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Impact of the COVID-19 Pandemic on Instructional Experiences of Students With Intellectual and Developmental Disability

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Abstract

Students with intellectual and developmental disabilities (IDDs) were particularly vulnerable to the school closures that resulted from the COVID-19 pandemic. We sought to obtain a baseline understanding of the instructional experiences of students with IDD before March of 2020 to assess the nature and degree of the pandemic's impact. We recruited caregivers of students with IDD to complete a survey of their children's educational experiences across three time periods (before March 2020, Spring 2020, and Fall 2020). No caregivers reported that their children had experienced remote or distance learning prior to March 2020, and the majority reported their children lost access to instruction and related services outlined in their Individualized Education Program during Spring of 2020. We report additional findings related to instruction, attitudes, and skills. Implications for future research, practice, and policy are discussed.

Keywords

intellectual disability, survey, COVID-19, caregiver, autism

In the United States, school serves a critical function for students with intellectual and developmental disabilities (IDDs), as it is where they receive specially designed instruction to access and make progress in the general curriculum. These students may be eligible for special education services in the areas of intellectual disability (ID), autism spectrum disorder (ASD), and/or multiple disabilities and represent about 23% of the students served under IDEA (U.S. Department of Education [USDOE], 2022). When the COVID-19 pandemic caused nationwide school closures in March 2020, specially designed instruction and critical therapies were no longer safe to continue in-person.

The COVID-19 pandemic amplified the existing vulnerability of individuals with IDD, a historically marginalized group with chronically poor in- and post-school outcomes (Mazzotti et al., 2021). Elementary children with IDD fall into the category of students considered most at-risk for learning loss (Kuhfeld et al., 2022). Secondary students with IDD lost access to services and supports that positively correlate with postschool success in education, employment, and independent living for students with disabilities, such as work-based learning opportunities (Mazzotti et al., 2021; Rowe et al., 2021). Adults with IDD were not able to work from home during the initial months of the pandemic and instead experienced layoffs or significant reduction in hours worked monthly (Schall et al., 2021).

Individuals with IDD had much to lose from the abrupt and prolonged disruption. Caregivers of students with IDD have reported various effects of the challenges districts faced to provide their children with the services and supports outlined in their Individualized Education Programs (IEPs). White et al. (2021) surveyed 3,502 caregivers of dependent children and adults with ASD in the United States between March and April of 2020 regarding the impact of COVID-19, with 80% reporting disruptions to special education, 88% to speech language therapy, 84% to physical therapy or occupational therapy, and 77% to applied behavior analysis therapy. To capture the experiences of individuals with IDD who are likely to experience severe developmental disabilities and complex medical needs, Jeste et al. (2020) surveyed 619 caregivers of individuals with syndromic IDDs in the United States between April and May of 2020. They similarly reported loss of access to academic instruction (43%), speech language therapy (52%), occupational therapy (57%), physical therapy (60%), and applied behavior analysis therapy (60%). Together, these findings illuminate the educational changes that occurred in Spring 2020 for students with IDD in the United States. Furthermore, they invite questions about

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possible effects of these changes on students and their families, especially as schools adjusted offerings and teaching modalities.

Prior to Spring 2020, school professionals had minimal to no research-based models to follow for providing interventions to students with IDD in online or remote settings (Brewer et al., 2022; White et al., 2021). It is therefore not surprising that when asked about the ease with which they were able to provide services to students with disabilities between mid-May and September 2020, 58% of districts in a nationally representative survey conducted by the American Institutes for Research reported it was more or substantially more difficult to comply with IDEA requirements to provide specially designed instruction than pre-COVID (Jackson & Bowdon, 2020). High-poverty districts, who serve students with disabilities in higher proportions and with fewer certified special education teachers (Mason-Williams et al., 2020), reported greater challenges during this time than low-poverty districts (Jackson & Bowdon, 2020). Further distressing to students of color with IDD and those from low-income families is the "substantially unequal burden of COVID-19" (Chen & Krieger, 2021, p. S45) reflected in higher positivity and death rates in their communities.

The pandemic also had a detrimental impact on mood and behavior for individuals with IDD. An international survey conducted in 2020 found caregivers of individuals with IDD across 12 countries observed increases in their depression/anxiety, stereotyped behaviors, and aggression toward others (Linehan et al., 2022). Changes in school modality, setting, or services may have impacted K–Grade12 students with IDD's perceived attitudes toward school. Understanding these impacts may provide valuable information for how to support their needs more comprehensively moving forward. Maehr's (1984) theory of personal investment indicates positive student attitudes toward school (i.e., adaptive pattern of cognition and affect) contributes to motivation and engagement (Moè et al., 2009). As such, cognizance of attitudes of individuals with IDD toward school before the pandemic is necessary to interpret these changes.

