ACCESS AND ENGAGEMENT II

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Access and Engagement II: An Examination of How the COVID-19 Pandemic Continued to Impact Students with Visual Impairments, Their Families, and Professionals Nine Months Later

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Access and Engagement

AFB American Foundation® for the Blind

Expanding possibilities for people with vision loss

Access and Engagement II: An Examination of How the COVID-19 Pandemic Continued to Impact Students with Visual Impairments, Their Families, and Professionals Nine Months Later

ACKNOWLEDGMENTS

AGEMENT II

COLLABORATING ORGANIZATIONS

The following 22 organizations, companies, and universities collaborated with the *Access and Engagement II* team. Through their commitment to this project, we were able to widely share information about the study.

AFB.org/AccessEngagement

TERMINOLOGY

The following terms are used in the report:

(Note: These definitions are not comprehensive but cover the ways the terms are used in this report.)

- 504 Plan: A legal plan that outlines the accommodations or supports students in the U.S. education system receive based on their specific needs. A 504 Plan does not provide for specialized instruction or consultation in the same way an Individualized Education Program (IEP) does.

- Accessible information: Information that can be accessed via screen reader software, magnification, braille, audio description, captioning, sign languages (e.g., ASL, Signed English), visual interpreters, and support service providers. For example, maps, charts, and images may be accessible if they include a text description of visual content, large fonts, and high-contrast colors in the design.

- Assistive technology: Products, equipment, and systems that enhance learning, education, and daily living for individuals with disabilities.

- Digital learning tools: Websites, apps, learning management systems, and file storage systems used in education. Common examples include Google Docs, iReady, and Canvas.

- Expanded Core Curriculum (ECC): A framework that includes nine areas of instruction in which many students with visual impairments require direct instruction. Areas of the ECC include compensatory skills, orientation and mobility, social interaction, independent living, recreation and leisure, sensory efficiency, assistive technology, career education, and self-determination.

- Family member: Family member refers to the person completing the survey responsible for the care of the child. In the survey, the term family member/guardian was used.

- Hybrid instruction: This instructional model is a combination of in-person and online learning that blends into one cohesive learning experience. Hybrid instruction may vary in implementation depending on the location and school district.

- Individualized Education Program (IEP): An IEP is a written document developed by the educational team that describes the child's current strengths and needs, goals for the coming year, services to be provided, and accommodations needed by the child to access the curriculum. Other components include the individual(s) responsible for providing services, where the services will be delivered, and if the child will receive braille instruction.

- Individualized Family Service Plan (IFSP): An IFSP is a written document for children birth to age 3 years and developed with the family. The IFSP focuses on the child's development and family's needs; it outlines goals for the family and the individuals and supports necessary for the family to achieve the goals. IFSPs must be reviewed every 6 months.

- Online instruction: This instructional model, sometimes referred to as remote, virtual, or distance instruction, occurs when students and educators meet using a program such as Zoom, FaceTime, or Microsoft Teams.
- Orientation and mobility (O&M): One's ability to travel safely and efficiently through one's environment.
- Orientation and mobility specialist: A trained professional who teaches travel skills to individuals who are visually impaired.
- School-age students: Students in kindergarten through 12th grade as well as students in transition programs who may have graduated or received a certificate of completion but are still eligible for services under IDEA in the United States or their provincial authority in Canada.
- Screen magnification software: Software that allows low vision users to adjust the size of the screen content and select alternative background/font combinations to make viewing content easier.
- Screen reader software: Software that converts text to speech and allows the individual to use keyboard commands when using a mouse is not possible or efficient.
- Social or physical distancing: The practice of maintaining at least 6 feet between one's self and others to minimize COVID-19 spread.
- Visually impaired (VI): Description applied in this report to individuals who are blind or have low vision unless specific information is provided related to either blindness or low vision.
- Vision professional: Teachers of students with visual impairments (TVIs), orientation and mobility (O&M) specialists, and dually certified professionals are referred to as vision professionals in this report.

ABBREVIATIONS

The following abbreviations are used throughout this report:
- AFB: American Foundation for the Blind
- APH: American Printing House for the Blind
- CVI: cortical visual impairment
- ECC: expanded core curriculum
- EI: early intervention
- IDEA: Individuals with Disabilities Education Act
- IEP: Individualized Education Program
- IFSP: Individualized Family Service Plan
- O&M: orientation and mobility
- PS: preschool
- SA: school-age
- TVI: teacher of students with visual impairments
- VI: visually impaired

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Access and Engagement II: An Examination of How the COVID-19 Pandemic Continued to Impact Students with Visual Impairments, Their Families, and Professionals Nine Months Later

The *Access and Engagement II* study investigates how the education of students with visual impairments in the United States and Canada was affected nine months into the COVID-19 pandemic. In this study, a follow-up to the first study in April and May 2020, we continue to document the systemic and pandemic-related ways in which children (birth to age 21), their families, teachers of students with visual impairments (TVIs), orientation and mobility (O&M) specialists, and dually certified professionals have been affected.

The 662 participants represented 206 children with visual impairments, including those with additional disabilities and deafblindness, and the specialized professionals skilled in providing educational services to meet those students' diverse needs.

PARTICIPANT SNAPSHOT[1]

• 48 U.S. states, 6 Canadian provinces, and 1 overseas U.S. school were represented.

CHILDREN:
206 CHILDREN TOTAL

82% school-age

8% early intervention

10% preschoolers

39% of participants' children had low vision with additional disabilities

16% of participants' children had low vision

17% of participants' children were blind with additional disabilities

27% of participants' children were blind
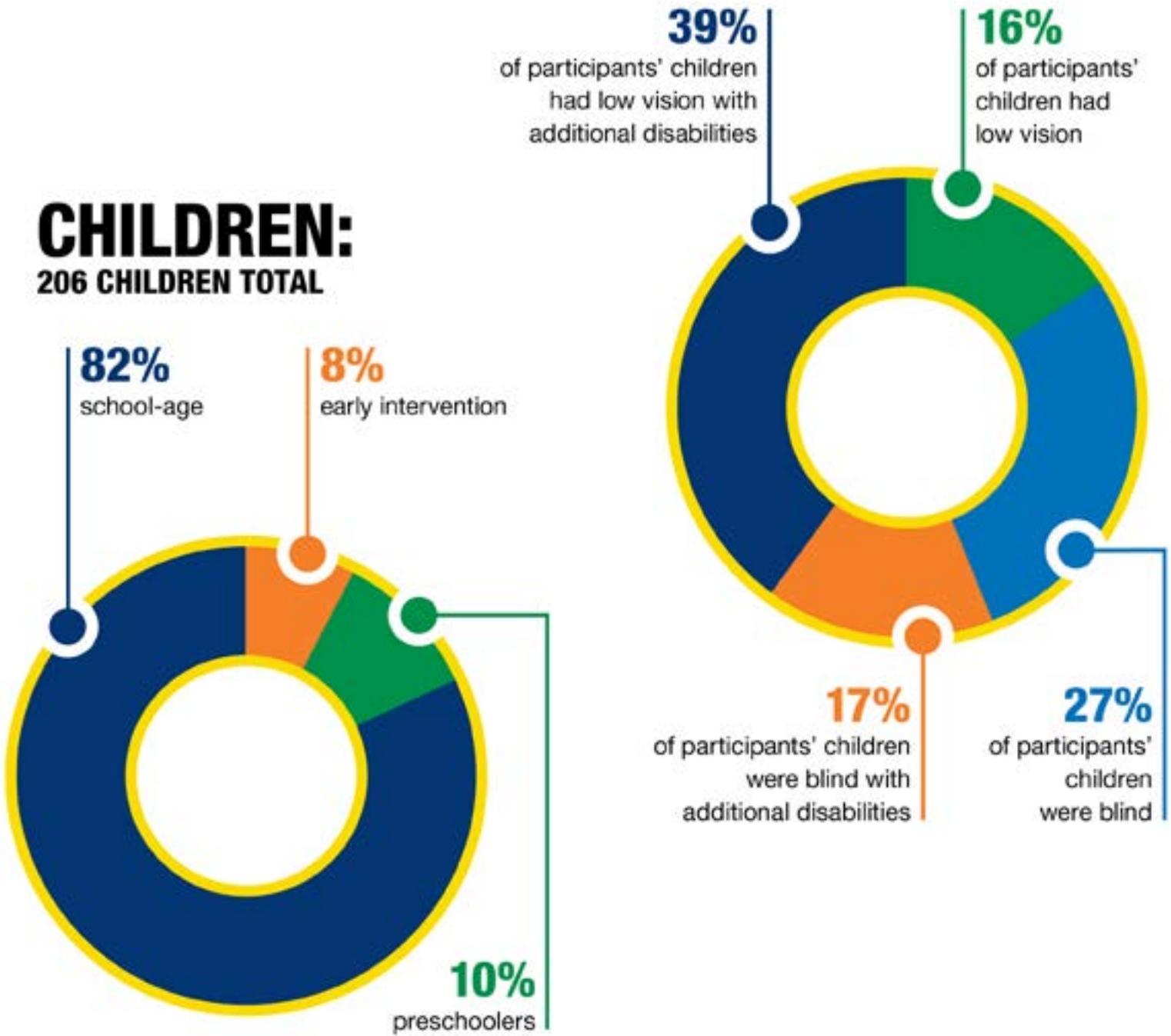
[1]Please see the full report to assist in interpreting the percentages provided in this summary as the number of participants who answered any one question varied.

KEY FINDINGS

- Regardless of where early intervention services were delivered, most family members reported feeling overwhelmed, especially as they needed to juggle multiple roles.

- Some family members of preschool-aged children found that changes from online to hybrid to in-person made it difficult for their child to learn, but others found that during the pandemic, their child's skills were increasing.

- Although it is probable some changes in children's skills were not due to the pandemic, the deep decline in the types of services (e.g., physical therapy, O&M) that school-aged children received compared with before the pandemic is telling.

- By November 2020, more children were receiving educational services than in spring 2020.

- As of November 2020, 58% of professionals were able to reach between 90% and 100% of their students' families; with 42% of professionals reaching less than 90% of students' families.

- Four out of 10 professionals reported that up to 25% of their students were on the low end of the digital divide.

- Two-thirds of the professionals reported they had worked with either an IFSP and/or IEP team to make changes to one or more students' IFSPs or IEPs due to the COVID-19 pandemic.

- Family members and professionals reported that many apps and websites were inaccessible or not fully usable for students who were blind or had low vision. Chromebooks especially presented accessibility challenges.

- During the pandemic, many TVIs reported it was challenging, if not impossible, to coordinate with the classroom teacher in order to prepare and/or get materials to students attending school virtually in time for the lesson.

475 TOTAL PROFESSIONALS

TVIs	301
Dually certified professionals	87
O&M specialists	79
Student teachers	9
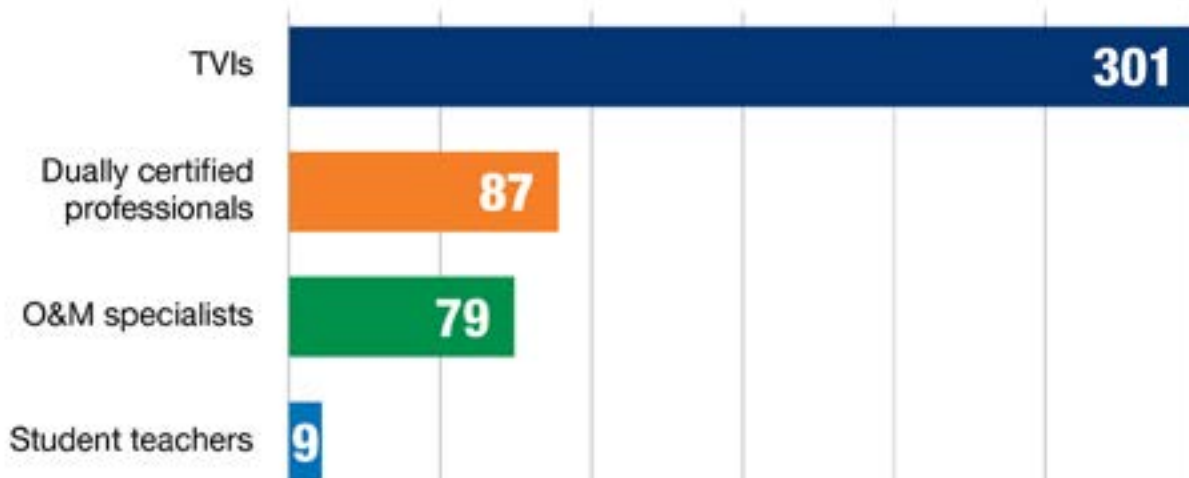
OUR RECOMMENDATIONS

The Importance of Teamwork

• Communication between students, family members, vision professionals, other educators, and administrators must be ongoing, clear, and individualized to the needs of the student and family members.

• Family members and students who do not speak English as their primary language need access to interpreters. The move to online platforms nor budget constraints must not stand in the way of providing family members and students access to interpreters.

• Vision professionals who are experts in their fields must be acknowledged and have the time and resources to meet their students' diverse needs.

• Student success requires the family's basic needs be met for there to be investment in the child's education.

Ensuring Full Participation in Education

• Administrators must be willing to work with educators to designate funding and resources, so that all students who need services are provided with such.

• Policymakers and administrators should examine the caseload sizes of vision professionals and plan for hiring new staff to adjust caseload sizes while maintaining service levels.

• Assessments must continue to occur as required by the Individuals Disabilities Education Act (IDEA) and individual student needs. Administrators and policymakers should develop strategies to ensure assessments are completed in a timely and effective manner.

• Partnering with community agencies allows school districts, specialized schools, and other educational agencies to ensure materials are available in the native language of family members or interpreters can translate so family members and educators can engage in meaningful dialogue.

Full Access to Digital Learning

- Students and families must have adequate Internet availability in order to participate in online education.

- Students must have access to the same technology at home that they have access to at school.

- Instruction and ongoing support with technology, including replacing and/or repairing technology in a timely manner, must be provided to students, families, and educators.

- The Federal Communications Commission (FCC) should implement the Emergency Broadband Benefit with a focus on device accessibility and outreach to people with disabilities and their families. The Benefit, or a similar program, should be made permanent after the public health emergency ends. Additionally, Congress and the FCC should consider a permanent expansion of the E-rate[2] program to afford schools and libraries the flexibility to serve students learning from home.

