 73, 66.4%). Many participants reported parental incomes under $40,000 ($n$ = 21, 19.1%), followed by those earning between $80,001 and $100,000 ($n$ = 19, 17.3%), and those with incomes over $140,000 ($n$ = 17, 15.5%).

Data Collection

Before data collection, Institutional Review Board (IRB) approval was obtained from both universities, along with permission from the directors of the comprehensive support programs and disability services offices. The Qualtrics survey link and study explanation were distributed to these directors, who then shared them with eligible students. Survey distribution occurred simultaneously at both institutions during the Spring 2023 semester. This process ensured ethical compliance while maintaining participant confidentiality.

The study utilized a 23-item survey instrument based on the Brief Index of Student Retention (BISR) questionnaire (Davidson & Beck, 2021) and scales from a sense of belonging survey (Leibowitz et al., 2020). The instrument included four subscales: Retention Belief, Integration Belief, Self-Determination Belief, and Overall Attitude toward Retention and Belonging.

A six-point Likert scale was used, with response options ranging from 1 (“very unfavorable”) to 5 (“very favorable”), with a sixth option of “not applicable.” Responses were converted into a five-point favorability score, with higher scores demonstrating a more positive attitude toward retention and belonging. Demographic information collected included disability status, enrollment in an individualized comprehensive support program, tutoring status, gender, race, and socioeconomic status.

Data were collected over a three-week period using an online Qualtrics survey, with distribution methods varying between the two institutions due to university policies. At BGSU, the survey link was included in the weekly Campus Update email sent to all enrolled students, while SIU distributed it directly via email to students enrolled in the individualized comprehensive support program or registered with the disability services office. The survey link remained open for three weeks at both institutions, with weekly reminder emails sent to encourage participation and maximize response rates.

Data Analysis

To address the first research question, a factorial analysis of variance (ANOVA) was conducted to examine differences in attitudes toward retention and belonging among student groups based on enrollment status in an individualized comprehensive support program (enrolled, not enrolled) and tutoring status (receiving tutoring, not receiving tutoring). A two-way factorial ANOVA allows for looking at both factors at the same time and to see if they interact with each other in some way. The independent variables were enrollment status and tutoring status, while the dependent variables were the subscale scores and the overall attitude toward retention and belonging score.

To address potential concerns regarding sample size and statistical power, a post-hoc power analysis was conducted. The initial analysis, assuming a 95% confidence interval and a 4% error rate, recommended a sample size of 106 ($z = 1.96$, $p = .05$). As the total number of completed surveys fell below this recommendation, a second post-hoc analysis was performed. This analysis, with a 93% confidence interval and a 4% error rate, indicated a recommended sample size of 92 ($z = 1.82$, $p = .05$). The implications of these power analyses are further discussed in the limitations section.

For the second research question, logistic regression analysis was employed to identify the predictive value of students' attitudes toward retention and belonging, retention beliefs, integration beliefs, and self-determination beliefs on their enrollment status, tutoring status, and socioeconomic status. Logistic regression was used to identify the factors influencing students' likelihood of enrolling in a fee-based program or seeking tutoring, as it effectively handles categorical outcomes and quantifies the strength of these relationships to understand drivers of student behavior. The independent variables for these questions were the subscale scores and the overall attitude score, while the dependent variables were enrollment status, tutoring status, and socioeconomic status (Pell Grant eligible, Pell Grant ineligible).

Before conducting the analyses, the data were screened for missing values and outliers. Participants with missing data for any subscale were excluded from the analysis of that particular subscale. Descriptive statistics, including means, standard deviations, and sample sizes, were calculated for each subscale and the overall instrument. Assumptions of normality and homogeneity of variances were tested before proceeding with the factorial ANOVA and logistic regression analyses.

Limitations

This study provides valuable insights into the impact of individualized comprehensive support programs on attitudes toward retention and belonging among college students with disabilities. However, several limitations should be acknowledged.

First, the self-funded nature of the examined programs (the FLY Program at BGSU and the Achieve Program at SIU) may limit accessibility for students from low socioeconomic backgrounds due to additional costs (Marshak et al., 2010). The lack of institutional financial support for these programs may also affect their scalability and sustainability over time.

Second, there is potential self-selection bias among the study participants. Students who choose to enroll in comprehensive support programs may differ in motivation, self-advocacy skills, or family support compared to those who do not enroll. These preexisting differences could influence attitudes and outcomes independently of the programs’ impact.

Third, a significant limitation relates to the sampling procedure and research design. The convenience sampling, partially based on program enrollment, which was then used as a variable in the analysis, limits the robustness of the findings and may create a circular relationship between program participation and outcomes. This approach may appear to contradict itself by suggesting outcomes are caused by participation in these services, while the logistic regression implies that these outcomes lead to odds of participation.

Fourth, the study's sample from two midwestern universities may limit the generalizability to other institutions or geographic regions. Experiences and attitudes of students with disabilities may vary depending on institutional context, campus climate, and available resources.

Fifth, the reliance on self-reported data may introduce social desirability bias or recall bias. Students may have overestimated their attitudes toward retention and belonging or their level of integration into the college environment.

Lastly, while a post-hoc power analysis indicated an adequate sample size for a 93% confidence interval, some subgroups in this study were small, potentially affecting the robustness of the ANOVA results, particularly for comparisons involving these smaller subgroups.

Results

This study investigated the impact of individualized comprehensive support programs and tutoring on attitudes toward retention and belonging among college students with disabilities. The results section will provide specific findings from the data analysis, including descriptive statistics, ANOVA results, and logistic regression findings.

Descriptive Statistics

The study included 110 participants (see Table 1) with $n = 29$ (26.4%) enrolled in an individualized comprehensive support program and $n = 81$ (73.6%) not enrolled. Among the participants, $n = 37$ (33.6%) received tutoring, while $n = 73$ (66.4%) did not. The majority of participants identified as White (78.2%) and female (54.5%). The most common disability types included multiple disabilities (49.1%), attention/hyperactivity disorder (16.4%), mental disabilities (14.5%), and learning disabilities (10.0%).

The means and standard deviations for each subscale and the overall attitude toward retention and belonging score were calculated, see Table 2. Students enrolled in an individualized comprehensive support program and receiving tutoring had the highest means across all subscales and the overall score, while students not enrolled and not receiving tutoring had the lowest means.

Inferential Statistics

This section presents the analysis of two research questions, focusing on the independent variables: enrollment in a fee-based program, tutoring status, and socioeconomic status based on parental income. The dependent variable measured students' attitudes toward retention and belonging, with subscale scores from the instrument aggregated into a total score representing this attitude. The findings are supported by inferential statistics using factorial ANOVA and multiple regression, with a significance level of $\alpha = .05$ applied throughout.

Research Question One

Research Question One examined the differences in attitudes toward retention and belonging among students based on enrollment status in an individualized comprehensive support program and tutoring status. Factorial ANOVA results (see Table 3) revealed a significant main effect of tutoring status on the Integration Belief subscale, $F(1, 99) = 5.54$, $p = .021$, partial $\eta^2 = .053$, and on the overall attitude toward retention and belonging score, $F(1, 93) = 4.360$, $p = .040$, partial $\eta^2 = .045$. Students who received tutoring had significantly higher integration belief scores and overall attitude scores compared to those who did not receive tutoring. The effect sizes for these significant results were moderate, indicating that tutoring status accounted for 5.3% and 4.5% of the variance in integration belief and overall attitude scores, respectively.

The main effect of enrollment status on the Integration Belief subscale was marginally significant, $F(1, 99) = 3.89$, $p = .051$, partial $\eta^2 = .038$. Students enrolled in an individualized comprehensive support program had marginally higher integration belief scores than those not enrolled. The effect size for this marginally significant result was small, with enrollment status accounting for 3.8% of the variance in integration belief scores. No significant interaction effects were found between enrollment status and tutoring status for any of the subscales or the overall score.

Research Question Two

Research Question Two investigated the predictive value of students' attitudes toward retention and belonging, retention beliefs, integration beliefs, and self-determination beliefs on enrollment status, tutoring status, and socioeconomic status. Logistic regression analyses (see Table 4) revealed that the overall model with three predictors (retention belief, integration belief, and self-determination belief) significantly predicted students' enrollment status, $\chi^2(3) = 14.637$, $p = .002$, and tutoring status, $\chi^2(3) = 20.267$, $p < .001$. The model correctly classified 77.8% of cases for enrollment status and 75.6% of cases for tutoring status.

Integration belief was a significant predictor of both enrollment status ($B = 0.124$, $p = .003$, odds ratio $= 1.13$) and tutoring status ($B = 0.137$, $p < .001$, odds ratio $= 1.15$). For every one-unit increase in integration belief, the odds of a student being enrolled in an individualized comprehensive support program increased by a factor of 1.13, and the odds of a student receiving tutoring increased by a factor of 1.15.

The logistic regression model predicting socioeconomic status based on the three predictors was not significant, $\chi^2(3) = 7.206$, $p = .066$. None of the predictors significantly predicted students' socioeconomic status.