Therefore, our purpose was to survey caregivers of K–12 students with IDD in the United States about their students' instructional experiences before COVID-19, in Spring of 2020, and during Fall of 2020. By asking caregivers about their perceptions of how these changes affected their children, we aimed to explore a potential relation between their child's experience and attitude toward school. This manuscript addresses the following research questions:

> **Research Question 1 (RQ1):** How did the COVID-19 pandemic change instruction for school-age students with IDD?
>
> **Research Question 2 (RQ2):** What are the perceived effects of these changes on students with IDD?
>
> **Research Question 3 (RQ3):** Is there a relationship between instruction during COVID-19 and perceived student attitude toward school?

Method

Participants

Participants were 66 caregivers of school-age students with IDD who completed an online survey about their child's educational experiences prior to and during COVID-19. Respondents were White (92.4%), Hispanic/Latinx (9.1%), Black (1.5%), Asian (1.5%), Multiracial (1.5%), or preferred not to disclose (1.5%). Caregivers ranged from 32 to 58 years old ($M = 43.97$; $SD = 6.6$), and most were married/partnered (87.9%), employed (71.2%), and college educated (i.e., associates degree or higher; 71.2%).

Students in the sample had diagnoses of ASD (56.1%, $n = 37$), ID (10.6%, $n = 7$), both ASD and ID (10.6%, $n = 7$), MD (18.2%, $n = 12$), or other (4.5%, $n = 3$). Students ranged from kindergarten to post-12th grade transition, with a slight majority of the sample (51.5%; $n = 34$) in elementary school. Students in the sample were White ($n = 58$; 87.9%), Multiracial ($n = 4$; 6.1%), Black ($n = 1$; 1.5%), Asian ($n = 1$; 1.5%), from other racial groups (Unspecified, $n = 1$; 1.5%), or their caregivers preferred not to disclose ($n = 1$; 1.5%). Ten students (15.2%) in the sample were Hispanic/Latinx. All students spoke English at home, and seven students (10.6%) spoke other languages, as well (e.g., Spanish, American Sign Language, Portuguese, French, Hebrew). See Table 1 for detailed student demographics. The participants represented 25 states across all six geographic regions of the United States. States with the most responses were Pennsylvania ($n = 16$; 24.2%) and Florida ($n = 7$; 10.6%), perhaps due in part to researcher connections to organizations in these states.

Recruitment

After receiving approval from the Institutional Review Board, we attempted to recruit a sample of caregivers of students with IDD in kindergarten through age 21 years from across the United States. We used snowball sampling to distribute our survey to professional and parent organizations (e.g., Council for Exceptional Children, Special Olympics, ARC) via individual emails, listservs, social media (e.g., IDD-specific Facebook groups, Twitter), and direct messages to organization leaders. We identified organizations in each state and region to increase the breadth of our sampling. To incentivize participants, we disclosed in the recruitment flier and survey that participants could be 1 of 20 randomly selected individuals to receive a US$25 gift card.

The recruitment resulted in a total of 125 participants initiating the survey over a 6-week span between December

Table 1. Demographics for Students in the COVID-19 Study.

Variable	*n*	% of sample
Adults per household		
1	6	9.1
2	53	80.3
3	7	10.6
Gender identity		
Female	15	22.7
Male	51	77.3
Race		
Asian	1	1.5
Black/African American	1	1.5
White	58	87.9
Multiracial	4	6
Other	1	1.5
Prefer not to disclose	1	1.5
Ethnicity		
Hispanic/Latino	10	15.2
Not Hispanic/Latino	56	84.8
Primary language		
English	66	100
Secondary language		
Spanish	3	4.5
American sign language	1	1.5
French	1	1.5
Hebrew	1	1.5
Portuguese	1	1.5
Augmentative and Alternative Communication device	1	1.5
Grade		
K-2	12	18.2
3rd–5th	22	33.3
6th–8th	14	21.2
9th–12th	14	21.2
Post-12th grade transition	4	6.1
Disability		
ASD	37	56.1
ID	7	10.6
ASD and ID	7	10.6
MD	12	18.2
Other	3	4.5

Note. $N = 66$. ASD = autism spectrum disorder; ID = intellectual disability; MD = multiple disabilities.

2020 and January 2021. After the survey closed, we excluded 59 responses for the following reasons related to inclusion criteria and data quality: Participants did not meet inclusion criteria (e.g., specific learning disability, no IDD; $n = 19$); duplicate IP addresses ($n = 2$); did not provide consent ($n = 1$), surveys <50% completed ($n = 5$), and surveys appeared to be completed by "computer robots" (e.g., completed survey in <10 min, $n = 32$). After reviewing all responses, 66 participant responses were included for analysis.