- Technology companies must use inclusive design principles from conceptualization through production of a digital learning tool.

- State or provincial governments should work with school administration and technology companies to ensure products provided to educators and students are accessible.

Providing Access to the Curriculum

- Students with visual impairments must have access to instructional materials at the same time as their peers.

- Administrators must provide adequate time for educational teams to develop and implement accommodations that ensure students full access to the curriculum.

- Administrators should institute appropriate processes and allocate sufficient funding to allow to accommodate students with appropriate supplies, including using federal COVID-19 relief funding when available.

- Vision professionals need to have access to the same technology their students use so they can develop lessons and have the knowledge to support student learning.

- Policies and procedures must be in place to ensure braille readers have hard copy braille.

[2]https://www.fcc.gov/consumers/guides/universal-service-program-schools-and-libraries-e-rate

Supporting the Mental Health and Safety of Students, Families, and Professionals

• Administrators, vision professionals, and other educational team members should seek new ways to strengthen home–school partnerships moving forward.

• Vision professionals and other educators need support from administrators to maintain a healthy work–home balance, maintain their productivity, and not burn out and leave the profession.

• Additional staff, including guidance counselors, psychologists, and social workers, must be available to students, families, and all educators both on a short-term and long-term basis, as necessary.

• Many students, family members, and vision professionals were feeling stressed, overwhelmed, or anxious due to the COVID-19 pandemic. The provision of counseling and other supports needs to occur even once in-person learning returns to pre-pandemic levels.

Supporting Student Success

• Additional funding for expenses such as COVID-19 mitigation, staffing support, and Extended School Year (ESY) services may be needed for more students than are typically served in a school year.

• Administrators must provide vision professionals with additional time to conduct assessments under COVID-19 restrictions.

• Administrators and educators must build on the successes of student lessons vision professionals have developed and the ways in which they have coached family members during the pandemic.

FINAL THOUGHTS

As we move into post-pandemic education, family members, vision professionals, other educators, administrators, and policymakers must work collaboratively to ensure that students' basic needs are met, and their skills do not regress. We do not yet know the short-term and long-term impacts of the pandemic on individual children nor do we know how to provide all children with visual impairments with an individualized and appropriate education while also ensuring students' social-emotional well-being during a disruptive event such as a pandemic. We do know that until students have fully accessible, inclusive learning opportunities with the necessary supports, their ability to learn and maximize their full potential is at risk. Together, policymakers, administrators, educators, family members, and students have the opportunity to take lessons learned during the first nine months of the COVID-19 pandemic to shape the future of education for our students with visual impairments, including those with additional disabilities and deafblindness.

INTRODUCTION

"Everybody has had to adapt to crazy things that are not very normal. People are getting tired of this [COVID-19] stuff but we have to move forward with the education of our young people with all the organizations and programs and services offered."
—*Family member of a child with low vision, and a preschool child who is blind with additional disabilities, 2.5 to 3 years old*

INTRODUCTION

As this report goes to press in May 2021, we are one year into the COVID-19 pandemic. We know the landscape of education is changing in many ways. It is too early for us to know what changes may occur in the percentage of children graduating high school in 2020–2021 compared to previous years.

Though no one knows the long-term impact of the pandemic on the education of children, families, and professionals, we can all agree that there have been short-term impacts. At the same time, there have been beacons of hope, creativity, and collaboration. These have warmed the hearts of many and brought some families and professionals closer together in their joint mission to ensure our students with visual impairments, including those with additional disabilities and deafblindness, receive an equitable, accessible, and engaging education.

As a follow-up to the first *Access and Engagement* study conducted in April and May 2020, the *Access and Engagement II* study seeks to answer the question:

In the fall of 2020, nine months into the COVID-19 pandemic, how is the education of students with visual impairments in the United States and Canada being impacted?

By fall 2020, both Americans and Canadians realized that the COVID-19 pandemic was not going to be short-lived. Data collection for *Access and Engagement II* took place from October 28, 2020 to November 30, 2020. Therefore, the survey results captured what was happening in both the American and Canadian educational systems following a summer when there was time to prepare for educational delivery during the pandemic.

According to the Centers for Disease Control and Prevention, as of March of 2021, there were 30,085,827 total confirmed cases of COVID-19 in the United States, compared to 1,145,733 in May of 2020. Of those cases, 2,532,205 were among children from birth to 17 years of age, compared to 3,615 the previous spring.[3] As of March 2021, a total of 527,726 deaths had been reported in the United States (compared to 6,091 deaths in May of 2020) of which 295 were children between 0 and 17 years of age (compared to only six deaths in children as of May of 2020).

According to the Government of Canada, in March of 2021, there were a total of 965,404 COVID-19 cases and 22,880 deaths.[4] Of those cases, 148,674 were children 19 years and younger with 295 reported deaths. By comparison, in May of 2020, at the beginning of the COVID-19 pandemic, Canada reported 90,179 total cases of COVID-19 and no deaths had been associated with the virus.[5]

Across both countries, there was variation in how educational services were being delivered in November 2021, from fully in person to fully online and everything in between. Many students, families, and professionals were experiencing COVID fatigue. In addition, many Americans and Canadians knew someone who had become ill with COVID and, in some cases, died from the virus. Though a vaccine was on the horizon, when these data were collected, no vaccines had been approved for emergency use in either country.

SURVEY DESIGN AND ANALYSIS

The survey design was similar to that used for the first *Access and Engagement* study. The survey was divided into six sections which individuals had the option to complete. Throughout the survey there were some required questions. The sections each targeted the following groups:

1. Family member of a child, birth to 3 years of age, receiving early intervention

2. Family member of a student, 3 to 7 years of age, enrolled in a preschool program

3. Family member of a school-age student in K-12 or transition

4. TVI employed for the 2020-2021 school year

5. O&M specialist employed for the 2020-2021 school year

6. Dually certified professional (TVI and O&M specialist) employed for the 2020–2021 school year

At the end of the survey, all participants completed a demographic section.

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[3]https://covid.cdc.gov/covid-data-tracker/#cases_totalcases
[4]https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html
[5]https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310078501

The survey was made accessible for users of screen readers (e.g., JAWS, NVDA, VoiceOver). Only adult family members and professionals completed the survey; no children were invited to participate in the study. Professionals provided their own demographic information; family members provided demographic information for themselves and their child(ren). Family members were invited to complete data for a second child in the same category. Only two family members of school-age children provided data for two children, so these data are not reported separately.

PARTICIPANT RECRUITMENT AND LIMITATIONS

In the spring 2020 *Access and Engagement* study, a limitation of the research was the lack of demographic diversity in the study sample, with 79% of participants being white and 87% being female. Though recognizing the lack of diversity, the authors, organizations, and companies supporting this research were unable to alter the demographic composition of the study sample in their recruitment efforts. In *Access and Engagement II*, 85% of participants were cisgender female and 81% were white, nearly identical to the prior survey.

In both studies, only individuals who had access to the Internet received information about the study, and the survey tool was only available online.

The survey opened on October 30, 2020, just a few days before the 2020 U.S. presidential election. The distraction of the election coupled with "COVID fatigue" may have contributed to a low response rate. In spring 2020 for the first *Access and Engagement* study, the sample size was 1,432; for *Access and Engagement II*, the sample size was 662. No identifying information was collected from participants in either sample, so we do not know how many, if any, of the same participants completed both surveys. Had these data been collected, it would have allowed the researchers to conduct some longitudinal analysis by individual.

DEMOGRAPHIC CHARACTERISTICS OF ADULT PARTICIPANTS

Six hundred sixty-two adults completed the *Access and Engagement II* survey, with 21 from Canada and 641 from the United States. The Canadian participants represented 6 provinces and the American participants represented 48 states and one individual overseas. There were 611 participants who provided data on the state or province in which they lived.

KEY

- 0 Participants
- 1–5 Participants
- 6–10 Participants
- 11–20 Participants
- 21–30 Participants
- 31–40 Participants
- 40+ Participants
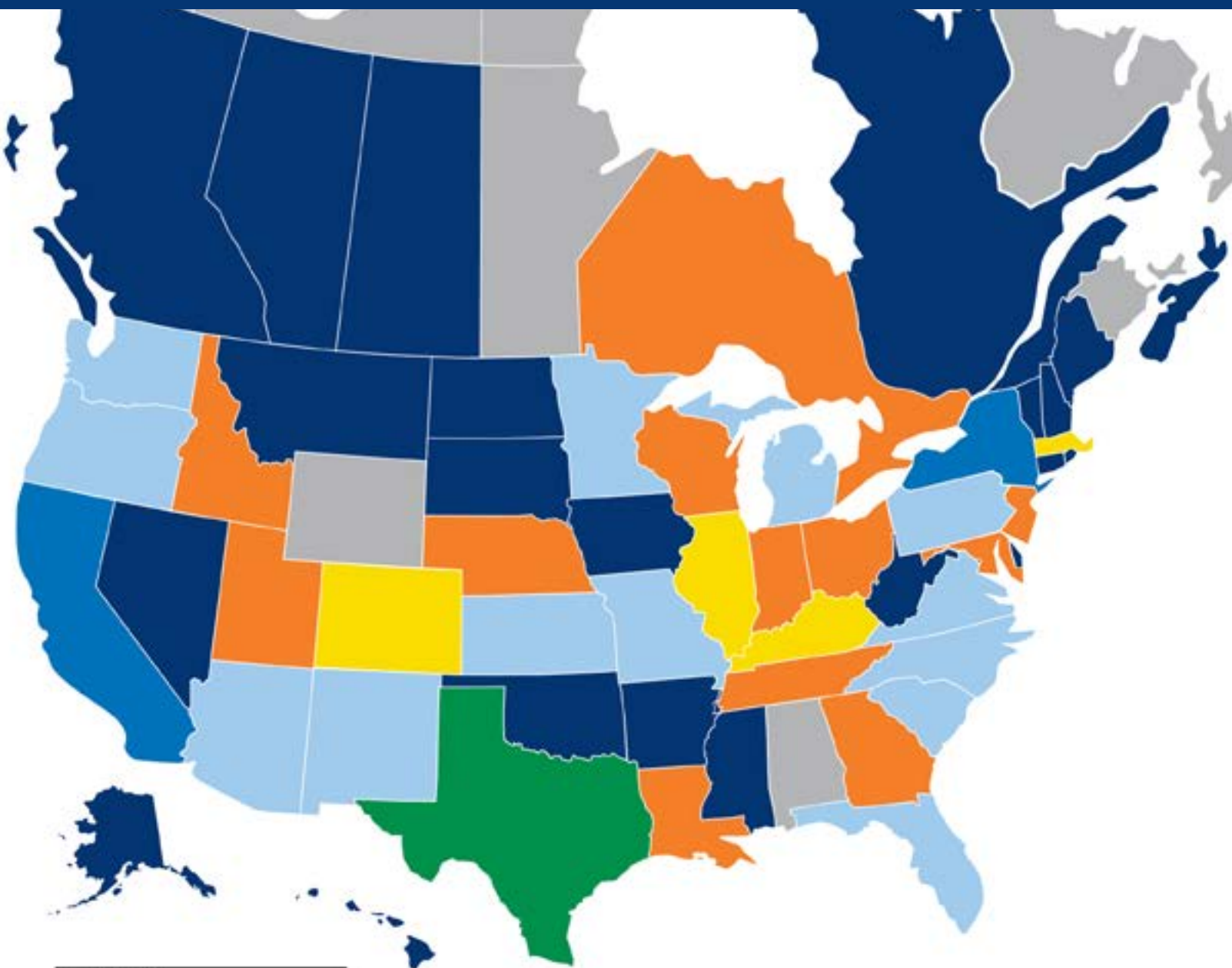
Table 1 provides participant demographic data for gender, Table 2 provides participant demographic data for age, and Table 3 provides participant demographic data for race/ethnicity (U.S. only). There were 39 U.S. participants who identified as being of Hispanic or Latinx descent. In examining the race/ethnicity data of 15 of the Canadian participants, 9 (60%) were White, 4 (26%) were East Asian, 1 (7%) was South Asian, and 1 (7%) was of Indigenous descent. Four hundred and two (40%) participants reported they had no additional disabilities or other health conditions. There were 18 participants who self-identified as blind and 40 as having low vision.

TABLE 1:

Demographic Data of Participants by Gender

Characteristic	n	Percentage
Gender of U.S. and Canadian Participants (n=631)		
Cisgender female	549	87.0
Cisgender male	48	7.6
Gender not listed	1	0.2
I prefer not to provide this information	33	5.2

TABLE 2:

Demographic Data of Participants by Age

Characteristic	n	Percentage
U.S. and Canadian Participants (n=631)		
Under 25 years	8	1.2
26–35 years	82	12.3
36–45 years	176	27.9
46–55 years	197	31.2
56–65 years	125	19.8
66+ years	28	4.4
I prefer not to provide this information	15	2.4

TABLE 3:

Demographic Data of Participants by Race/Ethnicity

Characteristic	n	Percentage
U.S. Participants (n=624)		
American Indian/Alaska Native	8	1.2
Asian	8	1.2
Black/African American	20	3.0
Native Hawaiian/Pacific Islander	1	0.2
Two or more races	11	1.7
White	522	78.6
Other	16	2.4
I prefer not to provide this information	38	5.7

The participants were asked to describe their current employment. Of the 160 family members, there were 2 (1.3%) who chose not to provide the information. There were 13 (8.1%) family members who were not working before the pandemic and continued to not work, while 18 (11.3%) family members stopped working to care for children, and 17 (10.6%) family members had been caring for children or extended family members prior to the pandemic and continued to do so. Within the family member group, there were 34 (21.3%) essential workers who worked outside the home, 21 (13.1%) non-essential workers who worked outside the home, and 45 (28.1%) family members working from home. In addition, 9 (5.6%) family members were laid off, furloughed, or lost their job. Of the 16 participants who were both family members and professionals, there were 7 who worked outside the home and 9 who worked from home.

TECHNOLOGY AVAILABILITY FOR CHILDREN LEARNING FROM HOME

Table 4 provides information about the number of children learning from home and Table 5 provides the number of access technology tools available in the home. In both tables, data are reported for participants who are family members only, those who are both family members and professionals, and those who are professionals only. With the exception of one professional, all participants had Internet service in their home, with two family members reporting that their Internet service was paid for by someone other than an individual living at home (e.g., employer, school district).