These results highlight the significant impact of tutoring on students' integration beliefs and overall attitudes toward retention and belonging. While enrollment in comprehensive support programs showed some influence, tutoring emerged as a particularly important factor. Integration beliefs were strong predictors of both program enrollment and tutoring utilization, suggesting a complex relationship between these factors that warrants further investigation.

Discussion

This study investigated the impact of individualized comprehensive support programs and tutoring on attitudes toward retention and belonging among college students with disabilities. The findings provide valuable insights into the factors influencing these students' experiences and highlight the importance of targeted support services in promoting their success in higher education.

Summary of Key Findings

A key finding of this study was the significant effect of tutoring on students' integration beliefs and overall attitudes toward retention and belonging. Students who received tutoring, reported significantly higher levels of integration and more positive attitudes, regardless of their enrollment status in a comprehensive support program.

The factorial ANOVA results revealed a marginally significant effect of enrollment status on students' integration beliefs. Although not reaching conventional statistical significance ($p < .05$), it suggests that students enrolled in individualized comprehensive support programs may experience higher levels of integration. The logistic regression analyses further emphasized the central role of integration beliefs in predicting students' enrollment in comprehensive support programs and their utilization of tutoring services. Students with stronger integration beliefs were more likely to be enrolled in a comprehensive support program and to receive tutoring.

Contrary to expectations, the study did not find a significant relationship between students' socioeconomic status and their attitudes toward retention and belonging or enrollment in comprehensive support programs. However, none of the students in the lowest socioeconomic category (parental income under $40,000) were enrolled in a comprehensive support program, suggesting that additional costs may present a barrier for low-income students. This observation points to a potential area for further investigation with more diverse and representative samples.

Interpretation of Results

These findings align with previous research demonstrating that tutoring for college students with disabilities improves academic performance, self-confidence, and social integration (Vogel et al., 2007), and emphasizes the overall benefits of tutoring for this population (DuPaul et al., 2017; Newman et al., 2021). Furthermore, tutoring sessions offer opportunities for students to interact with knowledgeable peers or instructors, fostering a sense of connection and belonging within the academic community (Drago et al., 2018).

Individualized comprehensive support programs aim to enhance academic performance, self-advocacy skills, and sense of belonging through targeted services, including weekly meetings with learning specialists and personalized academic planning (Bowling Green State University, n.d.; Missouri State, n.d.; Southern Illinois University, n.d.). The marginal significance found in the factorial ANOVA, along with the significant predictive value of integration beliefs in the logistic regression, suggests that these programs may contribute to students' integration and overall college experience.

The findings highlight the mutual relationship between integration and support services. Students who feel more integrated into the college environment may be more inclined to seek out additional support, such as individualized comprehensive support programs and tutoring. In turn, participating in these services may further enhance their sense of integration and belonging.

Implications for Higher Education Institutions

These findings have significant implications for higher education institutions and disability support services. Colleges and universities should recognize the value of individualized comprehensive support programs and tutoring in promoting the success of students with disabilities. Investing in these services and making them accessible to a broader range of students may improve retention and persistence rates among this underserved population.

The self-funded nature of the comprehensive support programs examined in this study underscores the need for institutions to enhance financial accessibili-

Table 1

*Sample Size and Percentage for Disability, Enrollment, Gender, Race, Tutoring, and Income (*n *= 110)*

Characteristic	***n***	**%**
Disability		
Multiple Disabilities	54	49.1
Attention/Hyperactivity Disorder	18	16.4
Mental Disabilities	16	14.5
Learning Disability	11	10.0
Mobility Impairment	8	7.3
Sensory Impairment	3	2.7
Enrollment Status		
Enrolled	29	26.4
Not Enrolled	81	73.6
Gender		
Female	60	54.5
Male	33	30.0
Other	17	15.5
Race		
White	86	78.2
African American	5	4.5
Other	19	17.3
Tutoring		
Yes	37	33.6
No	73	66.4
Parents' Income		
Under $40,000	21	19.1
$40,001-$60,000	14	12.7
$60,001-$80,000	16	14.5
$80,001-$100,000	19	17.3
$100,001-$120,000	9	8.2
$120,001-$140,000	6	5.5
Over $140,000	17	15.5

Table 2

Means, Standard Deviations, and 95% Confidence Interval for Study Subscales

Subscale	Receiving tutoring			Not receiving tutoring		
	M	*SD*	95% CI	*M*	*SD*	95% CI
Retention Belief						
Enrolled	9.56	0.86	8.63, 10.49	8.80	1.48	7.55, 10.05
Not enrolled	8.71	1.49	7.75, 9.66	8.55	2.40	8.01, 9.08
Integration Belief						
Enrolled	45.67	8.64	41.01, 50.32	41.89	8.80	35.31, 48.47
Not enrolled	42.82	7.27	38.03, 47.61	35.07	11.04	32.50, 37.64
Self-Determination Belief						
Enrolled	34.32	5.74	31.46, 37.17	35.90	5.47	31.96, 39.84
Not enrolled	36.00	5.36	32.74, 38.79	32.70	6.73	31.13, 34.27
Overall Attitude Toward Retention and Belonging						
Enrolled	90.47	13.15	83.07, 97.88	86.56	14.46	76.38, 96.73
Not enrolled	87.81	11.83	80.18, 95.45	75.65	16.92	71.54, 79.77

Table 3

Results of Factorial ANOVA for Study Subscales

Subscale	*SS*	*MS*	*F*	*p*	*ES*
Retention Belief					
Enrollment status	5.243	5.243	1.327	.252	.014
Tutoring status	3.608	3.608	0.913	.342	.009
Integration Belief					
Enrollment status	385.240	385.240	3.889	.051	.038
Tutoring status	548.681	548.681	5.539	.021	.053
Self-Determination Belief					
Enrollment status	13.513	13.513	0.342	.560	.003
Tutoring status	9.663	9.663	0.245	.622	.002
Overall Attitude Toward Retention and Belonging					
Enrollment status	733.588	733.588	3.103	.081	.032
Tutoring status	1,030.822	1,030.822	4.360	.040	.045

Table 4

Logistic Regression Results for Predictor Variable and Dependent Variables

Variable	*B*	Wald	*df*	*p*	Odds Ratio
Enrollment Status					
Retention Belief	0.052	0.095	1	.757	1.053
Integration Belief	0.124	8.697	1	.003	1.132
Self-Determination Belief	-0.086	2.320	1	.128	0.918
Constant	-3.699	3.642	1	.056	0.025
Tutoring Status					
Retention Belief	0.017	0.012	1	.912	1.017
Integration Belief	0.137	11.294	1	<.001	1.147
Self-Determination Belief	-0.068	1.614	1	.204	0.934
Constant	-4.159	4.960	1	.026	.016
Socioeconomic Status (SES)					
Retention Belief	-0.047	0.144	1	.705	0.954
Integration Belief	0.049	3.510	1	.061	1.050
Self-Determination Belief	0.024	0.353	1	.553	1.024
Constant	-1.644	1.508	1	.219	0.193

ty. Colleges and universities should consider providing financial support for these initiatives, potentially making them more affordable or even free. This may involve allocating institutional resources, collaborating with financial aid offices to identify alternative funding sources, or implementing fee waivers for low-income students. By doing so, institutions can ensure that all students with disabilities, regardless of their socioeconomic background, have access to these valuable comprehensive support services. Such institutional investment would demonstrate a commitment to equity and inclusion, creating a more inclusive environment for students with disabilities (Marshak et al., 2010). Disability services educators should advocate for these institutional policies to reduce economic barriers and address achievement gaps experienced by low-SES students with disabilities (Jury et al., 2017).

Practical Implications for Disability Services Educators

The findings of this study provide several practical implications for disability services educators in higher education. First, the significant impact of tutoring on students' integration beliefs and overall attitudes toward retention and belonging aligns with previous research (Colver & Fry, 2016; Kimball et al., 2016), highlighting the importance of providing and expanding these services for students with disabilities. Disability services educators should advocate for expanded tutoring services and collaborate with academic departments to recruit and train tutors who understand the unique needs of students with disabilities. This approach can enhance the effectiveness of tutoring services, which have been shown to improve academic performance and increase persistence (Drago et al., 2018; Newman et al., 2021).

Additionally, the potential benefits of individualized comprehensive academic support programs in promoting students' integration highlight the need to explore implementing such programs. Disability services educators should collaborate with institutional leadership to secure funding and resources for initiatives that promote inclusion and enhance campus climate (Soria, 2021). Engaging in outreach and collaboration with other campus stakeholders can help create a more inclusive environment and build awareness of disability issues (Bialka et al., 2017; O'Shea & Meyer, 2016).

Finally, the central role of integration beliefs in predicting program enrollment and tutoring utilization emphasizes the need to foster a sense of belonging. Disability services educators should work to create inclusive environments that promote social and academic integration (Fleming et al., 2017; Vaccaro et al., 2015). Offering comprehensive academic support programs with regular one-on-one meetings and closely tracking attendance may improve graduation rates and GPAs. Building strong relationships between students and support staff can foster student engagement and connection to the institution, factors linked to college persistence and success. (Herbert et al., 2014; Troiano et al., 2010).