Survey Instrument

Participants were asked to complete an online survey created by the research team through a secure, web-based platform (Qualtrics). If participants had more than one child with IDD, they were asked to select one to focus on for the purpose of the survey and only complete the survey once. Next, participants completed questions about their child's educational experiences prior to March 2020 (pre-COVID; Time 1), from March to June 2020 (Spring 2020; Time 2), and during Fall 2020 (Time 3) to understand (a) participants' experiences during COVID-19, and (b) how these experiences differed from those prior to the pandemic. Each section prompted caregivers to recall the specified time periods when answering that specific section's questions. Because all data collection occurred in December 2020 to January 2021, all data reported are retrospective. In each time period, survey items pertained to the context of where students received instruction and services, the specific instructional content students received, and the supports available to them. The instrument included a range of response formats such as multiple-choice, rating and ranking scale, Likert scale, matrix, drop-down, and open-ended questions (e.g., to explain selections of "Other." Except for one response that was open for 4 days, survey completion times ranged from 11 min to 92 min ($M = 28$; $SD = 16$).

Pilot Survey. We piloted the survey instrument twice. The initial pilot survey included four caregivers of children with IDD of diverse ages, backgrounds, and geographic locations who were asked to give us feedback on the content and format of the survey. They each received a gift card to thank them for their time. We then revised the survey based on initial pilot feedback; we reworded items that were unclear, eliminated redundant questions, and made other adjustments to improve survey clarity and brevity. Next, doctoral students in special education who were not members of the research team piloted the revised survey. We made minor changes to wording of questions based on feedback and determined that it was ready for distribution. None of the pilot responses was included in the final sample. The final version of the survey can be accessed via Open Science Framework at bit.ly/3jOaIMI.

Survey Items

Participant Demographics. The survey asked participants to report demographic information for themselves as the caregiver, their household, and their child with IDD. Regarding their child, they were asked to report gender, race, ethnicity, grade, whether they received special education services and under what disability category, and if they participated in their state's alternate assessment.

Context and Content. We asked a total of 13 questions related to instructional context, including where students were enrolled and learning formats offered by their schools (i.e., fully in-person, fully virtual, hybrid). We also asked where students received most of their instruction (e.g., general education classroom, special education classroom) and whether extended school year (ESY) was offered during Summer 2020. We asked one question per time period related to content. Participants estimated on average how much time they spent with their child on weekdays across seven instructional areas (literacy, science/social studies, mathematics, life skills, social skills, job skills, motor skills).

Supports. We asked a total of 19 questions (multiple-choice, multiple selection, and open-ended) related to supports for their child across three time periods. Questions asked what school-based supports and services students received, including the frequency and format of instruction they received from teachers or related service providers. We transformed categorical (e.g., never, one time per day) responses into ordinal variables (e.g., 1 = *never*, 5 = *one time per day*) to estimate correlations with other variables. Higher numerical values indicate greater frequency of support.

Perception of Attitudes Toward School and Skill Regression. We asked participants five questions about their perception of their child's attitudes toward school and perceived areas of regression using a 4-point Likert scale (*strongly liked school, somewhat liked school, somewhat disliked school*, and *strongly disliked school*). We also asked caregivers to what degree, if any, their children exhibited regressions across seven instructional areas: literacy (reading, writing), science/social studies, mathematics, life skills, social skills, job skills, and motor skills. We report these findings categorically (e.g., somewhat liked school) for descriptive purposes. We also transformed these data to ordinal variables (e.g., 1 = *strongly disliked school*; 4 = *strongly liked school*, etc.) to estimate correlations with other variables, such that higher values indicate more positive feelings toward school.

Data Analysis

We used IBM SPSS Statistics (version 26) analytic software for all descriptive analyses. When possible, we calculated responses for each question across three time periods: prior to COVID-19, Spring 2020, and Fall 2020. We calculated descriptive statistics (e.g., mean, percentages) to summarize responses from items using rating scales. To explore associations between ordinal variables, we calculated Spearman's rank order correlations.

Results

Findings from this survey, as expected, indicated variability in educational experiences of students with IDD during COVID-19. We summarize our findings by research questions below.

Changes in Instruction

To understand how the COVID-19 pandemic changed instruction for students with IDD, we analyzed reported instructional context, content, and support prior to and during the COVID-19 pandemic. Regarding where students were enrolled, 81.8% (n = 54) of respondents reported that their students attended traditional public schools prior to COVID-19, 15.2% (n = 10) were enrolled in private schools, and 3% (n = 2) had students enrolled in another setting (unspecified). A majority (75.8%, n = 50) reported that their students remained enrolled in their schools throughout 2020. Sixteen students moved to a different school, only three of whom reported to have moved for reasons related to COVID-19.

No respondents reported that their child's school offered hybrid or fully remote instruction prior to COVID-19. In Spring 2020, 80.3% (n = 53) began remote learning, 4.5% (n = 3) continued attending school in person, and 15.2% (n = 10) reported their children did not receive any instruction. By Fall 2020, 71% of respondents' (n = 44) schools offered various instructional formats (hybrid, fully in-person, etc.) for students to choose from; 19.3% of respondents' (n = 12) schools provided a single hybrid model in which all students received both virtual and in-person instruction, and 9.7% of respondents (n = 6) reported their schools only offered in-person instruction. In Fall 2020, 30.6% (n = 19) attended school in-person, 17.8% (n = 11) attended in a hybrid model, and 51% (n = 32) were learning remotely. Finally, responses varied regarding access to ESY. Less than half of the sample (43.9%, n = 29) participated in ESY in 2020. Of those students, 82.7% (n = 24) participated fully remotely, four students (13.8%) attended in person, and one student participated in a hybrid format.