TABLE 4:

Mean and Standard Deviation of Children in the Home of Family Members Only, Family Members Who Are Professionals, and Professionals Only

	Family Member Only (n=168)	Family Member-Professional (n=16)	Professional Only (n=471)
Number of children living at home	2.13 (1.09)	2.56 (1.79)	1.13 (2.03)
Number of children participant is caring for	2.05 (1.04)	2.94 (2.72)	1.03 (2.04)
Number of children enrolled in early intervention, preschool, or school-age education	1.60 (1.11)	2.00 (1.46)	0.86 (2.01)

TABLE 5:

Number of Technology Tools Available in the Home of Family Members Only, Family Members Who Are Professionals, and Professionals Only

	Family Member Only (n=168)	Family Member-Professional (n=16)	Professional Only (n=471)
Smartphone	165	15	433
Tablet	152	13	363
Laptop	152	13	417
Desktop computer	74	6	177
Smart speaker	103	6	182

Participants were asked about the groups of people in their home who used the Internet and had devices. These data are reported in Table 6.

TABLE 6:		
Frequency, Mean, and Standard Deviation for Access to the Internet and Device Availability		

	Family Member Only	Family Member-Professional	Professional Only
Working from Home			
n	131	15	399
M	1.4	1.4	1.8
SD	1.3	0.7	1.5
Attending School from Home			
n	132	15	197
M	1.7	2.1	1.0
SD	1.5	1.6	1.8
Number of People Who Can Be Online at the Same Time			
n	165	15	410
M	3.9	3.8	3.5
SD	1.7	1.7	2.2
Number of People Who Have Their Own Device			
n	150	15	400
M	3.1	3.6	2.5
SD	1.9	1.7	1.8

> **Participants were asked to select their level of agreement with the statement: I believe the Internet access we use (at home or at another location) allows the children in my home to fully participate in online or hybrid education.** Of the 618 participants who responded, the mean was 3.73 (SD=1.2).[6] The level of agreement participants had with this statement fell between "Agree" and "Strongly agree." Readers must recognize that this survey was administered through the Internet so the high agreement with this statement suggests the sample may not be reflective of those who have no or inconsistent Internet or who lack devices to use to get online.

PARTICIPANTS' EXPERIENCES WITH COVID-19 AND EMPLOYMENT

Data were collected during the ninth month of the COVID-19 pandemic. Participants were provided a list of statements that described the types of experiences they had had with COVID-19. Of the 618 participants who responded, 17 preferred not to answer the question. Five participants reported that someone in their home had tested positive for COVID-19, and one participant reported someone who lived in their home had died from COVID-19. The six most frequently selected COVID-19 experiences were:

• No one in my home has exhibited symptoms or been tested for COVID-19. (n=362)

• One or more people in the workplace of someone in my home has tested positive for COVID-19. (n=183)

• One or more people in my home have/had COVID-19-like symptoms, have been tested, and have tested negative. (n=146)

• One or more people in my home have had other COVID-19 experiences with those close to them. (n=91)

• An extended family member or close friend not living in my home has died because of COVID-19. (n=56)

• One or more people in my home have/had symptoms that may be COVID-19, but no one has been/was tested. (n=21)

[6] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

For many individuals in the United States and Canada, their employment status had changed as a result of the pandemic. Though 359 (58%) participants reported there was no change in their employment status, for 181 others, there were changes. One hundred six (59%) of the 181 family members reported some type of change, while 211 (44%) of 481 participants who were either both family members and professionals or professionals only reported changes. Participants were provided a list of possible changes to employment with multiple responses permitted. Although 16 (2.6%) of all participants chose not to answer the question, for those who reported changes, the seven most frequently reported changes were:

- One or more people in my home have transitioned to working from home because their employer allowed/required them to work from home due to COVID-19. (n=157)

- One or more people in my home had their work hours reduced because of COVID-19. (n=103)

- One or more people in my home were laid off or furloughed because of COVID-19. (n=66)

- There have been other changes in the employment status of one or more people in my home because of COVID-19. (n=43)

- One or more people in my home have quit their job(s) or reduced their hours in order to be home to supervise/support children who are learning from home because of COVID-19. (n=33)

- One or more people in my home lost their job because the business they worked for closed because of COVID-19. (n=31)

- One or more people in my home are currently looking for a job because of COVID-19. (n=25)

THE CHILDREN

"I don't think she's receiving the full education she needs. Everything is being taught directly from the books. We only do Google Meeting for 30 minutes a day with her teacher. Everything is put in our hands to teach them."—*Native American female family member of a child who has low vision with additional disabilities, 8 to 10 years*

THE CHILDREN

Family members were asked to select one of the following four statements that best described their child's characteristics:

• My child is blind (cannot see more than light and large objects) and has no other learning and/or medical challenges.

• My child has low vision (some usable vision) and no other learning and/or medical challenges.

• My child is blind (cannot see more than light and large objects) and has other learning and/or medical challenges (e.g., a hearing impairment, motor delays).

• My child has low vision (some usable vision) and/or medical and/or other learning challenges (e.g., a hearing impairment, motor delays).

For ease of reference in this report, the terms blind, low vision, blind with additional disabilities, low vision with additional disabilities are used.

Family members provided information for 206 children. There were 16 (7.8%) children in early intervention, 22 (10.7%) preschoolers, and 168 (81.6%) school-age children. The bar graph below shows the number of children by child-descriptive characteristic in each group. The percentage of children with additional disabilities was 57%. This percentage was 1% point different from that reported by Rosenblum et al. (2020) in the first *Access and Engagement* report.

CHILDREN'S DESCRIPTIVE CHARACTERISTICS

Group	Blind	Low Vision	BL + Additional Disabilities	LV + Additional Disabilities
Early Intervention Total (n=16)	12%	19%	19%	50%
Preschool Total (n=22)	5%	36%	18%	41%
School-Age Total (n=168)	19%	26%	17%	38%

Legend: Blind · Low Vision · BL + Additional Disabilities · LV + Additional Disabilities
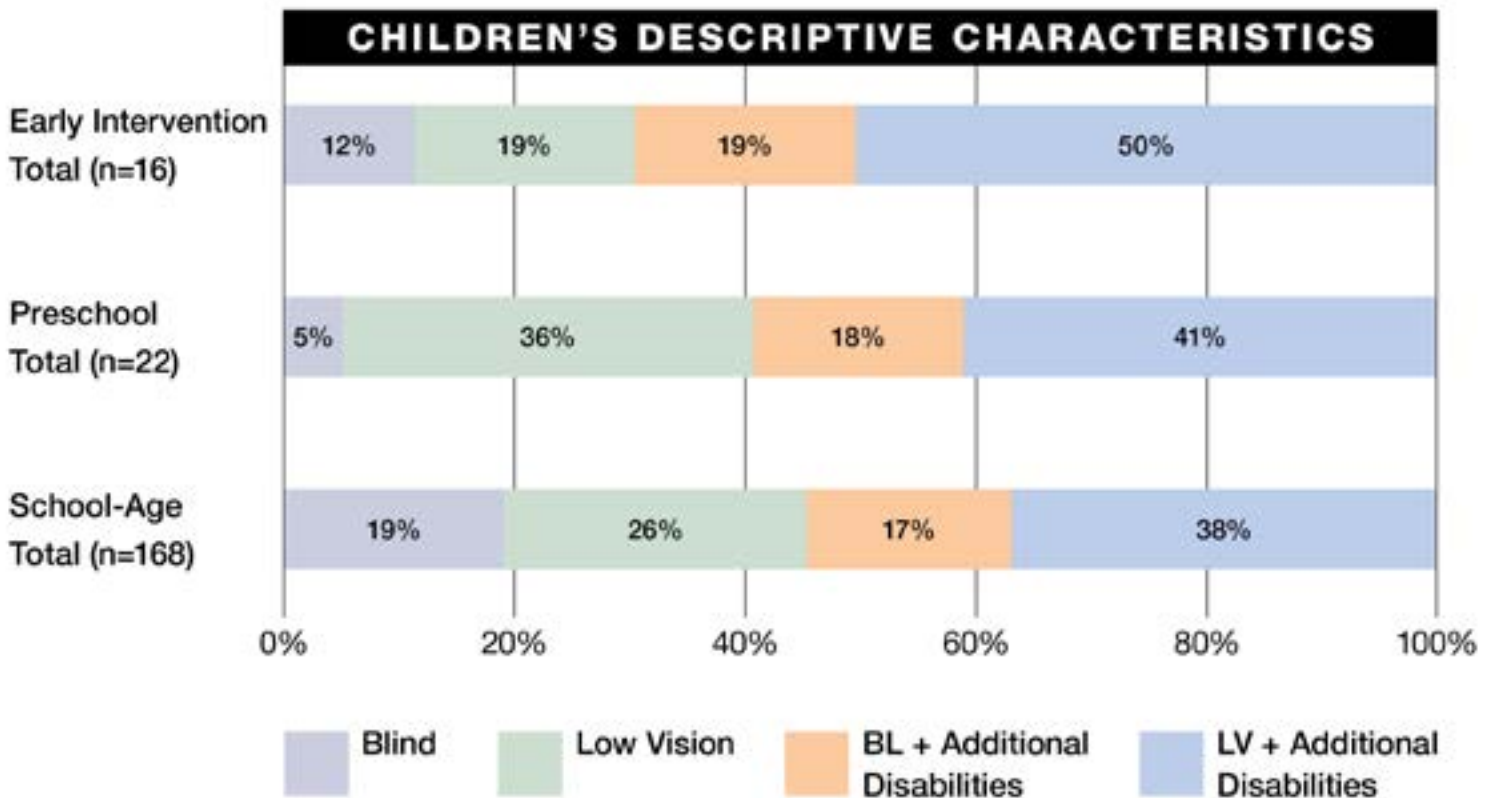
CHILDREN RECEIVING EARLY INTERVENTION SERVICES

"It has been wonderful to continue to receive services virtually, as it's not safe to do so in person. It has been a lot to take on facilitating the virtual sessions. I feel like I have to plan and prepare relevant activities, keep my child engaged and not distracted by her sibling, and keep the camera on my child as she moves a lot. I feel like I am doing a lot of work to support my daughter's success and much of the feedback I receive from staff at the end of sessions is about what to do better next time. While I definitely want to continue to support my child to grow, sometimes it feels like I'm never doing enough."
—*White female family member of a child with low vision with additional disabilities, 1.5 to 2 years old*

Family members of 16 children receiving early intervention completed the survey. One child (6%) was under 1 year of age, 4 (26%) children were between 1 and 2 years of age, and 11 (69%) children were over 2 years. Two (12%) of the children were blind, 3 (19%) had low vision, 3 (19%) were blind with additional disabilities, and 8 (50%) had low vision with additional disabilities.

Of the 16 children, 9 (56%) were reported by family members to have an IFSP that had been reviewed or updated within the last 6 months, 2 (13%) had an IFSP but the team had not met to review it in the past 6 months, 2 (13%) did not have an IFSP, and 3 (19%) family members were not sure if their child had a current IFSP.

CURRENT EARLY INTERVENTION SERVICES

"[My] major concerns are that virtual learning has not been effective or engaging for my daughter. She doesn't connect with what is happening on the screen. Overall, it feels as though we have had a lack of services."—*White female family member of a child with low vision with additional disabilities, 2.5 to 3 years old*

Fourteen (88%) of the 16 children and family members had received early intervention services in the spring prior to the pandemic. Thirteen family members reported their child and family were currently receiving early intervention services. The family members reported that 5 (38%) children received services once a week, 3 (23%) children received services twice or more a week, 2 (15%) children received services once every 2 weeks, 1 (8%) child received services once a month, 1 (8%) child received services less than once a month, and the service delivery for 1 (8%) child did not fall into any of the provided categories.

The family members were asked about how early intervention services were currently delivered, with 13 family members selecting one or more ways their child's early intervention team supported them including:

• Conducting meetings online using web conferencing tools (e.g., Zoom) (n=10)

• Sending informational resources (n=6)

• Recommending websites, videos, or other online resources specific to children with visual impairments (n=5)

• Conducting meetings via telephone (n=4)

• Sending ideas and activities via email (n=4)

• Mailing or delivering toys or materials to the home (n=4)

• Meeting in person in the same physical space (n=4)

When asked about their participation in early intervention meetings since the start of the 2020-2021 school year, 13 family members selected their family's level of participation. Eleven (85%) family members reported their family attended almost all sessions, and 2 (15%) family members reported they made an effort to attend most sessions.

Seven family members reported meetings with early intervention staff in the same physical space, with 2 (15%) family members reporting meetings inside the home, 1 (7%) reporting meetings outside of the home such as on the porch or in the backyard, 1 (7%) reporting meetings in a building such as a school, and 3 (23%) reporting meetings online. Four family members reported that both they and early intervention providers used COVID-19 safety precautions when meeting in person.

Regardless of where early intervention services were delivered, most family members reported feeling overwhelmed, especially as they needed to juggle multiple roles. Some family members were concerned their child would regress as the pandemic continues longer than anyone expected.

"She receives O&M services. She gets OT and TVI only virtually. We meet bi-weekly rather than the weekly we had before COVID. My older daughter used to be at school during my EI kiddo's sessions, but now she's home so I have to juggle a FaceTime call, my toddler, and my high-needs older child all at once. I'm tired all the time from dealing with pandemic-related childcare insecurity, work-from-home challenges, lack of safe transportation, and health concerns. So even when my team has a useful tip for me, I can barely process it because I'm in survival mode. Plus, my daughter and I both learn so much better in person, and that hasn't been available for months and months."—*White female family member of a child with low vision with additional disabilities, 2.5 to 3 years old, and a child with low vision with additional disabilities, 4 years old*

Family members were provided six statements and asked to rate their level of agreement with each statement. The number of participants rating the statement, the mean, and the standard deviation are reported in Table 7.