By implementing these strategies, disability services educators can play a crucial role in promoting the success and well-being of students with disabilities, thereby creating more inclusive and equitable learning environments that empower all students to reach their full potential.

Conclusion

This study highlights the significant impact of individualized academic support programs and tutoring on college students with disabilities regarding retention and belonging. The findings underscore the importance of integration beliefs in shaping students' experiences and highlight the need for institutions to prioritize accessible comprehensive support services (DuPaul et al., 2017; Fleming et al., 2017). By prioritizing these services, higher education institutions can create more inclusive environments that promote success for all students (Jury et al., 2017; Soria, 2021).

As higher education evolves, institutions must adapt their approaches to better support students with disabilities (O'Shea & Meyer, 2016; Showers & Kinsman, 2017). By embracing the insights from this study, institutions can foster a more inclusive academic community that empowers all students (Bialka et al., 2017; Herbert et al., 2014). Investing in these support programs demonstrates institutional commitment to the success and well-being of students with disabilities.

Future research should investigate factors that influence the experiences and outcomes of college students with disabilities, with a particular focus on support services and programs. It is crucial to compare persistence and retention rates between students in comprehensive support programs and those receiving accommodations through disability services offices. Longitudinal studies that track academic progress and post-graduation outcomes would provide valuable insights into the long-term impact of comprehensive support programs (Drago et al., 2018; Harrison et al., 2012). Additionally, researchers should replicate these findings across diverse postsecondary institutions to establish external validity and identify potential moderators of the relationship between program participation and student outcomes (Mamiseishvili & Koch, 2011; Orr & Goodman, 2010). More rigorous experimental designs, such as randomized controlled trials, should be employed to establish causal relationships between program participation and student outcomes.

Future research should focus on identifying sustainable funding models that enable institutions to offer comprehensive support services without creating financial barriers for students from low-income backgrounds, ultimately fostering a more equitable and inclusive educational environment. By continuing to investigate and implement effective support strategies, higher education can move closer to the goal of providing equal opportunities for success to all students, regardless of their disabilities or socioeconomic status.

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Journal of Postsecondary Education and Disability, 2025, 38(4), 717-724

Evaluating a Department Support Program for Accessibility (Practice Brief)

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Abstract

Postsecondary education must be accessible to students with disabilities, but implementing timely and effective accommodations can be challenging for students, instructors, and institutions. In this paper, we describe a new system that was created to support students and instructors at the departmental level, in which instructors work with an accommodations assistant to make *a priori* decisions about the adjustments that can be made in their courses and students communicate about their needs for accommodation with the accommodations assistant. After this departmental system was used for one academic year, we evaluated its effectiveness through surveys sent to students and faculty. The feedback we received was positive. On average, the students in our sample said that the support system made it easier for them to navigate receiving accommodations. Similarly, the faculty in our sample said that the support system saved them significant time and effort. This departmental support system can thus be viewed as an effective first step in providing more support to both students and faculty and creating an accessible learning environment.

Keywords: accommodations, disability, accessibility, higher education, program evaluation

Summary of Relevant Literature

Students with disabilities are entering postsecondary education at significantly higher rates than ever before. Based on data from the Canadian University Survey Consortium (2022), approximately 31% of the first-year students sampled identified as having a disability or impairment, with mental health disabilities reported most commonly. Between 2009-2015, community colleges in Ontario had a 110% increase in mental health disabilities requiring accommodation, a 71% increase in students with attention deficit hyperactivity disorder, and a 25% increase in learning disabilities (Deloitte Canada, 2017; Harrison et al., 2018). Over the past three decades, the number of undergraduate students diagnosed with a learning disability has tripled, with current estimates ranging from 5-11% (Canadian University Survey Consortium, 2022; Cole & Cawthon, 2015). In the context of education, and more specifically course design and delivery, these burgeoning numbers represent a heightened need for educational institutions to reduce barriers for disabled students and provide appropriate support. Note that in this report we will be alternating between person-first language (e.g., students with disabilities) and identity-first language (e.g., disabled students) because we are discussing disability broadly and want to acknowledge the many different perspectives within and outside of disabled communities (Dunn & Andrews, 2015).

In their Policy on Accessible Education for Students with Disabilities (2018), the Ontario Human Rights Commission (OHRC), states that the goal of accommodation is to ensure students with disabilities have equal access to the academic environment. Importantly, accommodations should neither change the course content that is being taught, nor reduce standards for academic achievement. Thus, instructors must make efforts to remove barriers and adapt their instruction, material, and/or assessments to enable disabled students' full participation. In most colleges and universities, in Ontario and across Canada, in-

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[1] *Queen's University*

structors are supported in this process by their institution's disability office, which works with disabled students to identify barriers and make recommendations for specific accommodations (Condra et al., 2015). These offices typically make recommendations at a global level such that they can be received by all instructors and applied to most course and assignment contexts.

Although the aim of academic accommodations is to provide equal access to students with disabilities, students can still face myriad challenges that hinder their success. For example, Toutain (2019) notes that administrative staff in postsecondary disability offices are experiencing increased strain due to a high volume of inquiries, thus leading to delays in providing support. Students report many additional barriers to their education, including lack of understanding of campus systems, difficulties accessing required documentation, concerns regarding instructors' reactions to accommodations, and perceived stigma associated with having a disability (Bruce & Aylward, 2021; Waterfield & Whelan, 2017). Indeed, a study by Salzer and colleagues (2008) found that 30% of the students in their sample did not request accommodations because they "were fearful of being stigmatized by teachers" (p. 373). Likewise, Denhart (2008) reported that students with learning disabilities are often hesitant or reluctant to make use of their accommodations as they do not want to be viewed as inferior by their peers or instructors.

One strategy for increasing accessibility is to address challenges higher up the pipeline: barriers to accessible course design for instructors. Although faculty and staff report that they want to have a better understanding of accommodations processes (Milligan, 2010; Reavley et al., 2013; Sniatecki et al., 2015), they can find it difficult to balance academic requirements with accessibility needs (Norris et al., 2024; Parizeau, 2022; Storrie et al., 2010). Indeed, instructors are required to maintain their typical teaching duties (e.g., preparation, delivery, grading), while supporting disabled students, which can involve creating individualized timelines for assessments, designing new assessments, changing the formatting of course material, and providing pastoral care to students, all of which take a considerable amount of time and effort. With increasing numbers of students registering with disability offices, the workload that goes into arranging appropriate accommodations remains a major concern for postsecondary instructors and institutions (Deloitte Canada, 2017). Further, instructors may be undertaking this work without relevant training. There are a limited number of professionals who are credentialed to work in disability management (e.g., medical doctors, psychologists, certified disability management professionals); however, many instructors fall outside of these areas and may not be well equipped to make appropriate adjustments based on the information they are provided.

Setting

In this report, we describe a new accommodations support system piloted in the Department of Psychology at Queen's University, a public research-focused institution in Ontario, Canada that serves over 30,000 students. The year of this project, there were approximately 3,500 individual undergraduate students registered across psychology courses. Like in other postsecondary institutions in Canada (e.g., see Deloitte Canada, 2017; Harrison et al, 2018), the number of students registered with the disability office at our institution had been increasing steadily in the past few years, representing 9% of the student population in the 2019-2020 academic year and 12% in 2021-2022 (Case et al., 2024). Interestingly, this internal report shows a sudden spike in disability office registrations the same year that we began our new support system, with 21% of the student population registered as a student with a disability in 2022-2023 (an 80% increase from the previous year). Although our institution now has a much higher proportion of students registered with the disability office than the average of Ontario universities, this rate is similar to the prevalence of disabilities among youth in Canada more broadly (Case et al., 2024; Statistics Canada, 2024).

At Queen's University, a centralized disability office assigns accessibility advisors to students registered with them. Advisors create individualized letters of accommodation for each student listing recommended accommodations, which are provided to instructors. In past years, it was each student's responsibility to give their letter to all of their instructors near the start of the term, but a new university-wide system was put in place in the Summer 2022 term that allows instructors to access all letters of accommodation for students in their classes through an online platform. This new platform also allows instructors to get central support for in-person exam accommodations through the university's exams office (with the exception of deferred midterms, which must be arranged by the instructors themselves). Students are able to log into the online platform to view the time and location of their accommodated exams, once arrangements have been made.

Depiction of Problem

The problem that this practice addresses is how postsecondary departments can support their instructors in meeting a high volume of student accommodations within the classroom and during assessments in a timely and effective manner, to ensure their courses are accessible for students with disabilities. This paper overviews a departmental system that was developed and delivered to help improve the student experience and to support instructors at the course level.