Table 2 displays the estimated time caregivers spent with their children on weekdays across instructional areas prior to COVID-19, in Spring 2020, and in Fall 2020. Whereas prior to COVID-19, only 18.6% of caregivers reported spending 30 min or more on literacy instruction with their child on weekdays, 52.4% of respondents were spending over 30 min on literacy in Spring 2020, with 22.2% spending over 60 min on this topic. Prolonged home literacy support continued into Fall 2020, as 63.3% of respondents reported spending over 30 min on weekdays in this area. Likewise, home instruction in mathematics increased for much of the sample, with 62.5% reporting spending $<$15 min on weekdays supporting math prior to COVID-19, to almost half of the sample (45.2%) spending $>$30 min in Spring 2020, and to 51% spending $>$30 min on weekdays on math in Fall 2020.

Table 2. Percentage of Participants Reporting Time Student Spent With Caregivers on Instructional Areas During Weekdays, in Minutes.

Content area	Pre-COVID[a] (minutes)					Spring 2020[b] (minutes)					Fall 2020[c] (minutes)				
	0	<15	15–30	30–60	>60	0	<15	15–30	30–60	>60	0	<15	15–30	30–60	>60
Literacy	4.6	46.2	30.8	15.4	3.2	1.6	23.8	22.2	30.2	22.2	1.7	13.3	21.7	45	18.3
Math	1.6	60.9	25	7.8	4.7	1.6	22.6	30.6	30.6	14.6	1.7	15	33.3	38.3	11.7
Science/SS	11.3	67.7	11.3	4.7	4.7	8.2	41	19.7	21.3	9.8	10.2	20.3	35.6	28.9	5
Life skills	12.3	24.6	27.8	21.5	13.8	21	27.4	13	24.2	14.4	26.7	20	25	16.6	11.7
Social	6	28.8	40.9	16.7	7.6	9.9	47.5	16.4	13.1	13.1	11.7	30	30	23.3	5
Job	44.6	40	10.8	3.1	1.5	60	26.7	5	5	3.3	52.5	16.4	11.5	4.9	14.7
Motor	21.5	40	18.5	13.8	6.2	26.6	31.7	18.3	16.7	6.7	30	23.3	25	16.7	5

Note. SS = social studies; Social = social skills; Job = job skills; Motor = motor skills.
[a] *n* range = 62–66. [b] *n* range = 60–63. [c] *n* range = 59–61.

We calculated descriptive statistics to estimate school-based supports and services students received prior to COVID-19, in Spring 2020, and in Fall 2020. We assumed that prior to COVID-19 all students received some degree of one-on-one specially designed instruction. All but two respondents (97%; $n = 64$) reported that their students with IDD also received related services from school prior to COVID-19. Most respondents reported that these services included speech/language therapy (73.4%; $n = 47$) and occupational therapy (68.8%; $n = 44$), followed by paraeducator support (60.9%; $n = 39$) and behavior plans (54.7%; $n = 35$). Fewer students reportedly received physical therapy (29.7%; $n = 19$) or used Augmentative and Alternative Communication devices (21.9%; $n = 14$) at school, and 16 respondents (25%) reported students receiving other related services or supports not listed. Responses ranged from 0 to 7 related services and supports per student ($M = 3.24$; $SD = 1.19$; median = 3) prior to COVID-19.

Almost one third of respondents (32.1%; $n = 17$) reported that students never received any one-on-one instruction in Spring 2020. Only 39 respondents (59.1% of the total sample) reported students receiving related services and supports, a 39% reduction from the time period pre-COVID. Responses ranged from 0 to 6 related services and supports in Spring 2020, and respondents reported fewer supports per student, on average ($M = 1.35$; $SD = 1.5$; Median = 1). Again, the most common areas for related supports during Spring 2020 were speech/language therapy (74.4%; $n = 29$) and occupational therapy (51.3%; $n = 20$), followed by paraeducator support (25.6%; $n = 10$), behavior plans and physical therapy (each 20.5%; $n = 8$), and AAC (15.4%; $n = 6$). Eight respondents (20.5%) reported their students receiving "Other" related services and supports. All related service areas and supports were reduced in this time period.