TABLE 7:
Early Intervention Family Members' Ratings of Statements About Services

Statements	n	M[7]	SD
I believe the benefits of early intervention services in person outweigh the risks of potential exposure to COVID-19 for my child.	4	3.50	0.58
I believe the benefits of early intervention services in person outweigh the risks of potential exposure to COVID-19 for me or others who have regular contact with my child.	4	3.50	0.50
I am an effective member in my child's early intervention team because I am completing activities with my child and using strategies the educational team members share with me.	16	3.50	1.10
I am satisfied with the level of communication I currently have with my child's early intervention team.	16	3.00	1.10
I am satisfied with the level of support I currently have from my child's early intervention team.	16	2.94	1.10
I believe my child is making developmental progress in the same way they would if there had not been a COVID-19 pandemic.	16	2.75	1.10

[7] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

The four family members who reported their family was receiving in-person early intervention services had a high level of agreement with the benefits of these services outweighing the COVID-19 risks. Though closer to "Agree" than "Disagree," there were some family members who had concerns about their child's developmental progress and the level of support they were being provided by members of the early intervention team. Agreement was high among family members who reported they felt a part of the early intervention team and had effective communication with early intervention team members.

CHILDREN IN PRESCHOOL PROGRAMS

"We opted for virtual due to health concerns...The special education teacher is brand new and has had trouble adapting the course delivery...for our daughter. Our TVI has been amazing but the school/special ed teachers are lagging way behind. They think reading to her over Zoom [about] an abstract concept about a farm voting for a duck for social studies will educate about 'General elections'...having her repeat a phrase back means nothing. We have really struggled with this and the school despite multiple meetings. And we are so frustrated!"—*White female family member of a child with low vision, 5 years old*

Family members of 22 children enrolled in preschool programs completed the survey. There were 7 (32%) 3-year-old children, 9 (41%) 4-year-old children, and 6 (27%) 5-year-old children. One (5%) of the children was blind, 8 (36%) had low vision, 4 (18%) were blind with additional disabilities, and 9 (41%) had low vision with additional disabilities.

Of the 22 children, 20 (91%) children were reported by family members to have an IEP that had been reviewed or updated within the last 12 months, and 2 (9%) were reported to have an IEP but the team had not met to review the IEP in the past 12 months.

CURRENT PRESCHOOL EDUCATION

Nine (41%) children and their families had received early intervention services in the spring prior to the COVID-19 pandemic, 12 (54%) children had received preschool services, and 1 (5%) child had not received services. Throughout the United States and Canada, the start of the school year was laden with uncertainty as to when school would start and whether instruction would be in-person, online, or a hybrid delivery model. Of the 22 family members, 16 family members were given a choice of where their child would attend school (e.g., online). Nine family members reported their school administration currently would allow them to change their choice, for example, from in-person to a hybrid model.

There were 21 children who were participating in preschool education at the time the family members completed the survey. The one family member whose child was not participating in preschool education reported the school district was not offering an accessible option. The family member indicated in a follow-up question that the child was homeschooled.

The 22 children enrolled in preschool were receiving their education in multiple ways:

• In a preschool class for children with varying disabilities held at a public school (n=7)

• In a preschool class with typically developing peers with TVI and/or O&M specialist instruction (n=4)

• In a preschool class at a school for the blind (n=5)

• In a preschool class at a daycare, faith-based, or other private school (n=2)

• Homeschool (n=2)

• In a different type of school setting (n=2)

Some family members found that changes from an online to a hybrid to an in-person model made it difficult for their child to learn. Though some family members were concerned their child would regress in their skills, a few family members found that during the pandemic, their child's skills were increasing. For example, there were children who were gaining skills with technology and some who were having an opportunity to build their independence in different areas of the ECC, including independent living skills.

"We have been able to dedicate more time to independent learning skills with the slower pace. She has become potty trained, and she can help get water and ice from the fridge. Still working on putting clothes and shoes and braces on."—*White female family member of a child who is blind, 3 years old*

CHILDREN WHO ARE SCHOOL AGE

"[My] child is attending live virtual classes with peers and teachers. I am serving as the para[professional] when needed. The TVI collaborates with the general ed teachers and reviews materials. She adapts assignments so that they are in an accessible format such as in MS Word. The TVI comes for 2 hours every other day to work [with my child] on independent living skills. We also do in-person community O&M 1 hour a week and receive virtual technology training 4 hours a week from a TVI who specializes in technology. This setup is working well as I am more involved and better able to properly support my child than the in-school para[professional] was. Meaning I know what is accessible and what is not, and I know how to properly support my child, so she is becoming more independent with her academics, time management, organization and such. She has grown much more independent while receiving instruction this way with proper support. It has helped that teachers give all students an outline for [the] weekend before everything that will be worked on for the upcoming week. This has allowed my child to review and be prepared for class and to complete some assignments the night before which enables her to focus more during class as she is not having to struggle as much through navigating to find her place using [a] screen reader while also trying to listen to instructions or lectures from the teacher. This has reduced stress and enabled better engagement during class for her."—*White female family member of a child who is blind with additional disabilities, 16 to 18 years old*

One hundred sixty-six family members of school-age children completed the survey. Two of these family members also completed a survey for a second child. Data in this section and throughout the report are provided for the 168 school-age children. There were 27 (16%) 5- to 7-year-old children, 38 (23%) 8- to 10-year-old children, 22 (13%) 11- to 13-year-old children, 44 (26%) 13- to 15-year-old children, 27 (16%) 16- to 18-year-old children, and 10 (6%) 19- to 22-year-old children. Thirty-three (19%) of the children were blind, 43 (26%) had low vision, 28 (17%) were blind with additional disabilities, and 64 (38%) had low vision with additional disabilities.

There were 10 (6%) children enrolled in preschool services in the spring of 2020 prior to the pandemic, 146 (87%) children receiving school-age services, and 12 (7%) children not receiving services.

THE IMPACT OF EDUCATIONAL SERVICE DELIVERY CHANGES

"This whole experience with learning online has been a disaster. The information we were given to access classes WAS NOT tested first. [They] had a sighted person using VOICE OVER [provide directions] therefore there were a lot of time that was wasted having to rethink how to access her classes and work. I am sighted and I do not know how to access technology with assistive technology, but it was VERY OBVIOUS that the staff did not take this ESSENTIAL tool in mind. These KIDS ARE BLIND!"—*White female family member of a child who is blind with additional disabilities, 16 to 18 years old*

As it was for families of younger children, the start of the school year was full of uncertainty. When asked if they were given a choice of where their child would attend school (e.g., online), 119 (71%) of 168 family members reported they were given a choice. Seventy-six (64%) family members reported their school administration currently will allow them to change their choice, for example, from in person to hybrid. It was clear from family members' comments that there was a lot of frustration about options available to their child and the impact of the delivery model on their child's access to education.

"We would like to work with a TVI that would adapt our son's lessons. I think it would be helpful to the special ed teacher and the whole team. They are struggling to put a program together for our child. Our child is frustrated because things aren't adapted."—*Female family member of a child who has low vision with additional disabilities, 16 to 18 years old*

Of the 168 children, 154 (92%) were reported by family members to have an IEP that had been reviewed or updated within the last 12 months. Four (2%) children had an IEP that had not been updated, 6 (4%) did not have an IEP, and 3 (2%) had a 504 Plan. One family was unsure if their child had an IEP or 504 Plan.

There were 160 (95%) children who were currently participating in education through a school district, specialized school, or other educational agency. Eight (5%) children were either being homeschooled by the family previously or were now being homeschooled because the family member reported there was not a viable school option being offered by the district.

One hundred fifty-nine family members reported that 48 (30%) children were enrolled in general education classes receiving TVI and/or O&M services, 35 (22%) were in a combination of general and special education classes with TVI and/or O&M services, 24 (15%) were in a public school special education classroom with TVI and/or O&M services, 31 (19%) were at a specialized school, 6 (4%) were attending a center-based program for children with varying disabilities with TVI and/or O&M services, 10 (6%) were at a charter or private school with TVI and/or O&M services, and 5 (3%) were homeschooled possibly having TVI and/or O&M services.

The COVID-19 pandemic caused educational teams to have to make adjustments in the service time and goals for students in addition to the ways in which services are delivered. In some instances, opting for in-person instruction was viewed by family members to outweigh the risks from the virus.

"My son's school is 100% virtual, but we are meeting in person with the TVI for braille instruction and the O&M [specialist], since we have found these services difficult to benefit from online."—*Female family member of a child who has low vision with additional disabilities, 5 to 7 years old*

In spite of the changes in their IEPs in the educational and related services they receive throughout their schooling, for many students, there is continuity both within a school year and from year to year. Table 8 reports the number of students receiving services at three points in time. Though it is probable some changes were not due to the pandemic, the deep decline in services from before the pandemic to during the pandemic is telling. On the positive side, by November 2020, many more students were receiving services than during the start of the pandemic. For example, there was a 52% drop in the number of children receiving physical therapy initially; nine months into the pandemic, the same number of children were receiving physical therapy as there were before the start of the pandemic.

TABLE 8:		
Frequency of School-Age Children Receiving Educational Services from Educational Professionals at Three Points in Time		
	Before the Pandemic (Before March 2020)	At the Start of the Pandemic (March 2020)	Currently (November 2020)
TVI	125	92	136
O&M specialist	112	55	107
General education teacher	125	101	117
Special education teacher	93	75	89
Paraprofessional	93	41	84
Physical therapist	50	26	50
Occupational therapist	70	37	62
Speech therapist	65	37	65
Adapted physical education teacher	36	9	9
Nurse	31	8	19
Transition specialist	25	14	20
Behavior interventionist	20	7	17
Teacher of the deaf/Hard of hearing	11	8	9

THE VISION PROFESSIONALS

"As a professional, I feel like I am a first-year teacher. All new methods and expectations. A lot of documentation, more than instruction. Lots of lesson planning, overplanning, individualizing materials more often. I miss the social interaction and support of colleagues."—*White female TVI*

THE VISION PROFESSIONALS

Four hundred eighty-one TVIs, O&M specialists, and dually certified professionals completed the survey, with 470 (98%) having worked in the 2019-2020 school year. During the 2019-2020 school year, 271 (58%) worked as TVIs, 65 (14%) as O&M specialists, 85 (18%) as dually certified professionals, 10 (2%) as general or special education teachers, 2 (>1%) as paraprofessionals, 9 (2%) as student teachers, and 28 (6%) in other roles.

During the current school year, of the 481 vision professionals who completed the survey, 301 (63%) were working as TVIs, 79 (16%) as O&M specialists, 87 (18%) as dually certified professionals, and 9 (2%) as student teachers. Six (1%) individuals were not currently working in any of these roles.

When asked about their licensure or certifications, 372 vision professionals indicated they were certified by their state or provincial departments of education, 23 were working as TVIs on emergency certification, 140 were certified as O&M specialists by the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP), and 1 individual held the National Orientation and Mobility Certification (NOMC). Twenty-five professionals reported they worked as O&M specialists but were not certified by ACVREP or NOMC. There were 5 TVI student teachers and 4 O&M specialist interns.

Of the 470 vision professionals, 395 worked full time through one employer, 13 (3%) worked full time through multiple employers, 51 (11%) worked part time, and 10 (2%) had other work schedules. The professionals were asked who their employers were with multiple responses allowed. Not surprisingly, 270 professionals worked for public school district(s), 62 for educational service districts or cooperatives, 43 on campus for specialized schools, 35 for outreach departments of specialized schools, 48 for state or provincial agencies, 30 were private contractors, and 22 worked for non-profit organizations. Other responses provided by participants included early childhood centers, rehabilitation agencies, and post-secondary transition programs.

Four hundred sixty-six vision professionals were currently serving students with visual impairments, some providing services in multiple ways. There were 282 professionals working as itinerant teachers and seeing students in multiple buildings in one district, 152 itinerant teachers seeing students in multiple districts, 98 providing home visits for early intervention, 72 serving students in center-based early childhood programs, 51 working at specialized schools, 44 working in resource rooms, 31 serving students at charter or private schools, and a few participants providing services in other settings including state/provisional offices, rehabilitation programs, and transition programs.

CASELOAD COMPOSITION

Although the researchers recognized that students with visual impairments are a heterogenous group, for the purposes of collecting and reporting the data, the professionals were asked to think about their students in three broad categories.

• **Academic blind students.** These are students who are primarily included in the general education classroom, whose primary literacy medium is braille and are able to read on or close to grade level.

• **Academic low vision students.** These are students who are primarily included in the general education classroom whose primary literacy medium is print and are able to read on or close to grade level.

• **Students with additional disabilities.** These are students who may spend part, if not most, of their day, in special education classrooms. They typically are two or more grade levels below nondisabled peers. Their educational programs are very individualized.

Using the provided definitions, professionals were also asked to think about the way in which they delivered services to each of their students.

• **Direct service students** refer to students who professionals meet with regularly to provide instruction in the ECC. TVIs likely adapt materials for these students as well as ensure they have what they need in their classrooms to succeed. O&M specialists provide service to address specific travel-related goals.

• **Consultative students** refer to students who professionals monitor or check in with periodically. Professionals may consult with the student and/or other members of the educational team.

Professionals were asked the total number of students on their caseloads and the total number of students they were currently not serving, that is, students who were not attending school or students they were unable to contact. There were 9 TVIs and 2 dually certified professionals who reported they were serving 50 or more students. For professionals serving 1-49 students, 282 TVIs reported having a mean of 14.64 (SD=8.42) students on their caseload with a mean of 3.27 (SD=4.95) students they were not serving. Seventy-five O&M specialists reported the mean of students on their caseload was 15.49 (SD=9.50), and they were not currently serving a mean of 2.22 (SD=4.81) students. The 86 dually certified professionals reported a mean of 19.80 (SD=11.34) students on their caseload, and they were not currently serving a mean of 1.48 (SD=2.28) students.

Table 9 reports mean and standard deviation for the number of students on the caseloads of itinerant professionals for those professionals serving 1-49 students. As some professionals reported, they delivered services in more than one mode (e.g., itinerant and resource room); all professionals who selected "itinerant" as a setting in which they delivered services are included in Table 9.

TABLE 9:
Mean and Standard Deviation of Students Currently Receiving Direct and Consultative Services from Itinerant Professionals

	TVIs (n=291)		O&M Specialists (n=77)		Dually Certified Professionals (n=84)	
	M	SD	M	SD	M	SD
Direct Service	11.28	9.23	13.95	8.80	15.33	16.82
		n=203		n=50		n=75
Consultative	6.14	8.53	2.99	3.45	6.56	6.42

▌ REACHING FAMILIES AND THE DIGITAL DIVIDE

The researchers wanted to understand from the professionals how many of the families of their students they were and were not able to reach. Of the 466 professionals, 263 (58%) reported they were able to reach between 91% and 100% of their students' families. There were 122 (25%) professionals who were able to reach between 76% and 90% of their students' families. Eighty-one (17%) of the professionals were only able to reach between 25% to 49% of their students' families. Professionals provided reasons they were not able to reach family members, including not having a current phone number or email address, unstable home environments, families not having Internet access, language barriers, and family members who are unable to dedicate time to their child's education. Some family members recognized that their child would not have the ability to attend online classes due to their multiple disabilities. Therefore, these families opted to not participate in online education.