Description of Practice

In the 2022-2023 academic year, we piloted a new system for supporting students who need *accommodations* (i.e., adjustments recommended by the disability office to reduce barriers related to students' disabilities) or *consideration* for extenuating circumstances (e.g., illness, injury, loss of a loved one) that prevent them from completing their assessments. Instructors who opted in to the departmental system had to complete an intake form (see Norris & Karasewich, 2022) before the start of the term, which asked them to (a) list all of the assessments in their course, (b) note any universal design practices they are implementing (e.g., all students have a three-day grace period to submit an assignment), and (c) make *a priori* decisions about how common accommodation/consideration scenarios could be handled (e.g., whether seven-day extensions be granted on an assignment, if there is an alternative way for students to earn participation marks if they are absent from class). This process was guided by an accommodations assistant, whose qualifications for the role included completion of the Accessibility for Ontarians with Disabilities Act (AODA) training suite, proficiency with learning management systems, and prior experience arranging accommodations in a postsecondary environment. Out of 64 undergraduate psychology courses offered in the Fall 2022 and Winter 2023 terms, 37 were supported by the new departmental system.

For all supported courses, the accommodations assistant assumed first point of contact for accommodation tasks that, in the past, would have been completed by the instructors themselves or their teaching assistants: she answered students' questions about accommodations, provided students with guidance on submitting documentation for consideration, collected official records, made adjustments within the course learning management system (e.g., extended due dates on assignments, extra time on quizzes), created and provided accommodated exam material to the exams office, made arrangements for deferred midterms (e.g., scheduled exam appointments, reserved rooms, hired proctors, arranged for special supports), provided the exams office with lists of students writing deferred final exams, recorded assessments that would need to be reweighted, and helped students connect with other supportive resources. If a student raised a concern about their accommodations during the term, the accommodations assistant worked with the student, their instructor, and (if necessary) their disability advisor to resolve the issue and consider what alternate adjustments may be possible within the essential requirements of the course.

In this report, we describe the results of a program evaluation we conducted at the end of the Winter 2023 term on the departmental system, through surveys that were sent out to faculty and students. The full survey items can be found on the Open Science Framework (https://osf.io/j3f72/overview?view_only=e601893625254c739fe46863ea6148ac).

Evaluation of Observed Outcomes

Survey Samples

The student survey was sent over email to all undergraduate students enrolled in courses in psychology (approximately 3,500). Seventy-two students accessed the survey and consented to participate, but 17 were excluded for making no further response, leaving 55 in the final sample. Questions were posed to students independent of whether they were registered with the disability office because we were also interested in hearing from students who may have a disability but do not currently have formal accommodations and from those who may not have a disability but experienced extenuating circumstances. The survey for faculty was sent by email to all registered instructors in psychology, with 27 of those teaching in the psychology department the year that the pilot began. Thirteen faculty accessed the survey and consented to participate, but one was excluded for making no further response, so there were 12 in the final sample.

Participation in the surveys was voluntary and there was no penalty for not participating. Participants were informed that they could leave an item blank if they felt uncomfortable with it. Responses were anonymous and identifying information was not collected. If a participant included any information that could be used to identify them in open-ended responses, it was removed prior to analysis. This project was approved for exemption by the institution's General Research Ethics Board because of its classification as a program evaluation.

Student Experience

Out of the final survey sample of 55 students, 56% reported being registered with the disability office at some point during the Fall 2022/Winter 2023 terms, while 56% reported submitting one or more requests for academic consideration to their faculty. It is important to note that students may need both accommodations (for disability) and considerations (for extenuating circumstances) in the same term, although students registered with the disability office are directed to use a different process for requesting consideration when they are experiencing extenuating circumstances *related* to their disability (e.g., a flare-up of a chronic condition). Thus, although there may be overlap, it is assumed that students are always following the procedure that is relevant to their current need. Students were asked whether one or more of their psychology courses had departmental support through the accommodations assistant during the Fall/Winter terms. This question aimed to gauge their awareness of the support they received. Forty-nine percent reported taking at least one psychology course that had departmental support, while 27% were "unsure" whether they had (see Figure 1).

Next, we provided students with a full list of courses that had used departmental support to allow them to confirm their memories and asked them to rate their overall experience of receiving academic accommodations/considerations in courses with departmental support compared to other psychology courses without it. Students made their ratings on a 7-point Likert scale, ranging from 1 ('I found it much *harder* to navigate receiving accommodations/considerations' in courses with Departmental support) to 7 ('I found it much *easier* to navigate'). Nineteen students made no response to this question, and six answered "not applicable," indicating that they were not able to make a comparison either because they had not taken psychology courses that had departmental support or *only* took courses that did. On average, the 30 remaining respondents rated the departmental support system positively ($M = 4.90$, $SD = 2.31$; see Figure 2).

We also asked students whom they would prefer to contact about receiving accommodations and considerations in their future psychology courses. Their options included (a) departmental support (i.e., the accommodations assistant), (b) their instructor, (c) a teaching assistant, (d) other, or (e) no preference. The same 19 students who made no response to the previous question also made no response to this one. The majority of the 36 remaining students (58%) indicated they would prefer contacting departmental support, with large minorities preferring to contact their instructor (19%) or having no preference (17%). One student chose "other" and then clarified that they would prefer to contact *both* departmental support and their instructor (see Figure 3).

The final two questions of the survey gave students an opportunity to comment on the departmental support process and suggest ways that it could be improved. Fifteen students made at least one response to these open questions, but five of them made comments that were not relevant to the departmental support system (e.g., referencing policies in specific courses, which are at the instructor's discretion). There was an equal mix of positive and negative comments among the 10 remaining. Some students praised the departmental support system for being efficient, easy to navigate, and flexible—with one describing it as "painless" compared to other processes they had encountered. A few students also described the system as compassionate and understanding, although others expressed a need for more understanding from the department generally. Students who made suggestions for how the support system could be improved primarily asked for it to be applied more cohesively—for communication to be more consistent across the accommodations assistant, instructors, and teaching assistants, and for *all* psychology courses to use the support system instead of only a subset.

Faculty Experience

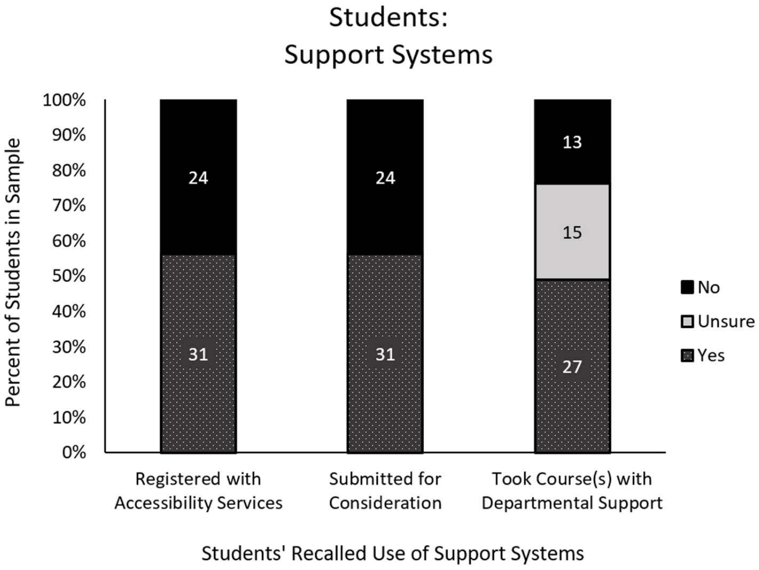
Out of the final sample of 12 faculty, all but one (92%) reported using the departmental system for at least one course. We asked faculty to rate the effect of the support system on a 7-point Likert scale, from 1 ("using departmental support for accommodations/considerations cost me much more time/effort than it saved") to 7 ("it saved much more time/effort than it cost"). The 11 respondents who had used departmental support all rated it highly ($M = 6.64$, $SD = 0.50$), as seen in Figure 4. We also asked faculty whether they would use departmental support in future courses, to which all 12 responded "Yes" (see Figure 4).

Implications and Transferability

Students with disabilities have a right to pursue postsecondary education and to learn in an accessible environment (Jacobs, 2023). Providing accommodations is necessary to ensure disabled students have equal access to their education, but the accommodations process can pose significant challenges to both students and instructors (Ontario Human Rights Commission, 2018; Toutain, 2019; Waterfield & Whelan, 2017). Instructors can find it difficult to provide appropriate accommodations due to a lack of time, knowledge, and support for their efforts (De-

Figure 1

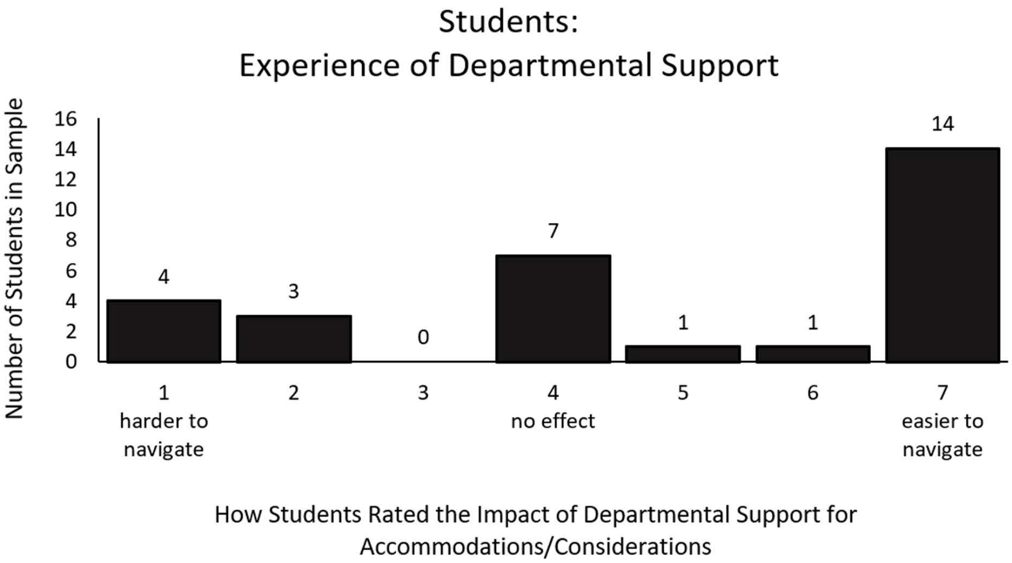
Students' Use of Departmental Support



Note. A total of 55 students provided responses to these questions (#1-3 in the survey).