In Fall 2020, only 9.5% of respondents ($n = 4$) reported their child not receiving any one-on-one instruction. Similarly, reported receipt of related services in Fall 2020 increased from Spring 2020 levels, as 90% ($n = 60$) of respondents reported their children received related services and supports from school during this time. As in the time pre-COVID, parents reported a range of 0 to 7 related services and supports per student ($M = 2.39$, $SD = 1.7$). Again, the most common areas for related supports during Fall 2020 were speech/language and occupational therapy (each 68.3%; $n = 41$), followed by paraeducator support (46.7%; $n = 28$), behavior plans (40%; $n = 24$), physical therapy (26.7%; $n = 16$), AAC (13.3%; $n = 8$), and "other" related services (unspecified, 11.7%; $n = 7$).

Perceived Effects on Students

To understand the effects of the COVID-19 pandemic and schooling changes on students with IDD, we asked caregivers about their perceptions of their child's attitude toward school during each of these time periods and whether they had observed regression in skills. Pre-COVID, 43.9% ($n = 29$) of students were reported by caregivers to strongly like school, followed by 33% ($n = 22$) somewhat liking school, only 16.7% ($n = 11$) somewhat disliking school, and 6.1% ($n = 4$) strongly disliking school. Caregiver perception of students' attitudes toward school strongly shifted in Spring 2020, as 43.4% ($n = 26$) reported their child strongly disliking school, 23.3% ($n = 14$) somewhat disliking school, 23% ($n = 14$) somewhat liking school, and only 10% ($n = 6$) strongly liking school. Caregiver reports of student attitudes toward school in Fall 2020 were more similar to pre-COVID than Spring 2020, with 40.3% ($n = 25$) somewhat liking school, 27.4% ($n = 17$) strongly liking school, 17.8% ($n = 11$) somewhat disliking school, and 14.5% ($n = 9$) strongly disliking school.

When asked about possible regressions exhibited by students during Spring 2020, 81.7% ($n = 49$) of respondents reported regressions in at least one of the following areas: academics, language, adaptive behavior, life skills, social skills, job skills, motor skills, or other. Responses ranged from 0 to seven regression areas ($M = 2.2$, $SD = 1.9$) per student during this time period. Most common were

Table 3. Descriptive Statistics and Correlations Among Student Variables Prior to COVID, in Spring 2020, and in Fall 2020.

Variable	*n*	*M*	*SD*	Grade	1	2	3	4	5	6	7	8	9	10
Pre-COVID														
1. Number of related services	66	3.24	1.66	−.30*	—									
2. School enjoyment	66	3.15	0.92	.01	.18	—								
Spring 2020														
3. One-on-one instruction	53	3.21	1.70	−.28*	.29*	.15	—							
4. Number of related services	66	1.35	1.50	−.24	.41**	.16	.49**	—						
5. Areas of regression	63	2.38	1.91	−.26*	.15	−.19	.13	−.05	—					
6. School enjoyment	60	2.00	1.04	.37**	−.10	.36**	.01	.01	−.36**	—				
Fall 2020														
7. One-on-one instruction	42	3.93	1.40	−.11	.21	−12	.36*	.25	.14	.34*	—			
8. Number of related services	62	2.66	1.75	−.34**	.84**	.12	.28	.42**	.05	−.04	.26	—		
9. Areas of regression	62	1.76	1.93	−.24	.02	−.32*	−.05	−.04	.74**	−.34**	.05	−.07	—	
10. School enjoyment	62	2.80	1.03	.15	.20	.42**	.12	−02	−.12	.54**	.21	.19	−.40**	—

Note. Grade = student grade level in Fall 2020.
$^{*}p < .05$. $^{**}p < .01$.

regressions in social (*n* = 33, 55%), academic (*n* = 32, 53.3%), and adaptive skills (*n* = 29, 48.3%), followed by language (*n* = 20, 33.3%), life- (*n* = 15, 25%), motor- (*n* = 14; 23.3%), and job skills (*n* = 3; 4.5%). Four respondents reported that their children experienced regression in other, unspecified domains during Spring 2020. In Fall 2020, the number of respondents who reported one or more areas of regression dropped slightly to 72.2% (*n* = 39). As in the Spring, most commonly reported areas of regression were social (*n* = 26, 48.1%), academic (*n* = 24; 44.4%), adaptive (*n* = 19; 35.2%) skills, followed by life (*n* = 13; 24.1%), language (*n* = 11, 20.4%), motor (*n* = 11, 20.4%), and job skills (*n* = 4; 7.4%). As in Spring 2020, respondents reported a range of 0 to 7 areas of regression per student (*M* = 1.76, *SD* = 1.93) in Fall 2020.