> "[The] biggest challenge is getting parents on board. Many of the students I work with do not work independently online, so parents need to be present or able to facilitate. I know this is not always an option, whether it be due to work or family commitments, mental health, or it's not a priority for them, etc. Some parents just have not replied to the emails, texts, phone calls. So, I try to limit the amount to give them space."—*Female family member of a child with low vision and additional disabilities, 11 to 12 years old, and a TVI*

Educators and policymakers cannot assume that all children and families have access and tools to engage in remote learning. Those children and families who do not have access to the Internet, devices, or have low Internet bandwidth are said to be on the low end of the digital divide. Professionals were asked to indicate the percentage of the students they serve who did not have Internet availability, device availability, and/or enough bandwidth. Though 204 (44%) of 465 vision professionals reported their students had Internet and device availability in addition to enough Internet bandwidth, 184 (40%) professionals reported that between 1% and 25% of their students were on the low end of the digital divide. Some students were on the low end of the digital divide because the technology tools they were given by the district were not accessible to them. This was especially true with Chromebooks which have small screens and are often locked down so that changes cannot be made that

would allow students to have better visual access or screen reader software such as JAWS to be installed. Other students had not been given any technology that would allow them to access online education, had not received training for them or their family members in how to use technology they received, or required assistance with online learning with no one in the home available to provide assistance.

"All of my students did not have the technology that they needed last spring, but they did get it this fall. They do not all have good Internet access, but they have enough to get by. Poor Internet interrupts video lessons. The families that did not have their own devices have had a large learning curve on how to use the technology. The digital divide combined with non-English speakers have put my students at a great disadvantage."—White female TVI

THE IMPACT OF SCHOOL POLICIES ON THE EDUCATION OF STUDENTS

"Frequent changes in policy and caseload shifts have made it difficult to get a consistent schedule. I have a remote teaching accommodation currently so this doesn't apply to me but my colleagues who are seeing kids in person can only go to one building period (which makes sense from a safety standpoint), but they had to choose which kid on their caseload to see in person. This is very unfair to them and to their students. It has also made it difficult for kids to get their O&M services in a way that would be most beneficial for them."
—White female TVI

Vision professionals had varying experiences with policies of their school/agency administration and these variations impacted them and their students and their students' families. Some administrators were clear in their communication, were prepared to move to remote education, and provided appropriate technology for vision professionals and students to access online education. They had clear policies for in-person interactions and provided adequate PPE.

Other administrators were reported to not be supportive of the education of students with visual impairments. For example, in some districts students with visual impairments were not permitted to attend in person even when in-person education was more appropriate for the students' learning needs than online instruction. For some professionals, there were barriers to obtaining the technology students needed to have access to in order to participate in online education. And even when the students had the technology, in some instances, policies prohibited modifying the setup to allow the students to use accommodations (e.g., white print on black background) or load assistive technology software (e.g., JAWS) on to district-issued technology.

Not surprisingly, there were vision professionals who reported that both they and family members experienced anxiety and stress due to lack of guidance or direction from the district, especially in regard to educating students with visual impairments who had significant additional disabilities or deafblindness. Orientation and mobility specialists especially found some district policies made it challenging for them to do their jobs effectively. The practice of orientation and mobility is a hands-on practice that involves travel in many ways including in the school, neighborhood, or via public transit. Restrictions on travel challenged O&M specialists to think creatively on how to meet student IFSP and IEP goals. In many instances this was not fully possible.

"Virtual instruction just does not cut it for working on all of the O&M skills that need to be repetitive and hands-on in person to ensure a student's safety."—*White female TVI*

WAYS IN WHICH VISION PROFESSIONALS WERE DELIVERING SERVICES IN NOVEMBER 2020

For just over half of the 466 vision professionals (n=244, 52%), there was a delay to the start of the school year. When the school year started, 292 professionals found their school districts, agencies, or specialized schools delivering instruction using multiple delivery models (e.g., online, hybrid), and they were teaching in these different delivery models. In November 2020, 137 professionals were providing instruction using multiple delivery models.

Table 10 reports data from 292 vision professionals who indicated different delivery models and plans for the school district(s), specialized school, or agency at both the start of the school year and in November 2020. Participants could select as many options as applied to their situation. What is apparent from the data in Table 10 is that service delivery models and policies continued to be in flux several months into the school year. Since the start of the school year, there has been an increase in the number of professionals who reported that some of their students were receiving in-person instruction. The number of professionals who reported at the start of the school year that the plan was to move students from online to in-person instruction dropped considerably by the time the professionals completed the survey, an indicator that as positive COVID case numbers and deaths rose, districts, specialized schools, and agencies struggled to come up with safe ways to return to in-person learning.

TABLE 10:

Responses from Professionals Describing Educational Delivery Models at the Start of the School Year and in November 2020

Description of Service Delivery	Start of School Year (n=292)	At Time of Survey (n=292)
In-person in-buildings using COVID-19 safety precautions	190	249
Hybrid with some students always online and some students in the classroom	113	172
Hybrid where students spend part of their time in person and part online	130	142
Online instruction with plans for special education, high-needs, and/or at-risk students to have the option to come into buildings for in-person instruction	142	139
Online instruction with plans to remain online until at least January	106	132
Hybrid with the option to go back to all online instruction	92	115
Hybrid with the option to move to in-person instruction	88	104
Online instruction with plans to move students to in-person instruction	198	88
Online instruction with plans to remain online through the 2020–2021 school year	26	41
Students are in school buildings but TVIs and/or O&M specialists serving multiple schools are not allowed to provide in-person instruction	27	24

One hundred seventeen (29%) of 407 vision professionals reported that administrators limited the number of school buildings they could enter, while 36 (9%) professionals were unsure if there were any restrictions.

CHANGES TO IEPS AND IFSPS AS A RESULT OF THE COVID-19 PANDEMIC

"Several of my goals, especially [in] braille learning (reading and writing), have changed. They have not been removed but altered so that it is a better fit with their hybrid schedules. Other goals like listening skills and eye condition project presentation goals have also had to be altered as they were not conducive to Zoom sessions. Finally, a typing goal had to be changed completely as it wasn't possible to teach this skill via Zoom."—*Multiracial female TVI*

Two-thirds (n=312, 67%) of 466 professionals reported they had worked with either an IFSP and/or IEP team to make changes to the plan due to COVID-19. Though 116 (25%) of the professionals reported no changes were made to any student plans, 38 (8%) reported they had students who they believed needed to have their IFSPs or IEPs changed due to COVID-19. Table 11 presents the changes to IFSPs or IEPs that TVIs and O&M specialists reported as having occurred. Dually certified professionals had the opportunity to answer as both a TVI and O&M specialist.

TABLE 11:

Responses from Professionals Describing Educational Delivery Models at the Start of the School Year and in November 2020

Change	TVI	O&M Specialist
Changed from direct to consultation services	64	46
Changed from consultation to direct services	22	8
Changed amount of direct service time	127	51
Changed amount of consultation service time	53	14
Changed IFSP or IEP goals typically addressed by the TVI or O&M specialist	92	50
Eliminated IFSP or IEP goals typically addressed by the TVI or O&M specialist	28	19
Removed educational team members	16	0
Added goals to address student's need to engage in online learning	71	23
Worked with the team to develop an addendum that only applies when the student is receiving hybrid or online instruction	132	45

In thinking about how the COVID-19 pandemic was impacting their services to students, the vision professionals were provided options to indicate changes they had personally made to student IFSPs and IEPs so that they could continue their work. There were 131 vision professionals who reported they had made no changes to IFSPs or IEPs that reflected changes in the amount of service time. One hundred eighty-five vision professionals reported making changes, and these changes included:

• Decreasing the amount of direct service time (n=133)

• Increasing the amount of time the professional consults with other team members (n=72)

• Increasing the amount of direct service (n=58)

• Decreasing the amount of consultation time (n=49)

• Increasing the amount of consultation time (n=49)

• Decreasing the amount of time the professional consults with other team members (n=22)

For service delivery changes, there were 220 vision professionals who had made no changes to IFSPs or IEPs. Eighty-eight vision professionals reported making changes to IFSPs or IEPs, and these changes included:

• Changing services from direct to consultation (n=72)

• Changing services from consultation to direct (n=28)

• Changing the student from an IEP to a 504 Plan (n=6)

• Changing the student from a 504 Plan to an IEP (n=4)

In the area of goals and accommodations, there were 68 vision professionals who had made no changes to IFSPs or IEPs. Two hundred fifty-one vision professionals reported making changes, and these changes included:

• Changing where and when the professional provided services (n=165)

• Changing accommodations the student receives because of the educational model (e.g., online, hybrid) the student was participating in (n=142)

• Adding goals because of the way the student was receiving instruction/services (e.g., online, hybrid) (n=94)

• Removing goals because of the way the student was receiving instruction/services (e.g., online, hybrid) (n=85)

• Changing goals and/or accommodations due to restrictions to activities the student participated in with typical peers (e.g., PE class) (n=68)

Vision professionals were asked about other changes made to students' IFSPs and IEPs. Though 181 vision professionals indicated no changes had been made, 109 vision professionals reported one or more changes had been made including:

- Changes to transportation for the student (e.g., private car, rather than school bus) (n=62)

- Addition of educational team members to address student needs because of the way the student was receiving instruction/services (e.g., online, hybrid) (n=41)

- Removal of educational team members because of the way the student was receiving instruction/services (e.g., online, hybrid) (n=38)

ACCESS TO MATERIALS

"I am not handling this lack of materials with much grace or any real sense of forgiveness as I feel these students, really most remote students, are being left out of meaningful educational experiences these days."
—*White female O&M specialist*

Before the pandemic, TVIs and other professionals (e.g., braille transcribers, paraprofessionals) spent considerable time coordinating the provision of materials so that students with visual impairments had full access to the curriculum alongside classmates. To do this successfully required clear communication and the development of systems to share information and materials. During the pandemic, many TVIs reported it was challenging, if not impossible, to coordinate with the class-room teacher in order to know what content would be covered in upcoming lessons, to get necessary materials prepared for the student, to get access to manipulatives and tools needed by the student, and to get everything to the student attending school online in time for the lesson.

In addition, vision professionals needed materials such as eye charts to conduct assessments. For some students, they needed access to materials to engage the child in learning, such as individualized calendar systems, choice boards, or adapted switches.

Students also need to have access to materials so they can access and complete their schoolwork. It is not reasonable to expect a family to provide all the necessary materials for their child. In the same vein, not all families have a place to store materials, and many family members also do not know how to use materials that their child may not be able to use independently.

Table 12 reports data from the vision professionals showing the percentage of vision professionals who reported having the materials they needed to provide for their students' instruction when students were online. It also shows the percentage of students who vision professionals reported had the materials they needed in their home to participate in online instruction. Students with visual impairments and additional disabilities were less likely to have at home the materials they needed to participate in their education than students who did not have additional disabilities.

TABLE 12:					
Availability of Materials for Professionals and Students					

	TVIs		O&M Specialists		Dually Certified Professionals	
Percentage of Vision Professionals Who Report They Have Needed Materials						
	n	%	n	%	n	%
Blind	184	70	49	86	60	70
LV	250	84	60	87	77	77
AD	252	77	63	79	79	76
Percentage of Professionals Who Report Students Have Materials in the Home to Participate in Online Education						
	n	%	n	%	n	%
Blind	130	71	37	76	45	78
LV	218	81	43	84	62	73
AD	223	64	44	61	66	59

EDUCATIONAL DELIVERY MODELS

"I believe that I am still a step behind, but am resourceful and finding the answers I need by asking others and doing research. I can see the pros and cons of what platforms and tech I will continue to use when we go back to in person. By not [not having the option to be in-person], one has to figure this out!"—*White female TVI*

EDUCATIONAL DELIVERY MODELS

Before the COVID-19 pandemic, in the 2018-2019 school year, there were 56.6 million children in the United States enrolled in school, 50.8 million children in public education, 5.8 million in private schools, and the rest in other settings.[8] In Canada in 2018-2019, there were approximately 5.6 million children enrolled in school, with 91.8% of them attending public school.[9] School enrollment rates in the United States dropped during the fall semester of the 2020-2021 school year, most notably for children in pre-K and kindergarten. It was estimated that the average school district saw a 16% enrollment drop in kindergarten enrollment.[10] The researchers wanted to understand attendance for children whose family members participated in the study. Of the 175 preschool and school-age children, 141 (81%) family members reported that their child/family attends almost all classes or meetings, 29 (17%) reported that they make an effort for their child/family to attend most classes/meetings, but they miss some, and 5 (2%) family members reported it is a struggle for them and/or their child to attend classes/meetings and many are missed. Readers should keep in mind that those family members reporting these data took time to complete a long survey, had Internet access, and may not be representative of the population.

There were 102 (69%) of 148 professionals who reported having at least one family member who declined to have their child attend school in a building.

"Many students have learned so much technology through all of this, which is a positive. But those who need more hands-on [instruction] or are unable to do the activities online are losing out on therapies and other related services."
—*White female TVI*

[8] TK-12 Enrollment Statistics [2021]: Totals by Grade Level + More. *EducationData.* Accessed March 12, 2021. https://educationdata.org/k12-enrollment-statistics

[9] Government of Canada SC. *The Daily — Vast majority of students attended public schools prior to the pandemic.* Published October 15, 2020. Accessed March 12, 2021. https://www150.statcan.gc.ca/n1/daily-quotidien/201015/dq201015a-eng.htm

[10] *Enrollment Is Dropping in Public Schools Around the Country.* NPR.org. Accessed March 12, 2021. https://www.npr.org/2020/10/09/920316481/enrollment-is-dropping-in-public-schools-around-the-country

The researchers recognized that across the United States and Canada a range of educational delivery models were being used due to the COVID-19 pandemic. The following six definitions of educational delivery models were used in the survey:

• **Low-Tech:** The TVI and/or O&M specialist does not meet online with the family member and/or student using video such as Zoom or FaceTime. The TVI and/or O&M specialist may use telephone calls, texts, emails, and/or deliver or send materials to the student's home. The family member may use some apps on a limited basis, if at all.