Figure 2

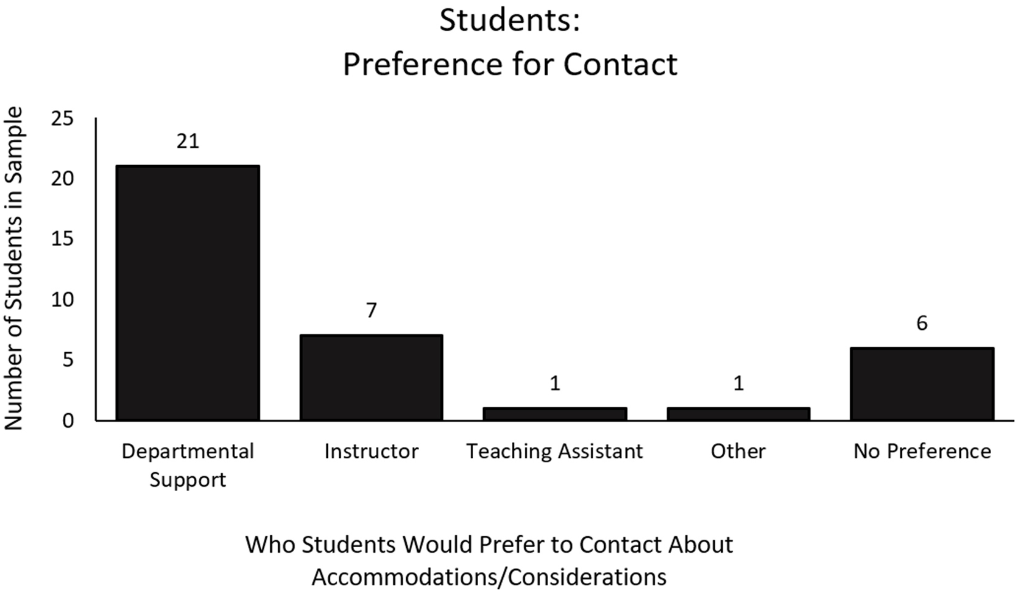
Students' Experience with Departmental Support



Note. A total of 30 students provided a response to this question (#4 in the survey).

Figure 3

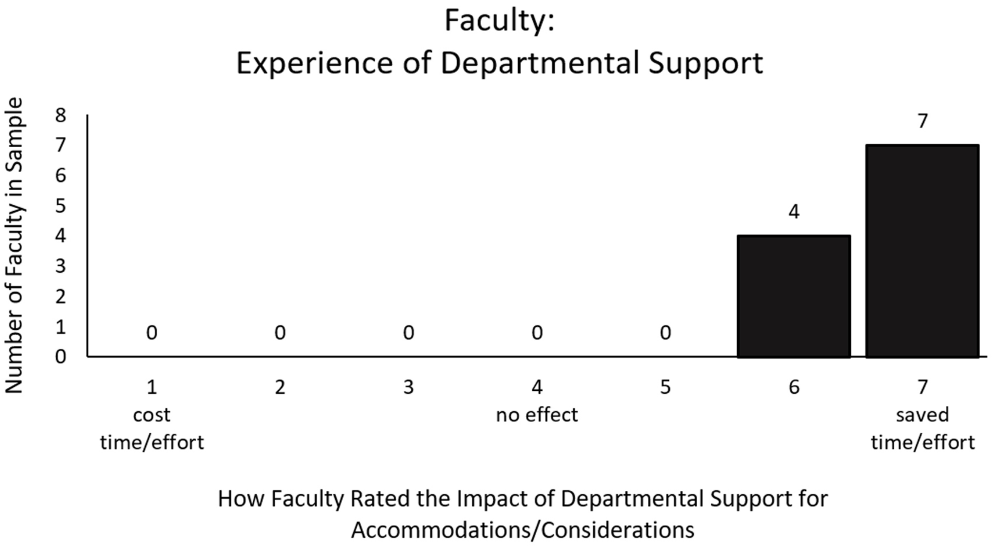
Students' Preference for Contact



Note. A total of 36 students provided a response to this question (#5 in the survey).

Figure 4

Faculty's Experience with Departmental Support



Note. A total of 11 faculty provided a response to this question (#3 in the survey).

loitte Canada, 2017; Parizeau, 2022). Students can find it difficult to access accommodations when having to navigate complex campus systems and worry they will be stigmatized (Bruce & Aylward, 2021; Waterfield & Whelan, 2017). The intention of our new departmental support system was thus to both help improve accessibility for students by supporting instructors in providing accommodations. We found that both our student and faculty respondents had good experiences with the new system. On average, students reported that departmental support made it easier to navigate receiving accommodations/considerations compared to courses without this support. The majority of students also said that they would prefer to contact departmental support over their instructors for needs related to accommodations and considerations. All faculty respondents who had used the system rated it highly, reporting that it saved time and effort, and said they would use it again in the future.

Limitations of this evaluation include a small sample size and the risks of volunteer self-selection. Additionally, this system was piloted in one department and as courses vary, so do the needs of staff and students, making it unclear how these results may generalize across departments. With these limitations in mind, the initial results of this evaluation prove to be promising and have been shown to address some of the challenges and barriers associated with providing and receiving accommodations. This evaluation invites and encourages us to try new systems with the hope of providing better, more effective support for students and faculty alike. We have found that asking instructors to make a priori decisions about accommodations allows for more effective and consistent support and while this process does not need to be done by one central person, a centralized system may be especially helpful for large courses and programs. Overall, accommodations require great time and care, and institutions need to prioritize supporting instructors in this work whether at the individual course level or more broadly.

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Journal of Postsecondary Education and Disability, 2025, 38(4), 725-732

Engaging Higher Education Staff in Disability Justice & Access Education (Practice Brief)

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Abstract

This praxis-driven paper presents a multimodal curriculum designed to train staff on disability justice and access within higher education. The training emphasizes developing shared language, fostering understanding of diverse disability identities, and moving beyond compliance-focused approaches. Through a combination of self-paced learning, group discussions, and scenario-based exercises, this training program aims to shift institutional culture toward a more inclusive and equitable environment for students with disabilities. The concepts in this practice brief were originally presented by the author at the Association on Higher Education and Disability's annual "Equity & Excellence: Access in Higher Education" conference in July 2023.

Keywords: higher education, student affairs, disability justice

Topics of disability justice and intersectionality are often omitted from conversations about diversity, equity, and inclusion within higher education settings. Even at college campuses in which staff see themselves as equity-minded, many professionals are still missing critical education and tools to support students with disabilities. Frontline campus staff, like those in admissions, financial aid, and the registrar, may be the only staff members students ever encounter. Therefore, it is critical—especially in institutions that cater to first generation students, economically disadvantaged students, and Students of Color— that all student affairs staff understand the basics of disability justice and the way those tenets intersect with a multitude of other identities. Additionally, while this article focuses on training within the context of student affairs staff, this information can be applied in any division or unit and with any staff and/or faculty within a higher education institution.

To begin diffusing the work and knowledge of disability justice (and ideally, a culture shift) throughout an entire division, this article proposes the use of division-wide training and approachable discussion prompts to be used within individual units and departments. This article makes available the full content of *Access in Action*, a multimodal, email-based education series that was implemented in 2022 at a community college in the western United States. Practitioners are invited to engage in the content and adapt this training to fit the needs of their institution.

Summary of Relevant Literature

According to the National Center for Education Statistics, undergraduate students who reported having a disability make up about 19% of all postsecondary students (2021) and represent every type of disability (Paul, 2000). Despite federal, state, and institutional policies in place to increase access to higher education, students with disabilities still experience discrimination and barriers to success within postsecondary institutions (Bê, 2019; Merchant et al., 2020). While compliance policy may be in place to protect these students, these policies do not always ensure that the sentiment or attitudes of staff and faculty will be as inclusive as they need to be for students with disabilities to succeed or feel supported (Beilke & Yssel, 1999). Hong (2015) writes that, beyond mandates of reasonable accommodations, many institutions are unprepared to support students with

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[1] *University of Utah*

disabilities. Even when instructors have reported as being willing to provide accommodations, fewer reported actually having done so or even understanding how to provide accommodations (Hong et al., 2010). Additionally, the responsibility of explanation of accommodation to an instructor or disability services office often falls to the student, which can create apprehension in self-advocacy, "downplaying" of disability status, and negative experiences with faculty (Barnard-Brak et al., 2010; Marshak et al., 2010; Norton, 1997).