Relation Between Students' Instructional Experiences and Attitudes Toward School

To explore associations between students' instructional experiences during COVID-19 and caregivers' perceptions of their attitudes toward school, we calculated Spearman's rho correlations among the following variables: student grade level, school enjoyment (Pre-COVID, Spring 2020, Fall 2020), number of related supports (Pre-COVID, Spring 2020, Fall 2020), frequency of one-on-one instruction (Spring 2020, Fall 2020), and number of areas of regression (Spring 2020, Fall 2020). These correlations are reported in Table 3. Data met assumptions of ordinality, paired data, and monotonicity required for such calculations. In addition to expected statistically significant correlations among the same variable measured across timepoints (e.g., number of related services in Time 1, Time 2, and Time 3), findings indicated significant associations among certain variables. Specifically, student grade was positively correlated with school enjoyment in Spring 2020, suggesting that older students were perceived to have more positive attitudes during school at that time. However, analyses indicated negative correlations between student grade and the following variables: number of related services (prior to COVID-19 and Fall 2020), and frequency of one-on-one instruction in Spring 2020, and areas of regression in Spring 2020. These findings indicate that younger students with IDD were more likely to receive one-on-one instruction and experience more areas of regression than older students in this same time period. Correlational findings also suggested significant, negative associations between areas of regression in Fall 2020 and school enjoyment in all three time periods. That is, students who reportedly continued to experience more areas of regression in Fall 2020 were more likely to have negative attitudes toward school prior to and during COVID-19.

Discussion

It is widely acknowledged that individuals with IDD were among the most vulnerable to the impacts of the COVID-19 pandemic across multiple domains of life, including health (Turk et al., 2020), education (Kuhfeld et al., 2022), finances (Running Bear et al., 2021) employment (Schall et al., 2021), and social relationships (Wanjagua et al., 2022). Our purpose was to document how the COVID-19 pandemic impacted the instructional experiences of K-12 students with IDD in the United States. To do so, we surveyed caregivers of students with IDD to understand their perceptions of their children's instructional experiences before COVID-19, in Spring of 2020, and in Fall of 2020. Our findings contribute important information to the field on the experiences of K through age 21 years students with IDD in regard to how the pandemic influenced their instruction and how they perceived the effects of these changes on their child's skills and attitudes toward school.

One perhaps unsurprising finding is that none of the respondents reported their children engaged in remote or distance learning prior to Spring of 2020. The necessary shift in mode of instructional delivery was also novel for their teachers (Hurwitz et al., 2022; Schuck & Lambert, 2020), as they now had to guide caregivers to support their children in remote learning. This need for caregiver support may explain the sharp increase in time students spent with caregivers on instructional areas reported by our participants when schools closed (Brewer et al., 2022).

Echoing findings of prior surveys (e.g., Jeste et al., 2020; Neece et al., 2020; White et al., 2021), most of our participants reported that their children lost access to the related services and support their IEPs indicated were necessary for free, appropriate public education (FAPE). The lack of instruction in Spring 2020 and dramatic decrease in provision of school-based supports and services during Spring and Fall of 2020 compared with before COVID-19 is especially alarming considering most respondents reported their children attending traditional public schools. This was a specific concern of leaders in special education at the onset of the pandemic. In their commentary published in May 2020, Thompson and Nygren (2020) argued for children with disabilities to have full access to educational opportunities no matter the mode of instruction. Acknowledging the "growing pains" experienced by the educational system in this historic move to a new way of educating students, the authors warned of false dichotomies between meeting the needs of some or all students and use of the pandemic to justify anything less than continued provision of FAPE.

Although the descriptive nature of our study precludes causal inferences, the reported change in caregiver perception of students' attitudes toward school during Spring 2020 and student skill regressions are striking. Almost the same percent of students who were reported to strongly like school pre-COVID (43.9%) were reported to strongly dislike school in Spring 2020 (43.6%), with older students showing overall more positive attitudes toward school. Also concerning is that 81% of caregivers reported perceived regression in at least one domain during Spring 2020 and 72.2% in Fall 2020, most commonly in social skills (55%, 48%), followed closely by academic skills (53%, 44%). These results align with those of Linehan et al. (2022) in their international survey of caregivers of children and adults with IDD, where 65% of family members and 62% of direct support professionals reported changes in mood (depression, anxiety), an increase in aggression (49.3%, 44.8%), more self-harm (46.3%, 33.3%) and more aggression toward others (49.3%, 44.8%). Caregivers of younger students with IDD were more likely to report areas of regression, in line with findings of Kuhfeld et al. (2022) and Lienhan et al. This is especially concerning given that students with IDD have been historically excluded from grade-aligned academic instruction, and general curriculum access is a predictor of postschool outcomes (Mazzotti et al., 2021).

Limitations and Future Research

Our results must be considered in the context of study limitations. First, we sent our survey in Winter 2020 and asked respondents to recall information from various time points throughout the previous year. This design is likely robust to the factual recall (e.g., receipt of related services). However, recall of more subjective information (e.g., perceived attitudes toward school) may be susceptible to unintended positive or negative bias. We attempted to mitigate this effect by grouping questions about previous time periods together, but our design does not allow for control of this potential factor.