• **In Person in the Same Physical Space:** The TVI and/or O&M specialist meets in person with the family member and/or student. The TVI and/or O&M specialist may use telephone calls, texts, emails, and/or deliver or send materials to the student's home. The family member may use some apps.

• **Online Instruction:** The TVI and/or O&M specialist meets online with the family member and/or student. The TVI and/or O&M specialist may use telephone calls, texts, emails, and/or deliver or send materials to the student's home. The family member may use some apps.

• **Hybrid Instruction:** The TVI and/or O&M specialist meets in person in the same physical space and online with the family member and/or student. The TVI and/or O&M specialist may use telephone calls, texts, emails, and/or deliver or send materials to the student's home. The family member may use some apps.

• **Homeschool with No Services from a TVI and/or O&M Specialist:** The TVI and/or O&M specialist does not meet with the family member and/or the student. The family member uses an educational curriculum or program they have developed, purchased, and/or received from the school district or state/province.

• **Homeschool with Services from a TVI and/or O&M Specialist:** The TVI and/or O&M specialist meets in person in the same physical space and/or online with the family member and/or student. The family member uses an educational curriculum or program they have developed, purchased, and/or received from the school district or state/province.

Family members of preschool students (n=22) and school-age students (n=168) in addition to the vision professionals were asked a series of questions about educational delivery models.

"My child is low tech as she has not been taught screen reading technology, but instead uses a braille notetaker device (Polaris BrailleSense). This has a significant impact because all of the programs our school is using with students are not accessible with this device. She literally only has access to braille and email."—*Hispanic female family member of a child who is blind with additional disabilities, 13 to 15 years old*

LOW-TECH EDUCATION

There were 9 children whose family members reported they were receiving education through a low-tech delivery model. Five of the children were receiving either TVI and/or O&M services. Family members reported that children had low-tech options for accessing print, such as a dome magnifier and large print. Overwhelmingly, the 9 family members wanted their children to receive in-person instruction since the children were not successful with an online model.

IN-PERSON EDUCATION

There were 70 children whose family members reported they were receiving full-time in-person education. Other children were receiving in-person education as part of a hybrid model.

Whether a fully in-person, hybrid, or homeschool delivery model was being used, the researchers wanted to understand how in-person education was being delivered during the pandemic. Ninety-six family members of preschool and school-age children were asked to select all the ways in-person education was currently occurring for their child. These included meetings:

• Inside a school or other professional building (n=82)

• In a public outdoor space, for example, at the park or on the playground at the school (n=19)

• Outside of the home, for example, on the porch or in the backyard (n=10)

• Inside the home (n=6)

Eighty-six family members of preschool and school-age children reported the number of days their child currently attended school in a building. Six (7%) of 86 students attended one day a week, 12 (14%) attended two days a week, 5 (6%) attended three days a week, 12 (14%) attended four days a week, and 51 (59%) attended five days a week.

Family members of preschool and school-age students were asked to select their level of agreement with the statement: I believe the benefits of my child working with the TVI and/or O&M specialist in person, given the current levels of safety precautions and protections in place, outweigh the risks of potential exposure to COVID-19 for my child. Of the 97 family members who responded, the mean was 3.3 (SD=1.0).[11] The level of agreement participants had with this statement fell between "Agree" and "Strongly agree."

Family members of preschool and school-age students were asked to select their level of agreement with the statement: I believe the benefits of my child working with the TVI and/or O&M specialist in person, given the current levels of safety precautions and protections in place, outweigh the risks of potential exposure to COVID-19 for me or others who have regular contact with my child. Of the 97 family members who responded, the mean was 3.3 (SD=1.1).[12] The level of agreement participants had with this statement fell between "Agree" and "Strongly agree."

[11/12] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

Over three-quarters (n=357, 77%) of 465 vision professionals reported they had students going into buildings to receive educational services. When asked if they had a choice about serving students receiving education in buildings, 358 professionals answered the question, with 112 (31%) reporting they did have a choice, 195 (54%) reporting they did not have a choice, and 51 (14%) unsure if the choice was theirs. Fifty-five professionals who had students receiving some or all of their education in buildings reported that there was at least one building they were not permitted to enter to provide service. In these cases, vision professionals had to use alternative methods to serve students. These included relying on other educational team members or family members to deliver instruction, meeting outdoors with students, or designing simplified lessons family members could carry out.

Vision professionals were asked to select their level of agreement with the statement: Given current school and district policies and procedures, I am comfortable providing in-person instruction for all the districts I serve where in-person instruction is allowed. Of the 453 vision professionals who responded, the mean was 2.54 (SD=0.94).[13] The level of agreement participants had with this statement fell between "Disagree" and "Agree."

"I am a retired TVI who is currently working full time as a 'remote' TVI. I meet daily with my students via remote access. Four are in schools, the fifth is in their home. I connect via Zoom. My students have an acrylic tabletop shelf where they put their device, I can then view their work through the device camera. I can see directly their brailling or work below the tabletop.
Some student[s] use two devices, both logged in with Zoom, and this enables me to see their brailling and their math window work. The clarity of viewing is excellent and has allowed the lessons to be highly successful."—*Female TVI*

[13] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

SAFETY

"Each district has a different way of screening when I arrive and there is little consistency on that screening. Because we itinerants run from building to building with little wiggle room, I miss several minutes of each session with some of my students because the screening takes so long and changes at will. [I am] using an app one day then having the nurse or security person check me in another day, etc."—*Multiracial female TVI*

During the pandemic, safety is a concern for both family members and vision professionals when in-person education occurs. Family members of preschool and school-age students were asked about the frequency they, the TVI, and/or the O&M specialist were using COVID-19 safety precautions when meeting in person. As expected, use of safety precautions was high. Ninety-nine (94%) of 105 family members reported they always used COVID-19 safety precautions. Thirty-four (90%) of 36 family members reported the TVI always used COVID-19 safety precautions, and 71 (88%) of 81 family members reported the O&M specialist always used COVID-19 safety precautions. Family members of school-age children were asked about their child's adherence to COVID-19 safety precautions. Of the 105 children receiving in-person education, 11 (10%) children did not understand the importance of safety precautions, 84 (80%) children used safety precautions all the time, 6 (6%) most of the time, 2 (2%) some of the time, and 2 (2%) hardly ever.

The professionals were provided a list of ways they may use to maintain their safety. There were 425 professionals who indicated that they did at least one of the following:

- Wore a mask (n=370)
- Requested that all adults wear a mask (n=237)
- Requested that whenever possible students wear a mask (n=280)
- Maintained 6 feet or more distance (n=172)
- Only met with students and/or their family members when an activity/service had to be done in person in the same physical space (n=97)
- Wore a face shield (n=72)
- Refrained from meeting indoors with students and/or their family members (n=71)
- Wore gloves (n=56)
- Restricted the length of in-person meetings (n=53)
- Wore protective clothing (n=33)

> **Professionals were asked to select their level of agreement with the statement: Given current school and district policies and procedures, I am comfortable providing in-person instruction for all the districts I serve where in-person instruction is allowed.** Of the 453 professionals who responded, the mean was 2.55 (SD=0.94).[14] The level of agreement participants had with this statement fell between "Disagree" and "Agree."

ONLINE EDUCATION

"Low vision students are using their tools more proficiently (low vision and auditory access) and are not struggling as much to 'see the board' [when online]. Their access is very dependent on the quality of the instructional media that are posted digitally, and on how well the classroom teacher understands how to screenshare the best possible images."—*Asian female dually certified professional*

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[14] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

There were 57 preschool and school-age students whose family members reported they were receiving online education. Family members were asked if they electronically received lessons, assignments, or activities from any of their child's teachers or therapists. Of 171 family members, 108 (63%) reported they did. Yet 115 family members reported on how frequently they received these items, with 29 (25%) family members reporting 1-2 times a week, 10 (9%) 3-4 times a week, 19 (17%) 5-6 times a week, 21 (18%) 7 or more times a week, and 36 (31%) indicating it varied. Sixty-nine family members reported they were asked to send evidence showing their child had completed the work.

Family members were asked how many hours a week they or their child met online with the TVI. Of the 36 family members who reported online meetings, 13 (36%) reported meeting 1-3 hours a week, 7 (19%) 4-6 hours a week, 4 (11%) 10 or more hours a week, and 12 (33%) reported the number of hours varied. Due to an error with the survey, the amount of online meeting time with the O&M specialist was not captured. Seventy-four family members reported their child and/or family members met online with regular or special education teachers.

Sixty-four (41%) of 155 professionals reported that they had students they were meeting with online who were also attending school in a building.

Professionals were asked to select their level of agreement with the statement: I am comfortable providing online instruction. Of the 457 professionals who responded, the mean was 2.87 (SD=0.72).[15] The level of agreement participants had with this statement fell between "Disagree" and "Agree" but was close to "Agree."

The researchers wanted to understand what platforms professionals were asked to use for online meetings with students and/or family members. Of the 440 professionals who selected at least one platform, 324 used Zoom, 217 Google Meet, 70 FaceTime, 70 Microsoft Teams, 30 Canvas, 23 Google Hangout, 14 Seesaw, 14 WebEx, and 11 Team Viewer.

Professionals and family members reported challenges with online meeting platforms including low Internet bandwidth resulting in lags or missed instruction, issues with accessibility for students using screen readers, content shared by teachers that was not accessible to students, difficulty or inability of students with low vision to see the screen, and lack of motivation or connection for some students with instruction delivered in this format.

[15] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

HYBRID EDUCATION

"I have been fortunate to see many students at their homes which has been wonderful to address their neighborhoods vs school surroundings. Parents seem more involved and learning what their children are capable of doing in O&M. Parents can be inconsistent with schedules and need more reminders for home visits than I have time to provide, but I do text prompts and reminders now. Online learning is limited, and I have two students who do not speak English and their families do not also, so I have been creative, finding online videos to teach orientation concepts in native languages to allow parents to participate and assist with learning concepts of orientation. Of course, there is always a technology glitch."—*White female O&M specialist*

There were 24 preschool and school-age children whose family members reported they were receiving education through a hybrid delivery model which combined in-person and online educational delivery.

Professionals were asked if they had designated days/times when they provided in-person instruction and days/times when they provided online instruction. Of the 364 professionals providing hybrid instruction, a third (n=125, 34%) had a set schedule, 69 (19%) were attempting to have a set schedule, 89 (25%) reported that most days they worked with a combination of online and in-person learners, and 81 (22%) reported they lacked a set schedule.

HOMESCHOOL EDUCATION

Six family members reported their child was being homeschooled, with four families homeschooling before the pandemic. All but one homeschooled child was receiving services from a TVI and/or O&M specialist. Most frequently, family members reported their children used laptops, smartphones, and canes. Family members reported that a challenge of the homeschool educational model was the lack of social interaction for their child.

"We are new to the homeschooling option but based on our experience, we are better off. The young childlike treatment and low expectations of the school were enough to drive us mad. We are providing the tools to access the world, and this is a huge benefit to our daughter. The support from caring and competent TVI and O&M [specialist] would be nice but not necessary as we truly believe we are on a good trajectory as parents."
—*White male family member of a child who has low vision with additional disabilities, 13 to 15 years old*

METHODS AND MATERIALS USED IN EDUCATION DURING THE COVID-19 PANDEMIC

"Teaching math content without manipulatives is almost impossible.…It isn't as much about what the school has done but we need prep time to prepare materials if we are virtual. You can't tell me on Thursday at 5 PM we are [going to be] virtual on Friday morning. I was in 14-day quarantine without access to any of my teaching materials because I couldn't go into my classroom. I figured it out with a friend slipping in to grab some things for me and slipping out but otherwise, I'd be out of luck. There was no chance to get students the materials they needed. We have to have a prep day."—*TVI*

METHODS AND MATERIALS USED IN EDUCATION DURING THE COVID-19 PANDEMIC

Students cannot be expected to participate in education if they do not have compensatory tools that allow them to access the curriculum. Family members were asked what tools their child was currently using at home for education and what tools their child did not have at home that are impacting their current learning. These data are reported for preschool and school-age students in Table 13. It is positive to note that half of the family members did not indicate that there were any tools their child did not have access to for learning. The (n) for each column represents the number of family members who provided data for the question.

TABLE 13:

Tools Available and Not Available to Students at Home

Compensatory Tools	Blind and Low Vision Students		Students with Additional Disabilities	
	Tools Available at Home (n=71)	Tool Not Available at Home (n=38)	Tools Available At Home (n=87)	Tools Not Available at Home (n=43)
Tablet	48	7	64	5
Laptop	54	5	60	5
Smartphone	34	5	34	8
Handheld magnifier	13	5	20	8
Handheld monocular telescope	9	4	8	8
Electronic magnifier/CCTV	9	11	15	11
Large print books	9	14	25	7
Cane/long cane/white cane	49	2	39	4
Pre-cane/Adaptive Mobility Device (AMD)	1	2	3	7
Perkins braillewriter	37	5	28	8
Refreshable braille display	19	9	10	12
Braille recreational books	34	9	23	13
Victor Reader Stream or device to listen to audio books	13	4	18	8
Abacus	18	3	16	9
Tactile graphics materials	23	8	18	17
Specialized/alternative communication device or system	2	7	9	17
Adapted books	9	6	18	11

"My biggest frustration is overall accessibility. Example, the class is assigned an online science simulation on creating circuits that is produced by a curriculum company. The science simulation is visual with no auditory information and the only way to connect the pieces is by using finger gestures. My child can't see the parts so can't do the assignment. The common answer for this situation is to exempt my child because it is too visual. Why? Doesn't my child need to learn and understand this concept of 'currents' just like everyone else? Why does my child not have the opportunity to learn ideas and concepts because companies don't make things accessible, schools buy those inaccessible programs and then don't provide an alternative way to learn the same information? I wonder if this was happening all the time when face-to-face instruction was provided and I didn't know it and now in remote [instruction] I see the lack of accessibility OR when schools were in person they had all the supplies or extra help to make assignments accessible and now because of remote learning the school doesn't have a method to make the materials in an accessible way."—*White female family member of a child with low vision, 16 to 18 years old, and a dually certified professional*

A key question for the researchers was to understand what digital learning tools students were being asked to use and if these tools were accessible to students with visual impairments. In the survey, professionals were asked about which digital learning tools their students were expected to use by their general or special education teachers regardless of accessibility for their students. They were then asked which of the learning tools were not accessible to students because of students' visual impairments. We cannot know if the students the professionals currently serve had actually used the digital learning tools, nor if their judgement on accessibility was based on firsthand knowledge. Yet, the data reported in Table 14 does raise concerns about the accessibility of digital learning tools commonly used in education. Table 14 includes digital learning tools that students are expected to use as reported by 25 or more vision professionals.