When navigating the quality of support services available to them, students with disabilities have reported difficulty in obtaining basic accommodations and support (Dowrick et al., 2005). Some of the barriers that students have identified as keeping them from seeking out or more fully utilizing disability services and accommodations include identity issues, desires to avoid negative social reactions, insufficient knowledge, perceived quality and usefulness of services, and negative experiences with faculty surrounding accommodations (Marshak et al., 2010). Some students have shared experiences of meetings with disability services staff that felt clinical or medical in nature, that they felt intimidated by the office personnel and the accommodations-seeking process, or that they did not know how to advocate for themselves effectively (Abreu et al., 2017; Hong, 2015; Marshak et al., 2010). As a result of these many barriers related to faculty, accommodations, and stigma, studies have found that, on average, students with disabilities take about twice as long to complete their college degree as compared to students who do not have disabilities (National Council on Disability, 2003).

Setting and Participants

Access in Action was implemented within the student affairs division of a community college in the western United States in 2022. This five-week training series was distributed to all individuals employed within the student affairs division. One of the initial steps of launching this training series was obtaining commitment and buy-in from stakeholders in student affairs leadership. This training was implemented division-wide only after proposing the mode of delivery and content to the student affairs leadership team, followed by a pilot and round of feedback with that same leadership team. The curriculum for the series was developed by the author, with additional input from a colleague working in assistive technology in the disability services office.

Depiction of the Problem

One primary problem within higher education is that students must self-disclose part(s) of their identity to gain access to certain college resources, services, and a general understanding of campus culture. There are several communities of students who would need to self-disclose to gain access to these services but may choose not to disclose for a variety of reasons. This need for self-disclosure may serve as a barrier to access for all kinds of students with marginalized identities. To create an affirming and welcoming environment for all students – and in particular students who would have to self-disclose their disability to gain increased access – colleges and universities should integrate concepts of disability justice not only into teaching and learning, but in the provision of student services as well.

In addition to providing essential knowledge about disability and serving students of all kinds, the division-wide training described in this article also diminishes the burden often placed exclusively on disability services offices and supports staff in those disability services offices who may not have an understanding of disability justice. This training centers disability justice and action rather than student-sought accommodations, develops shared language and vocabulary within the division or college, and moves the culture of the institution toward inclusivity rather than compliance.

Description of Practice

Access in Action is a five-week, email-based education series that was implemented at a community college in 2022, which includes multimodal learning materials as well as guided discussion prompts focused on disability justice and accessibility. This division-wide training contains materials about accessibility in digital communications, assistive technology, expanding the scope of Universal Design to support students of all marginalized identities, and integrating disability justice into campus-wide strategic planning. The below materials contain the exact content of what was distributed through *Access in Action*; however, some of the content was institution-specific and it is noted with brackets where individuals hoping to implement this training can make changes based on their own institutional resources. Additionally, practitioners can and should use this training as a template and adjust, add, and amend where they deem necessary and in response to what their institutional community needs. In designing this series, the author first identified what kinds of knowledge the student affairs division needed before determining and outlining the five weeks of content. For example, the author was informed by administrators and staff from disability services and other areas that many colleagues were sharing inaccessible communications or that they were unsure of how to integrate disability into their strategic plans. The content of the email training was designed to address those areas of need, among others. For practitioners hoping to replicate this training, the author recommends gathering information from colleagues about recurrent or emergent issues regarding disability inclusivity. The use of surveys, informal interviews, or focus groups may be an effective way to gather this information that informs the way the training is structured and what content is presented.

The first item you will read in this series is an introductory email drafted by the author for distribution by the college's vice president for student affairs. This initial email was sent out to the entire student affairs division one week prior to the first content-driven email. The five content-driven emails were then sent out by the vice president's office on Monday mornings each following week. Each week's email contains a "Learn" section that is filled with relevant content and resources, as well as a "Put into Action" section that presents opportunities for continued learning and guided prompts for discussion with colleagues. These prompts could be used in a variety of ways, such as partnering colleagues across the division for weekly one-on-one discussion, incorporating into regularly scheduled team meetings, or in cross-division sessions in which members of the division gather in small groups to discuss the readings and prompts, similar to that of a book club.

Vice President's Introductory Message

> Colleagues,
>
> With the fall semester in full swing, I know our division is hard at work meeting the needs of our students and even planning ahead for next semester.
>
> This academic year, I am looking forward to continuing our division's commitment to centering equity and inclusion in our work with students and with our peers. This month and into November, we have an opportunity, as a community, to learn more about disability justice and universal access, as well as apply that learning within our respective departments.
>
> The *Access in Action* challenge is a new five-week-long email series that will deliver multimodal educational information and guided discussion prompts focused on disability justice and accessibility. Each Monday morning for those five weeks, all members of our division will receive an email that includes materials around a particular theme, as well as guided discussion prompts to implement some of these lessons into our daily work.
>
> As a division, we have the chance to be innovators in how we make our work accessible, and in developing a shared vocabulary that will create a more inclusive environment for our students and colleagues. Be sure to keep an eye on your inboxes when the challenge launches on [Monday, October 24]. I look forward to seeing how our division grows by using these new tools to support an essential part of our college community.

Week 1: Intro to Accessibility

Welcome to the *Access in Action* challenge! Over the course of the next five weeks, you will receive an email every Monday containing introductory information about accessibility and disability justice, as well as simple ways you can put this new knowledge into action for improved accessibility and inclusivity in your office.

In week one, you'll learn more about what accessibility is, why it's important to prioritize, and how to begin to identify barriers to accessibility. The rest of the challenge contains information and prompts about creating accessible documents and social media, expanding the scope of Universal Design, Assistive Technology, and other resources you can continue to use in your workplace. Each week, you'll also be presented with several guided discussion prompts you can use to talk about the email's material with your colleagues.

As you are completing this challenge, feel free to reach out to the colleagues listed below if you have any questions or if you want to chat about what you've learned so far and how you might implement these new skills and tools into your daily work. [List contact information for yourself or other practitioners implementing this training]

LEARN

Accessibility, simply put, means that something is easy to obtain or use. When considering individuals with disabilities, accessibility can also mean that physical spaces, tools, documents, or other technologies are designed and developed with those folks' needs in mind. Accessibility goes beyond providing requested accommodations, and moves toward a more just and inclusive environment for all people regardless of disability status, size, or age.

Below are some additional resources[1] you can engage with to learn more about the disability rights and justice movement, accessibility initiatives, ableist language, the social model of disability, and more:

- Video: “Our Fight for Disability Rights – And Why We're Not Done Yet” [17:01]
- Accessible Webpage: 10 Principles of Disability Justice
- Video: Inspiration Porn and the Objectification of Disability [9:26]
- Accessible PDF: Avoiding Ableist Language
- Video: Examining the “Social Model of Disability” [1:20]
- Video: “An Accessible World is an Inclusive World” [15:52]
- WC3 Web Accessibility Initiative webpage

PUT INTO ACTION

A great example of universally accessible design are curb cuts on sidewalks or the large buttons that can be pushed to open doors in public buildings. These curb cuts and buttons are initially designed to create increased access for those who use wheelchairs or other mobility devices, but also serve those who are pushing strollers or may have their hands full carrying large boxes through doorways.

- Guided Discussion Prompts:
  - Identify three points of accessible design that you encounter in your everyday life that could be barriers if not made accessible. These points are not limited to physical spaces.
    - Discuss your lists with your colleagues. Does any significant overlap exist in the points of accessibility you’ve identified? Are there any perceived gaps?
  - Do you unintentionally use any of the ableist terms referenced in the link above? Reflect on what it might take to change some of that language use in your everyday vernacular or in your office culture.

Week 2: Making Your Digital Communication Accessible

Now that you are familiar with basic concepts of accessibility, it’s time to put some of the technical aspects of access into practice. Using some simple accessibility standards can make your emails, documents, and web pages accessible for individuals who are Deaf, blind, have learning and reading diversities.

LEARN

Below, you’ll find some resources about just a few universal access communication standards, specifically around creating accessible documents[2] and web accessibility[3]. Here are a few we think you might use most frequently:

- Alt-Text: Alt-text is added to images to describe the content of the images for screen readers. Keep alt-text relatively short, and certainly under 125 characters (the limit for many popular screen readers).
- Headings: When used effectively in documents or emails, headings can help form the outline of the content and provide a clearer idea of how the page is organized.
- PDFs: Creating fully accessible Word documents and selecting the “Save As” a PDF function will allow all of the accessible features of your document to carry over to the new format.
- Captioning: Captioning is text that displays on the screen during a video, and contains both dialogue and any additional sounds or music. Captioning should be synchronized with the dialogue, sound and video action.

This link[4] includes more information on making your digital and social media more accessible.