The next limitation is the survey length. Authors made an a priori decision to gather in-depth information on experiences from caregivers, resulting in a longer survey and average response time. A longer survey may have contributed to survey attrition and/or non-completers, and a shorter survey may have yielded a more robust sample size. Relatedly, the demographics of our sample should not be considered lightly. Although we aimed to recruit a nationally-representative sample, a majority of our sample participants were White, formally educated women who are parents of children with autism. This demographic aligns with that from other surveys in which respondents predominantly identified as mothers of individuals with autism (70%; Neece et al., 2020), and White, older, and identified as female (White et al., 2021). However, the results from our survey do not speak for the experience of all caregivers of students with IDD, who are more diverse in gender, age, education, and socioeconomic status.

Regardless, this discrepancy between our sample demographics (i.e., well-educated White mothers with self-identified social capital, privilege, access to training or background in education, and the time to answer a 30-min survey) and that of the larger population raises an important point about the implications of our findings. If our sample reported experiencing significant regression in their children's skills, and one in five of their children were not receiving any instruction during initial school closures, we may estimate that the true picture is far more dire. That is, respondents without such privileges and resources (and their children) may be more likely to experience acute difficulties accessing instruction and related supports during (COVID-19 Kuhfeld et al., 2022; Running Bear et al., 2021; Wanjagua et al., 2022). More research is needed from the perspectives of families of children with IDD who do not fit the description of these samples. Qualitative or mixed-method studies may provide valuable insight regarding the experiences and needs of families of students with IDD during COVID-19 moving forward, with a specific focus on systemic issues related to these experiences (Running Bear et al., 2021).

Finally, caregivers reporting on behalf of their children introduce certain advantages and limitations. Although caregivers can offer greater perspective about instructional supports that students may not be aware of, we are unable to report the firsthand experiences of students with IDD, whose self-reported data may differ from their parents' perspectives. There is a paucity of direct surveys of students with IDD regarding their school experiences and attitudes. Research that intentionally and explicitly centers the voices of students with IDD themselves is needed to determine the degree to which existing theories (e.g., Maehr, 1984) and identified relationships regarding attitude toward school established based on samples of students without disabilities (e.g., Moè et al., 2009) also apply for those with IDD.

Implications for Policy and Practice

Unfortunately, teaching and learning during a pandemic is no longer unprecedented. Whereas schools, students, and caregivers all abruptly changed their way of teaching, learning, and living when schools shut down in the Spring of 2020, the COVID-19 pandemic is ongoing 2 years later. The resulting changes to teaching and learning have implications for multiple stakeholders. Teacher educators can no longer prepare future teachers for the classrooms and schools we remember, as that is not the context they will be working in. Instead, teachers must have preparation and support necessary to continue providing high-quality specially designed instruction using non-traditional methods.

Although collaboration and communication with families have always been centered in special education, our previous textbooks, lectures, activities, and syllabi are insufficient. There is an entirely new level of communication and collaboration needed between teachers and caregivers of students with IDD (Brewer et al., 2022). Expectations for caregivers to step into the role of instructor or assisting with instruction need to be carefully thought out and supported with training. These strategies are especially important for elementary teachers, given our findings indicating greater areas of regression and more negative attitudes about school among younger students with IDD when schooling was interrupted in Spring 2020. Moreover, students with IDD need to be prepared to learn in a variety of modalities and have structured experiences necessary to become fluent with digital literacy.

Moving forward, many educators and caregivers will look for federal and state departments of education to establish minimum standards and guidelines for meeting educational needs of students with disabilities during school closures. Students with IDD are particularly vulnerable as disruption to education and therapies will lead to worsening behavioral, cognitive, and health outcomes (Turk et al., 2020; Wanjagua et al., 2022). Unless these proactive plans are equitable and considerate of the resources and culture of the diverse students with IDD across the United States (Running Bear et al., 2021), disparities in outcomes will continue to prevail.

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References

Brewer, B. N., Riggs, L. A., Courtade, G., & Landrum, T. J. (2022). Using caregiver support to promote efficacy of nontraditional instruction provided to students with extensive support needs. *Rural Special Education Quarterly*, *41*(1), 39–47. https://doi.org/h3b6

Chen, J. T., & Krieger, N. (2021). Revealing the unequal burden of COVID-19 by income, race/ethnicity, and household crowding: U.S. county versus zip code analyses. *Journal of Public Health Management and Practice*, *27*(1), S43–S56. https://doi.org/fdcx

Hurwitz, S., Garman-McClaine, B., & Carlock, K. (2022). Special education for students with autism during the COVID-19 pandemic: "Each day brings new challenges." *Autism*, *26*(4), 889–899. https://doi.org/h3b7

Jackson, D., & Bowdon, J. (2020). *National survey of public education's response to Covid-19: Spotlight on students with disabilities*. American Institutes for Research. https://www.air.org/sites/default/files/COVID-Survey-Spotlight-on-Students-with-Disabilities-FINAL-Oct-2020.pdf