TABLE 14:

Percentage of Digital Learning Tools Reported by Professionals to Not Be Accessible to Students with Visual Impairments

	Tools expected to be used (n)	Tools that are not accessible (n)	Percentage of professionals who reported that tool is not accessible
Class Dojo	90	22	24
Edgenuity	36	17	47
Edpuzzle	48	25	52
FaceTime	52	10	19
Google Classroom	301	46	15
Google Drive	258	33	13
Google Hangout	44	11	25
Google Meet	230	25	11
i-Ready	67	45	67
IXL	77	44	57
Kahoot!	136	66	48
Microsoft Teams	89	15	17
Nearpod	71	35	49
Quizizz	36	27	75
Quizlet	99	40	40
Remind	78	7	9
Schoology	97	30	31
Seesaw	137	47	34
Zoom	326	45	14

The digital learning tools reported used most frequently were Google Classroom, Google Drive, Google Meet, and Zoom. These digital learning tools were discussed extensively by family members and vision professionals in responses to open-ended questions. The researchers were not surprised by how many less frequently used digital learning tools were reported to not be accessible, but even frequently used tools were reported to have accessibility issues. From these limited data, it is clear additional research is needed to understand the impact of digital learning tools on the education of students with visual impairments.

INSTRUCTION FROM TEACHERS OF STUDENTS WITH VISUAL IMPAIRMENTS

"For academic low vision students, I am quite comfortable meeting with them online. For most students with additional disabilities, I am less comfortable in that I am trying to relay how to be a VI teacher to the parent. Although I share techniques and make many suggestions, tweak activities, etc., I feel that I need to hold back in order to not overwhelm the parents. While on an online meeting, I feel we rush too much in order to see a snippet of activities, when in reality, we would give much more wait time."—*White female TVI*

INSTRUCTION FROM TEACHERS OF STUDENTS WITH VISUAL IMPAIRMENTS

Seventeen preschool students and 136 school-age students were being served by a TVI at the time family members completed the survey. One preschooler and 13 school-age students were not receiving TVI services as part of their educational program; 11 family members of school-age students reported the TVI had offered services which they had declined.

Family members of preschool and school-age children were asked how the TVI had supported them since the 2020-2021 school year began. There were 150 family members who reported one or more ways the TVI supported them. The mean for the number of ways selected was 3.51 (SD=2.1). Ways in which support was provided included:

• Called or texted (n=102)

• Met online with their child (n=100)

• Met with them and/or their child in person in the same physical space (n=73)

• Mailed or delivered toys or materials to the home (n=66)

• Recommended resources specific to children with visual impairments (n=44)

• Emailed ideas and activities (n=42)

• Recommended generic resources (n=38)

• Demonstrated or described via telephone or online specific ways to support the child's learning (n=27)

• Made and shared videos online to demonstrate things specific to the child (n=16)

From a list of 28 options, the 300 TVIs selected the multiple ways they supported their students' education with an average of 12.68 (SD=5.83) ways selected. The 12 most frequent ways the TVIs provided support included:

• Meeting online with student and/or their family member to consult, give suggestions, etc. (n=295)

• Meeting online with the student and/or student and family member to observe and provide feedback after the student completed an activity (n=285)

• Teaching students ECC skills (n=271)

• Adapting, transcribing, or creating materials for students (n=265)

• Speaking by telephone with students and/or their family members to consult, give suggestions, etc. (n=263)

• Delivering materials to students (n=263)

- Texting with students and/or their family members to consult, give suggestions, etc. (n=258)

- Providing in-person instruction in the same physical space (n=240)

- Teaching students braille/pre-braille (n=233)

- Sending resources to students and/or their family members (n=229)

- Using online meeting tools (e.g., Zoom), accessing students' live class meetings to co-teach, observe, and/or provide real-time access/instructional support during classes (n=220)

- Collaborating with students' paraprofessional (n=197)

ASSESSMENT

"Assessments are not as detailed due to the limited number of times I am able to see the child in person. It is very challenging to gather enough adequate information to include in their FVA and LMA. For students that are remaining only virtual, parents are willing to bring them into school 1x a week for a 1:1 session, but that does not reflect how the child participates in a classroom setting with other children/distractions."—*White female TVI*

TVIs are responsible for conducting functional vision assessments (FVA), learning media assessments (LMA), and often, assistive technology assessments. They also assess students in areas of the ECC and may conduct academic assessments as well. The TVIs were asked to share their successes, limitations, and challenges conducting assessments for their students during the COVID-19 pandemic.

The TVIs reported that when having to conduct assessments online, they were not able to see the level of detail that they would in person. Online assessments also necessitated that materials be provided to the student and that a family member provide support. These necessities were not always possible. A part of the FVA is understanding how the student uses vision in different environments. When online, TVIs were not able to observe the student in areas of the school and in a variety of activities. Some TVIs reported that assessments were either put on hold or that administrators had indicated assessment would be repeated when in-person meetings were safe to hold.

Many TVIs specifically talked about the challenges of doing FVAs with students who have additional disabilities. Since many of these children are nonverbal, TVIs rely heavily on observation. It was often not possible to do the same level of observation via video or in a one-time, in-person session with a student. Lack of assessment data impacted the ability of TVIs to develop IFSP and IEP goals for their students.

The benefit of online assessments reported by some TVIs was an increase in the family understanding of how the child used vision, completed tasks, and used assistive technology, for example. TVIs were able to help family members see ways in which they could support their child's learning.

"Assessments require partnership with families, and it can be difficult for families to feel the burden of added demands. For some students, the limitations of remote observations (hard to see the students' eyes, audio or video quality issues) can mean my observations are not as accurate as in person. However, I feel parents can be great partners in assessment and are likely to better understand their child's visual impairment when they assist in and ask questions about the process."—*White family member of a blind child with additional disabilities, 19 to 22 years old, and a TVI*

INSTRUCTION FROM ORIENTATION AND MOBILITY SPECIALISTS

"For O&M, being limited to online instruction has made meeting goals of learning street crossing, getting transit, and practicing travel in general difficult to execute even by simulating virtual reality via computer. There is nothing like standing on the street corner and analyzing traffic patterns live. Also, parents are not taking kids to the stores or out on outings anymore due to valid health concerns, but this is also limiting their ability to learn through experiences and isolating the child even more."—*Native American of Hispanic descent, dually certified professional*
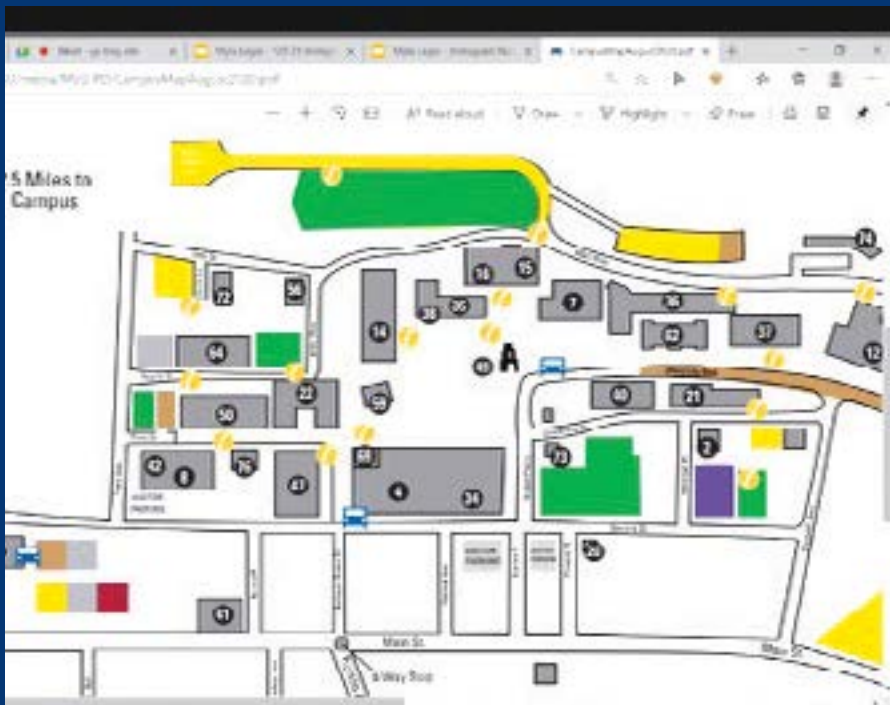
INSTRUCTION FROM ORIENTATION AND MOBILITY SPECIALISTS

Eleven (61%) of the preschool students and 107 (67%) of the school-age students were being served by an O&M specialist at the time the family members completed the survey. One preschooler (6%) and 35 (22%) school-age students were not receiving O&M services as part of their educational program; 18 (11%) family members of school-age students reported the O&M specialist had offered services which their family declined. There was one (6%) family member of a preschooler whose child had O&M services on their IEP; however, the family member had not been contacted by the O&M specialist.

Family members of preschool and school-age children were asked how the O&M specialist had supported them since the 2020-2021 school year began. There were 116 family members who reported one or more ways the O&M specialist supported them with an average of 2.63 (SD=1.59) ways, including:

- Meeting with them and/or their child in person in the same physical space (n=74)

- Calling or texting (n=62)

- Meeting online with their child (n=59)

- Emailing ideas and activities (n=44)

- Mailing or delivering toys or materials to the home (n=28)

- Recommending resources specific to children with visual impairments (n=21)

- Speaking by telephone or online to demonstrate or describe specific ways to support the child's learning (n=21)

- Making and sharing videos online to demonstrate things specific to the child (n=11)

"[Online instruction from the O&M specialists] is definitely better than nothing but I worry about him getting behind or skills getting rusty because his O&M [specialist] can't be here in person to instruct him. It seems with what we know about COVID that it should be safe to work with him from a distance if everyone is masked and it is outside."—*White female family member of a child who is blind, 5 to 7 years old*

From a list of 25 options, 157 O&M specialists selected the multiple ways they provided instruction with an average of 9.15 (SD=5.79) ways selected. The 12 most frequent ways the O&M specialists provided instruction included:

• Consulting with other educational team members about students' O&M skills (n=111)

• Providing in-person instruction in the same physical space (n=107)

• Meeting online with the student and family member to consult, give suggestions, etc. (n=94)

• Texting with the student and/or their family members to consult, give suggestions, etc. (n=84)

• Sending resources to students and/or their family members (n=78)

• Teaching other ECC content that is still relevant to O&M (n=76)

• Speaking by telephone with students and/or their family members to consult, give suggestions, etc. (n=75)

• Providing suggestions on how to practice O&M skills in familiar environments (n=74)

• Creating assignments for students to complete based on students' IEP goals (n=72)

• Sharing with family members ideas for the child to practice concepts (n=65)

• Sending family members videos to watch with their child (n=64)

• Exploring websites with the student to learn about communities (n=60)

The O&M specialists reported how they were conducting assessments with their students. Sixty-one O&M specialists collected assessment data in person, while 44 O&M specialists completed the assessment online. Nineteen O&M specialists reported they were not conducting O&M assessments, and 31 indicated that though they were not conducting O&M assessments at the time they completed the survey, they planned to start doing so in the future.

TEACHING STUDENTS A VARIETY OF O&M SKILLS

"It has been difficult to maintain 6 feet when hand-under-hand modeling is necessary or physical prompts are required. More verbal prompting has been a personal challenge. Constantly finding myself saying 'How do I say this so that the kid understands?' Also, I am encouraging lots of independent movement with my elementary kiddos and not allowing human guide technique. It has actually been fantastic because my student is learning landmarks and clues and routes by himself."—*White female O&M specialist*

There were 116 (71%) of 164 O&M specialists serving students in early intervention, preschool, and/or serving students with additional disabilities. Twenty-five O&M specialists were working in the same physical space with children in early intervention, 35 with preschoolers, and 63 with those who have additional disabilities. Eighty-six O&M specialists were providing consultation to other educational team members. The O&M specialists selected multiple ways they were supporting family members in building their child's O&M skills, including:

• Supporting family members in creating safe environments for the child to explore (n=63)

• Suggesting terms/language the family members should use (n=60)

• Encouraging family members to point out auditory sounds to the child (n=58)

• Suggesting ways to get the child to explore the environment (n=58)

• Helping to build the child's sound localization skills (n=55)

• Recommending the family member use descriptive language (n=53)

• Providing instruction in other ECC content related to O&M skills (n=52)

When asked if they had students with IEP goals focused on school campus travel, 116 (71%) of 164 O&M specialists reported they did. Seventy-seven O&M specialists were working in the same physical space with their students and 57 O&M specialists were providing consultation to other educational team members. The O&M specialists selected multiple ways they were working with their students and/or their students' family members to address school campus travel goals. They were:

• Providing instruction in other ECC content related to O&M skills (n=53)

- Providing ideas for students and family members to practice skills in familiar environments (n=49)

- Having students create maps of the school or route (n=45)

- Designing opportunities for students to practice problem-solving skills (n=40)

Students who had IEP goals focused on neighborhood/residential travel were on the caseloads of 116 O&M specialists. Seventy-four O&M specialists were working on residential travel goals with their students in person and 44 O&M specialists were providing consultation to other educational team members about their students' travel skills. With their students who had residential travel IEP goals, the O&M specialists were:

- Providing instruction in other ECC content related to O&M skills (n=55)

- Supporting family members in having the student practice O&M skills in familiar environments (n=47)

- Having students create maps of neighborhoods (n=44)

- Sharing ideas with family members and students to practice problem-solving and orientation skills in familiar environments (n=37)

- Suggesting ways for family members to practice concepts with the student such as "block" or "curb" (n=37)

There were 81 O&M specialists who had students with IEP goals focused on business/commercial travel. Fifty-four O&M specialists were working with students with these goals in person, and 28 O&M specialists were providing consultation to educational team members. O&M specialists were:

- Having students plan routes in business areas (n=48)

- Providing instruction in other ECC content related to O&M skills (n=28)

- Having students use online tools (e.g., Google Maps) to analyze intersections (n=36)

- Having students plan routes in future environments such as the community where they planned to attend college (n=36)

- Having students create maps of commercial areas (n=22)

Seventy-two O&M specialists had students with IEP goals focused on use of public transit, rideshare services, and/or exploring driving with low vision. Only 16 of the O&M specialists were working in person with students on these goals and 15 were consulting with other educational team members about students' O&M skills. Thus, most of the students with these travel goals were missing out on learning opportunities due to pandemic restrictions. Especially for students nearing graduation or aging out of special education services, the time missed because of

"I have not been able to conduct in-person O&M assessments this school year. I have a student who completed her in-school travel goal. Her annual IEP in early November includes a new goal pertaining to residential area travel skills and concepts. I have not seen her in person since March. I did not have baseline [data] so I included a more general IEP goal. [I am] using pictures, worksheets, and Google Maps to begin instruction."—*White female O&M specialist*

the pandemic can have life-long impact. The most frequent ways O&M specialists were addressing these goals were:

- Having students plan hypothetical trips (n=50)

- Providing instruction in other ECC content related to O&M skills (n=42)

- Having students compare the cost of different transit options for the same route (n=35)

- Gathering information about paratransit to determine if they qualify (n=31)

- Having students locate maps of bus stations, train stations, etc. and using these when role-playing different scenarios (n=27).