PUT INTO ACTION

- Draft an accessible Word document. Include multiple headings and an image that includes alt-text.
- Guided Discussion Prompts:

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[1] **"Our Fight for Disability Rights:"** https://www.ted.com/talks/judith_heumann_our_fight_for_disability_rights_and_why_we_re_not_done_yet?language=en; **10 Principles of Disability Justice:** https://static1.squarespace.com/static/5bed3674f8370ad8c02efd9a/t/5f1f0783916d8a179c46126d/1595869064521/10_Principles_of_DJ-2ndEd.pdf; **Inspiration Porn**: https://youtu.be/SxrS7-I_sMQ?si=oueFc70nwKF5zins; **Avoiding Ableist Language:** https://web.augsburg.edu/english/writinglab/Avoiding_Ableist_Language.pdf; **Examining the "Social Model of Disability:"** https://youtu.be/9s3NZaLhcc4?si=WYqUEm3wgFRKE6bY; **"An Accessible World:"** https://youtu.be/TX-ITy4yaeI?si=IJ6LB7p1lJa9hOQr; **WC3**: https://www.w3.org/WAI/fundamentals/accessibility-intro/

[2] https://accessibility.huit.harvard.edu/accessible-documents

[3] https://www.w3.org/WAI/fundamentals/accessibility-intro/

[4] https://www.a11yproject.com/posts/everyday-accessibility/

  - ◦ What would it take to make accessible documents part of your everyday process? What barriers might you encounter?
  - ◦ What other parts of your daily communications could incorporate these tools of accessibility?
  - ◦ If your team uses Instagram or another kind of social media to share information about upcoming events or opportunities, discuss what steps you could take to make that content more accessible to all users.

Week 3: Expanding the Scope of Universal Design

This is our opportunity to expand our scope to consider how Universal Design might create increased access for all populations who may have to self-disclose to achieve equity in use of a service or product. Universal Design is the design of an environment (or any building, product, or service in that environment) so that it can be accessed to the greatest extent possible and designed to meet the needs of all people who wish to use it.

Racism, xenophobia, misogyny, homophobia, classism, and other types of oppression are all closely related to disability. Awareness of these power structures can further our understanding of how Universal Access and Design can meet the needs of multiple intersecting identities.

LEARN

To learn more about disability and intersectionality, check out this short article[5] about a crip-of-color critique that positions disability justice and racial justice as two closely linked movements. Additionally, you can read this article[6], which includes a number of useful recommendations on how to support LGBTQ+ students and colleagues through the principles and knowledge of Universal Design and disability justice. Video: Universal Design for Learning at a Glance [4:36][7]

The Principles of Universal Design were created as a way to evaluate existing environments as well as guide the design process for future environment creation. These 7 Principles are:

1. Equitable Use
2. Flexibility in Use
3. Simple and Intuitive Use
4. Perceptible Information
5. Tolerance for Error
6. Low Physical Effort
7. Size and Space for Approach and Use

While most frequently associated with teaching and learning or in creating accommodations for individuals with disabilities, the principles of Universal Design can be applied to a variety of functional areas in higher education. When designing and providing services for those who have been marginalized or oppressed, you are building experiences that are better for all students. Check out these resources focused on the implementation of Universal Design in student services units, as well as this podcast[8] from Teaching in Higher Ed about Universal Design in Learning.

PUT INTO ACTION

- Guided Discussion Prompts:
  - ◦ Using the 7 Principles of Universal Design as a guide, identify at least one task, policy, or procedure your role/department oversees that might be transformed into a Universally Accessible one.
  - ◦ Work with your colleagues to consider how the Principles of Universal Design might be applied to those who do not have a disability, for example a principle like “low physical effort” may seem somewhat limited to use by students with disabilities, but consider “physical effort” in terms of having to get to a physical location.
    - ▪ How much effort does it require for a student to physically access a service?
    - ▪ Would a student be able to access a location without a vehicle if they did not have one? How can that effort be minimized?
    - ▪ In what ways are the intersectional identities of our students and peers impacted by access or a lack thereof?

Week 4: Assistive Technology

Assistive Technology (AT) includes items, equipment, software that is used to increase, maintain, or improve functional accessibility for people with disabilities. This could include prosthetics, mounting systems, specially-built keyboards, screen readers, and wheelchairs, among many others. While AT may have roots in providing access for folks with dis-

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[5] https://csalateral.org/issue/6-1/forum-alt-humanities-critical-disability-studies-crip-of-color-critique-kim/

[6] https://www.researchgate.net/publication/327612298_Expanding_the_Scope_of_Universal_Design_Implications_for_Gender_Identity_and_Sexual_Orientation

[7] https://youtu.be/bDvKnY0g6e4?si=C8ZXFy-PZQM9qiCF

[8] https://teachinginhighered.com/podcast/universal-design/

abilities, it also has the capacity to benefit everyone through increased accessibility and can be a tool for Universal Design.

LEARN

Technology has become a fundamental part of our lives, and it has allowed humans to adapt in ways that were previously impossible. AT is anything that improves people's access to their physical, or digital environment. Video: Understanding Assistive Technology: Simply Said [2:32][9]

Many Assistive Technologies were originally created as accommodations for disabilities, but over time we've realized that AT isn't only beneficial for people with disabilities. Being able to write a text message with your voice is an example of AT which has become mainstream. Typing with your voice is a "dictation" feature. Before it became a tool of convenience for the broader population, it was predominately used as an AT accommodation for individuals with various disabilities. Programs like Microsoft Word[10], Outlook, and Google Docs[11] also have built-in dictation features.

Captions on videos are imperative for Deaf and hard-of-hearing access, but they may also provide a new language learner the ability to both hear and read the language for improved comprehension.

Being able to listen to a book instead of visually reading it may provide an opportunity for you to be entertained while doing something tedious and maximize your day. For someone who is blind or experiences low vision, audio books are a means to access that text.

Other Assistive Technologies that are widely used include Siri on the iPhone that reads texts aloud, speech-to-text, audiobooks, accessible door buttons, FaceTime, captions on videos, etc.

PUT INTO ACTION

- Guided Discussion Prompts:
    - What are your reactions to using a dictation feature?
    - How could Assistive Technology tools be used for your work or personal projects?
    - What other Assistive Technologies do you use on a daily basis or in the workplace?

Week 5: Campus Resources & Disability Access Strategic Planning

The *Access in Action* challenge has offered just an introduction to the concepts of accessibility, Universal Access and Design, Assistive Technology tools, and ways to decrease barriers for individuals with disabilities on our campuses. This work, like so much of our work across the college in inclusion and equity, requires an ongoing commitment. Below, you'll find more resources and opportunities to continue learning about how you can incorporate tools of universal access into your everyday work and into long-term strategic plans.

LEARN

- Cornell University has implemented an Institutional Disability Access Management Strategic Plan[12] that serves as a road map for disability access that aims to enhance the university's compliance with disability laws and regulations, and provide best practice recommendations for creating a climate that embraces individuals with disabilities.
    - This plan addresses disability access in six priority areas: physical accessibility of the campus, educational programs and services for students and employees, technology, communication, employment, and emergency preparedness and evacuation.
- In addition to these strategic planning tools, [your institution name] has a number of campus resources related to disability and access:
    - [Contact information for your employee accommodations coordinator (like those related to the Family & Medical Leave Act or Americans with Disabilities Act)
    - Contact information for your facilities or risk management office, with which individuals might report physical access concerns.
    - Contact information or link to a form to request American Sign Language interpreters or captioning services.
    - Referral information to help a student access disability-related accommodations (Perhaps your institution's disability services office).
    - Any other relevant institutional links that promote creating a universally accessible event experience for everyone on campus.]

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[9] https://youtu.be/DB9pKkZoJDc?si=xzMn401lmbvPDebU

[10] https://youtu.be/2zfnWTSObfc?si=ewGPwnewf5hQlkwh

[11] https://youtu.be/LIz9UWi5z4w?si=B7UgnoqyX-U0FmTi

[12] https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/8/7035/files/2019/11/Disability-Strategic-Access-Plan-FY-2020-2022.pdf

PUT INTO ACTION

- Continue to grow your knowledge of these topics by registering for a Universal Access training or another staff development training centered around access, disability, Universal Design, or other related topics.
- Guided Discussion Prompts:
    - Using the document from Cornell University as just one example, discuss with your colleagues ways to incorporate accessibility and Universal Design into your long-term departmental strategic plans. How can you incorporate inclusive language into your job postings that might encourage individuals with disabilities to apply?
    - Could you re-examine any of your existing shared documents or webpages to increase accessibility?

Outcomes, Implications and Transferability

Central to the overall success of this training was the continued buy-in from student affairs leadership, as well as other leaders within the division. These individuals were key players in provoking discussion through each week's guided prompts. However, no formal metric of success had been in place when this training was launched. Because of this, we must rely solely on anecdotes of engagement with the program and do not have a formal assessment to use to determine how many individuals engaged and how deeply they engaged. For those looking to replicate this training or an adaptation of it, it is recommended that you implement (a) metric(s) of success or another evaluative measure of engagement or knowledge transferred, and (b) expanded ways to engage your colleagues or division in discussion about the content of the training. This might include integrating this training into regular division meetings or creating small breakout groups that meet weekly or at another frequency to match the cadence of the delivery of the training.