Jeste, S., Hyde, C., Distefano, C., Halladay, A., Ray, S., Porath, M, Wilson, R. B., & Thurm, A. (2020). Changes in access to educational and healthcare services for individuals with intellectual and developmental disabilities during COVID-19 restrictions. *Journal of Intellectual Disability Research*, *64*(11), 825–833. https://doi.org/ghw7bm

Kuhfeld, M., Soland, J., Lewis, K., Ruzek, E., & Johnson, A. (2022). The COVID-19 school year: Learning and recovery across 2020-2021. *AERA Open*, 8, 1–15. https://doi.org/h3b8

Linehan, C., Birkbeck, G., Araten-Bergman, T., Baumbusch, J., Beadle-Brown, J., Bigby, C., . . . Tossebro, J. (2022). COVID-19 IDD: Findings from a global survey exploring family members' and paid staff's perceptions of the impact of COVID-19 on individuals with intellectual and developmental disabilities (IDD) and their caregivers. *HRB open research*, *5*(27), 1–35. https://doi.org/10.12688/hrbopenres.13497.1

Maehr, M. L. (1984). Meaning and motivation: Toward a theory of personal investment. In C. Ames & R. Ames (Eds.), *Research on motivation in education: Student motivation* (vol.1, pp. 115–144). Academic Press.

Mason-Williams, L., Bettini, E., Peyton, D., Harvey, A., Rosenberg, M., & Sindelar, P. T. (2020). Rethinking shortages in special education: Making good on the promise of equal opportunity for students with disabilities. *Teacher Education and Special Education*, *43*(1), 45–62. https://doi.org/gjgfsj

Mazzotti, V. L., Rowe, D. A., Kwiatek, S., Voggt, A., Chang, W. H., Fowler, C. H., . . . Test, D. W. (2021). Secondary transition predictors of postschool success: An update to the research base. *Career Development and Transition for Exceptional Individuals*, *44*(1), 47–64. https://doi.org/f2xx

Moè, A., Pazzaglia, F., Tressoldi, P., & Toso, C. (2009). Attitude towards school, motivation, emotions and academic achievement. In J. E. Larson (Ed.), *Educational psychology: Cognition and learning, individual differences and motivation* (pp. 259–273). Nova Science.

Neece, C., McIntyre, L. L., & Fenning, R. (2020). Examining the impact of COVID-19 in ethnically diverse families with young children with intellectual and developmental disabilities. *Journal of Intellectual Disability Research*, *64*(10), 739–749. https://doi.org/gjnht4

Rowe, D., Carter, E., Gajjar, S., Maves, E. A., & Wall, J. C. (2021). Supporting strong transitions remotely: Considerations and complexities for rural communities during COVID-19. *Rural Special Education Quarterly*, *39*(4), 220–232. https://doi.org/g9c3

Running Bear, C., Terrill, W. P. A., Frates, A., Peterson, P., & Ulrich, J. (2021). Challenges for rural Native American students with disabilities during Covid-19. *Rural Special Education Quarterly*, *40*(2), 60–69. https://doi.org/gk6wc9

Schall, C., Brooke, V., Rounds, R., & Lynch, A. (2021). The resiliency of employees with intellectual and developmental disabilities during the COVID-19 pandemic and economic shutdown: A retrospective review of employment files. *Journal of Vocational Rehabilitation*, *54*(1), 15–24. https://doi.org/gk29rk

Schuck, R. K., & Lambert, R. (2020). "Am I doing enough?" Special educators' experiences with emergency remote teaching in Spring 2020. *Education Sciences*, *10*, 1–15. https://doi.org/h3cb

Thompson, J. R., & Nygren, M. A. (2020). COVID-19 and the field of intellectual and developmental disabilities: Where have we been? Where are we? Where do we go? *Intellectual and Developmental Disabilities*, *58*(4), 257–261. https://doi.org/gg7nbr

Turk, M. A., Landes, S. D., Formica, M. K., & Goss, K. D. (2020). Intellectual and developmental disability and COVID-19 case-fatality trends: TriNetX analysis. *Disability and Health Journal*, *13*(3), Article 100942. https://doi.org/ggx2h3

U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs. (2022). *43rd annual report to congress on the implementation of the Individuals with Disabilities Education Act, 2020*.

Wanjagua, R., Hepburn, S. J., Faragher, R., John, S. T., Gayathri, K., Gitonga, M., . . . Sindano, D. (2022). Key learnings from COVID-19 to sustain quality of life for families of individuals with IDD. *Journal of Policy and Practice in Intellectual Disabilities*, *19*(1), 72–85. https://doi.org/jh35

White, L. C., Law, J. K., Daniels, A. M., Toroney, J., Vernoia, B., Xiao, S., . . . Chung, W. K. (2021). Brief report: Impact of COVID-19 on individuals with ASD and their caregivers: A perspective from the SPARK cohort. *Journal of Autism and Developmental Disorders*, *51*, 3766–3773. https://doi.org/gn9g3x