While there is anecdotal evidence of individual teams and several colleagues within the student affairs division engaging thoughtfully with the content of the email series, the author received at least a couple of emails that included ableist comments ("why do we even need this training?") and negative reactions to linked content that included messaging about reproductive freedom and anti-capitalism as they relate to disability justice. These comments, while unwelcome, did not negatively impact the implementation of the training nor the value added as a professional development opportunity for many in the division. Ultimately, it is important to seek out those who *are* engaging with the material and who are interested in learning more. These individuals can become allies in the fight for disability justice within your institution and may help support or promote future similar initiatives.

Practitioners seeking to implement a similar program at their institution should consider what barriers there may be to implementation and which stakeholders they'll need to engage to overcome those barriers. Additionally, practitioners are encouraged to start small: begin with a pilot group, create some guidelines for the variety of materials you want to use in your training, and consider how you might scale up the training to your whole division or even your whole institution.

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About the Author

Danielle N. Susi received her Ph.D. in Educational Leadership and Policy from The University of Utah. Her administrative experience includes working across multiple institution types and on high-level projects to support student initiatives, such as community-engaged learning, credit for prior learning, and workforce development. Her research interests are focused on disability in higher education, primarily in the community college sector. She can be reached at Danielle.susidittmore@gmail.com.

JPED Author Guidelines

Purpose

The purpose of the *Journal of Postsecondary Education and Disability* (JPED) is to publish research and contemporary best practices related to disabled college students, college and university disability services offices, disability educators, and disability studies as a field within and lens for the study of higher education institutions. The sponsoring organization for the JPED is the Association on Higher Education and Disability (AHEAD), the primary source of disability related expertise on accessibility, legislation, rights, and any other disability-related information as it pertains to higher education. Consistent with the overall goals of AHEAD, each JPED article includes practical *implications for disability services educators* in colleges and universities.

Review Process

The JPED is peer-reviewed and uses a masked-in-both-directions review process. Although our reviewers take care to provide developmental feedback, it is essential that prospective authors follow the guidance and formatting instructions in this document carefully. The editorial process is not typically able to address major issues of conceptualization or craft in a way that leads to eventual publication.

Manuscript Topics and Types

Published manuscripts will advance JPED's purpose as detailed above (i.e., research, best practices, implications for disability services educators).

Research Articles

Manuscripts demonstrate scholarly excellence using one of the types of articles described in the *Publication Manual of the American Psychological Association* (7th edition, American Psychological Association [APA], 2020) sections 1.1-1.8 These include quantitative, qualitative, mixed methods, replication, meta-analyses, literature review, theoretical, and methodological articles. ***Inclusive of all manuscript elements (including title page, references, tables, and appendices) research articles cannot exceed 35 pages and typically are between 25-30 pages.***

Practice Briefs

Manuscripts describe innovative programs, services, or contemporary best practices that support disabled college students or disability services, and are organized using the following first-heading levels (APA 2.27):

- **Summary of Relevant Literature:** provide a succinct summary of the most relevant and contemporary literature that provides context for what is already known about the practice/program.
- **Setting and/or Participants Demographics:** provide enough information about the implementation context for the practice described for the reader to make an informed assessment regarding similarity to their own practice environment-- using a pseudonym or compositing as needed to provide anonymity for participants / institutions involved;
- **Depiction of the Problem:** provide a statement of the problem being addressed.
- **Description of Practice:** briefly describe the intended outcome for the innovative practice/program and how it has been implemented to date. Tables and figures may enhance specific details.
- **Evaluation of Observed Outcomes:** summarize formative and/or summative data used to evaluate the efficacy of your practice/program; support claims with evaluation data.
- **Implications and Transferability:** discuss what has been learned and how this practice/program could be enhanced. Be realistic about any challenges encountered and how others seeking to replicate the practice elsewhere might experience them. Offer suggestions about what could be done differently in the future to achieve better outcomes. Provide a clear description of how and why other disability service educators should consider adapting your practice/program.

Inclusive of all manuscript elements (including title page, references, tables, and appendices) practice briefs cannot exceed 15 pages and typically are between 8-12 pages.

Media Reviews

Prior to preparing a media review, please contact the JPED's Managing Editor (jped@ahead.org) to discuss the resource (e.g., book, film, online resource) you are considering reviewing. Media reviews provide:

- An overview of the resource, identifying the stated purpose, the author/creator and their viewpoint, and a general summary of the content.
- An evaluation of the resource's strengths, elaborating on the author/creator's objectives and how well those objectives were achieved.
- Recommendations about the audiences that might find the resource useful, why, and how you would suggest the resource be used. Please be sure to address its potential contribution to the field. For any gaps in the resource's content, rather than framing as weaknesses, consider offering suggestions about other works or perspectives that could be used in tandem with this resource. In other words, of what conversations in our field could this resource be an important part?

Inclusive of the text of the review itself, media reviews should typically be between 750-1250 words. Media review submissions should also be accompanied by a complete APA reference for the resource reviewed as well as references for any additional citations in the text of the review.

Manuscript Preparation

All manuscripts must be prepared according to the standards of the APA publication manual (7th edition). Authors submitting manuscripts to the JPED will be well-served to thoroughly understand Section 12 of the APA manual where the publication process is described as preparing for publication, understanding the editorial publication process, manuscript preparation, copyright and permission guidelines, and during and after publication.

When submitting a manuscript to the JPED, follow these specific guidelines:

- Submit *one* complete Word document (.doc or .docx) that contains all manuscript components (i.e., title page, abstract, body, references, tables/figures).
- Provide a separate cover letter (APA 12.11) asking that the manuscript be considered for publication and providing any other information that would be useful to the editors.
- Manuscripts should have one-inch margins in 12-point Times New Roman font. Double space the abstract, body, and references; single space the title page and tables/figures.
- The title (APA 2.4) should not exceed 12 words.
- Place the abstract (maximum 250 words, APA 2.9) on page two (following the title page). Include three to five keywords (APA 2.10) below the abstract (does not apply to book reviews).
- Use APA Section 1, Scholarly Writing and Publishing Principles, related to types of articles and papers; ethical, legal, and professional standards in publishing; ensuring the accuracy of scientific findings; protecting the rights and welfare of research participants and subjects; and protecting intellectual property rights.
- Manuscripts must comply with ethical standards governing the conduct of research. This includes prior review and approval by an appropriate institutional review board (IRB) or research ethics committee (REC) when applicable and especially when human subjects are involved. Authors are expected to include a clear statement in the manuscript regarding this approval. If ethics approval was not required, a brief explanation should be provided (e.g., "This study involved publicly available anonymized data and did not involve human subjects."). The journal reserves the right to request documentation of ethics approval, participant consent forms, or correspondence with regulatory bodies as part of the review or publication process
- Use APA Section 2, Paper Elements and Format, to align paper elements, format, and organization. Indent paragraphs (APA 2.24), and adhere to heading levels (APA 2.27) to organize the manuscript.
- Content and method are important. Use APA Section 3, Journal Article Reporting Standards, related to overview of reporting standards; common reporting standards across research designs; and reporting standards for quantitative, qualitative, and mixed methods research. Please refer to Madaus et al. (2020) for research guidelines for higher education and disability where instructions are provided for describing samples and study locations, and appropriately selecting and describing the methodologies employed.
- Writing is important, carefully edit and proofread the manuscript. Use APA Section 4, Writing Style and Grammar, related to continuity and flow, conciseness and clarity, verbs, pronouns, and sentence construction. Use APA Section 6, Mechanics of Style, related to punctuation, spelling, capitalization, italics, abbreviations, numbers, statistical and mathematical copy, presentation of equations, and lists. Refer to APA 6.32-6.39 to properly report numbers expressed as numerals or in words.
- APA Section 5, Bias-Free Language and Guidelines provides guidance for writing about people, identity, and other topics wherein bias in writing is

common. Although generally useful, this section's discussion of disability is reductive. Authors should follow their best judgment in this regard. Additional guidance is provided below.

- Regarding language related to disability, authors must determine the type of wording that is best for their given study - typically person-first or identity-first language. (See the "AHEAD Statement on Language" for details about these options and for additional resources on the topic.) We encourage authors to be explicit about their choices in the manuscript, informing readers about the rationale for their choice of language. When research or program participants are disabled and it is possible to determine their preferences, the preferred language of those individuals should be prioritized ahead of researcher or practitioner decisions. Additionally, aligned with the AHEAD statement in terms of outdated language use, we discourage "the use of outmoded euphemisms such as 'special needs,' 'physically or mentally challenged,' differently- or alternatively-abled, etc." unless there is an explicit reason, such as referring to past practices or terminology to learn something valuable from it for current practice.
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Editorial and Review Teams

The editorial team is composed of Ryan Wells, Valerie Spears, Richard Allegra, and Cassie Sanchez. The review board is composed of more than 70 international disability scholars and disability services educators with expertise on disabled college students, disability services, disability studies, and research methodologies.

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