ASSESSMENT

Conducting assessments and using the information to inform O&M specialists of the skills students need to learn has been challenging to do for many O&M specialists whether in person or online. With in-person assessments, the necessity to social distance and the use of masks has presented challenges with communication and monitoring. Many families are reluctant to have their child in close proximity to the O&M specialist due to safety concerns, and there are also O&M specialists who do not want to be in close proximity to students. Limited travel opportunities in the community have made assessing bus skills, locating and entering businesses, and other higher-level skills a challenge.

O&M specialists reported that when they were working online with family members to assess students' O&M skills, they had to be explicit with directions, spend time coaching family members, and send materials ahead of time to the family. Taking time to do these things took away from instructional time. On the other hand, because some family members were involved in the assessment process, they were learning about their child's skills and those that their child needed to develop.

SOCIAL-EMOTIONAL IMPACT OF THE PANDEMIC

"Dealing with uncertainty, inconsistency in my schedule, frustrations due to technology difficulties, lack of support for my students at home. I just feel discouraged sometimes."

—*Multiracial female TVI*

SOCIAL-EMOTIONAL IMPACT OF THE PANDEMIC

While some vision professionals were trying to remain upbeat and reported some positives regarding their own social-emotional well-being, most vision professionals were overwhelmed, stressed, exhausted, depressed, frustrated, or even confused. Some vision professionals shared that they were working with counselors or other professionals; others were left feeling like a first-year teacher. In general, most vision professionals were having a great deal of negative psychological impact from having to teach during the COVID-19 pandemic. There were negative feelings towards having to teach online and missing the in-person interactions with their students and co-workers.

Vision professionals also reported on the social-emotional impact of the COVID-19 pandemic on their students. Vision professionals were concerned about their students' emotional well-being regarding lack of interaction with peers and regression of skills. The TVIs and O&M specialists reported some positive benefits for students. For example, for students who experienced bullying in school, the shift to online education was viewed positively. Numerous vision professionals spoke about the resiliency of children and seemed hopeful that there would not be negative long-term emotional impacts on their students.

"My child is receiving education through a hybrid approach. Since he has just moved into middle school, his current teachers DO NOT know him. At the beginning of the year, our district was fully remote. That changed after the first month of school. They use Teams platform with meetings either through Teams or Zoom. My child also needed to use textbooks and access documents that are loaded into the system. This has been nothing but an anxiety-provoking experience where he is in tears very often. He has challenges manipulating multiple devices and electronic systems. Most of the documents and platforms he needs to access do not allow for enlargement. He is having difficulty completing his work due to stress and challenges focusing. His anxiety is through the roof."—*White female family member of a child with low vision, 13 to 15 years old*

The researchers did not specifically ask family members about their own experiences related to the social-emotional impact of the pandemic on them or their children. However, in the responses to open-ended questions throughout the survey, many family members indicated that both they and their children were experiencing stress and were overwhelmed. Having to manage all of their children's online learning while simultaneously navigating the challenges associated with COVID-19 was proving to be an immense challenge for many families. Family members reported being angry, upset, frustrated, and feeling as if they had too much on their plates.

Family members of preschool and school-age students were asked to select their level of agreement with the statement: I believe my child is growing socially in the same way they would if COVID-19 had not interrupted school. Of the 177 family members who responded, the mean was 1.84 (SD=0.95).[16] The level of agreement participants had with this statement fell between "Strongly disagree" and "Disagree." Children's social-emotional well-being was a great concern for family members.

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[16] The mean (M) is derived by averaging the participants' ratings—from "Strongly disagree" (1) to "Strongly agree" (4). The larger the standard deviation (SD), the greater the spread from the mean of the participants' ratings.

RECOMMENDATIONS

"I am concerned about [student] regression and how it will be dealt with. There has definitely been regression, but it seems like some districts are going to wait until 3-year evaluations to determine what they are and what to do. I do not know how you manage regression when there [are] only so many hours in the day and so many weeks and hours in the summer for summer programing. I am also concerned about students age 3 going into districts where they are not doing any in-person assessments or education."
—*White female TVI*

RECOMMENDATIONS

Nine months into the pandemic, is the education being provided to students meeting their educational needs? Are there appropriate plans in place, or will appropriate plans be developed, to address educational gaps for students who are not progressing in their education, especially younger students, those with additional disabilities, and those who are deafblind?

How are students impacted when they do not have the necessary technology and knowledge to access education in an online or hybrid education delivery model? What occurs when there is no one in the home who can provide the student support with their education or the student does not respond well, if at all, to instruction delivered through a computer screen or other device? When a student requires hands-on instruction or support during in-person education, how is this achieved while maintaining COVID-19 safety protocols? The list of questions goes on as we consider both the short-term and long-term impacts of the pandemic.

> "Actually, students seem to be handling it much better than their parents or teachers. Children are resilient and I have many students thriving and excited about all they are accomplishing."—*White male dually certified professional*

We have also seen the resiliency of many students with visual impairments and their ability to learn and thrive during the pandemic. How do we harness the positives for certain students, such as being able to more easily access curricular materials during online classes compared to in-person ones? After working collaboratively with vision professionals during the pandemic, many family members have gained a more thorough understanding of how to support their child's education. How do we continue to build on these relationships and increased knowledge? For students who have increased their problem-solving skills, technology skills, and independent living skills and had the opportunity to use these skills in their home, how can we support their continued growth and the integration of skills between home and school? And again, the list goes on as we recognize that there have been positive shifts in education as a result of the pandemic.

In the first *Access and Engagement* report that examined the impact of COVID-19 on the education of students with visual impairments in the early months of the pandemic, the authors provided recommendations for family members, vision professionals, other educators, administrators, and policymakers. Most of those recommendations are still applicable as we examine the findings from the 662 individuals who participated in *Access and Engagement II* during the ninth month of the pandemic.

In the following pages the authors have organized the recommendations around key topics that emerged from the study findings:

• The importance of teamwork

• Full access to digital learning

• Providing students access to the curriculum

• Meeting the needs of students with additional disabilities, including those with deafblindness

• Changes to IFSPs and IEPs as a result of the pandemic

• Provision of orientation and mobility instruction

• Continuing to build on successes that have resulted from the COVID-19 pandemic

• Supporting the mental health and safety of students, families, and professionals

THE IMPORTANCE OF TEAMWORK

Education teams are the foundation on which a child's education rests. Effective educational teams must be given time by administrators to build relationships, work together to plan, and make decisions based on the needs of the child.

Clear, Consistent, and Accessible Communication

Communication between students, family members, vision professional, other educators, and administrators must be ongoing, clear, and individualized to the needs of the student and family members.

"During the IEP meeting, nothing that I requested was granted.…[My child] needs face-to-face instruction for the general education class which is history. He also is not having access to his paraeducator in person which is detrimental for [online instruction] because I have to stay with him all day while he's doing his lessons because he can't operate the computer by himself or log on. I requested face-to-face for the whole day and it was totally denied. Only 'the Team' got what they wanted and what I requested was denied. I do not feel like I am an equal member of the IEP team. That's why I am leaving the school district for another state."—*Asian female family member of a child who is blind, 13 to 15 years old*

• Family members need clear information about the impact of changes being made in education delivery models to make decisions on behalf of their children. School districts, specialized school, and other educational agencies should provide clear information not only about what changes to the school environment or teaching practices will occur, but also how those changes will affect educational delivery models. In addition, family members need to know which educational delivery models are available for their child.

• All educational team members and administrators should ensure that family members and students are treated as equal members of the educational team. When a team is not working together, it is the student who loses out.

• Family members and students who do not speak English as their primary language need access to interpreters. The move to online platforms and stretched budgets are not appropriate reasons not to provide family members and students access to interpreters.

• Students who are in the process of building their English proficiency skills should receive coordinated services from staff members who are knowledgeable about providing instruction to English learners. Their instruction should be coordinated with vision professionals to ensure the methods and materials being used are accessible to the learner.

"A big challenge I have had with connecting with families is language barriers. In a typical school year, we would be able to schedule an interpreter or get someone at the school to translate for us. However, being itinerant and having a lot of people working virtually now, it is hard to find someone regularly who can translate and help me have good communication with families."
—*White female TVI*

ENSURING FULL PARTICIPATION IN EDUCATION

Vision professionals who are experts in their fields must be acknowledged and have the time and resources to meet their students' diverse needs.

"I had a student with a progressive vision loss who needed a re-evaluation in March, but due to COVID, I was unable to travel to conduct assessments. I will hopefully travel this month to conduct those assessments, but I have been limited by both school closure and school bureaucracy."—*White female dually certified professional*

- Administrators must be willing to work with educators to designate funding and resources, so that all students who need services are provided these in a timely manner. Vision professionals and other educators may require flexible schedules and additional personnel may need to be hired as necessary.

- Funding must be made available for accessible technology tailored to the individual student's needs, and made available to families in addition to training and troubleshooting support.

- Vision professionals have expertise that others do not. They must be consulted and their opinion valued when administrators and policymakers are making decisions on which technology to purchase or implement.

- Policymakers and administrators should examine the caseload sizes of vision professionals and plan for hiring new staff to adjust caseload sizes while maintaining service levels. When caseload numbers are high, it is impossible for vision professionals to effectively meet the varied needs of the full range of students on their caseloads.

- Administrators must ensure that assessments continue to occur as required by the IDEA and individual student needs.

ENSURING BASIC NEEDS OF STUDENTS AND THEIR FAMILIES ARE MET

Student success requires the family's basic needs be met for there to be investment in the child's education.

- Policymakers and administrators must recognize that for some students, education will not occur if their family members have more pressing issues to reconcile such as food, housing, or employment insecurity. Policymakers, administrators, vision professionals, and other educators must take a holistic approach to the education of students with visual impairments, and all students.

- School districts, specialized schools, and other educational agencies can partner with community agencies to ensure materials are available in the native language of family members or interpreters can translate so family members and educators can engage in meaningful dialog.

- School administrators, policymakers, and community leaders should work together to provide free or inexpensive childcare for younger siblings, ultimately allowing family members to have uninterrupted time to engage in their child's education.

- Policymakers and community agency partners should continue to work together to provide free or reduced meals to families experiencing food insecurity. Congress should ensure that the 15% increase in SNAP benefits provided in COVID-19 relief legislation and expansions of the Pandemic EBT program and WIC program continue for the length of the public health emergency. At the end of the emergency period, congressional leaders should continue evaluating and providing solutions to address ongoing needs for student well-being and food security.

FULL ACCESS TO DIGITAL LEARNING

Digital learning was part of education before the pandemic and will continue to be part of education going forward. However, the quick shift to online learning in spring 2020 highlighted challenges with digital learning for students with visual impairments and their families. Though many vision professionals reported technology and Internet access had improved for their students in the 2020-2021 school year compared to late spring of the 2019-2020 school year, there continued to be issues with online instruction for some students and family members. Both family members and vision professionals reported that many digital learning tools were not fully accessible to students with visual impairments or that even when they were accessible, they were

not usable by many students or family members. Usability is dependent not only on the accessibility of the learning tool, but the knowledge and skill of the user. Thus, students were negatively impacted regardless in which education delivery setting (e.g., online, in-person) instruction occurred. Students must have the same access to assistive technology in the home that they do in the brick-and-mortar classroom.

"I still need assistance in getting the students proficient with their devices. By not having an item, I adapt, until I bother folks enough to order a better device. Sometimes our administrators hear about a tool or device and order it without thinking if it would be the best one [for the] student."—*White female dually certified professional*

THE NEED FOR INTERNET AND TECHNOLOGY IN THE HOME

We cannot expect our students with visual impairments to participate in online education without adequate Internet availability.

- Students with visual impairments, like all students, must have access to technology that allows them to connect with all educators and take part in all components of education. This technology includes devices needed by all students, such as hotspots and laptops, as well as assistive technology such as screen readers and braille notetakers.

- Policymakers, administrators, all educators, community businesses, and family members should invest in Internet infrastructure and technology tools that are up to date and efficient for tasks students are required to do as part of their education. The Federal Communications Commission (FCC) should implement the Emergency Broadband Benefit with a focus on device accessibility and outreach to people with disabilities and their families. The Benefit, or a similar program, should be made permanent after the public health emergency ends. Additionally, Congress and the FCC should consider a permanent expansion of the E-rate[17] program to afford schools and libraries the flexibility to serve students learning from home.

[17] https://www.fcc.gov/consumers/guides/universal-service-program-schools-and-libraries-e-rate

- Information on device accessibility should be made available to benefit recipients who receive devices through FCC-subsidized programs.

- School districts, specialized schools, and other educational agencies should provide opportunities to ensure family members and/or students know-how to use the device effectively. Such mechanisms may include basic literacy course offerings for families as well as adding assistive technology training to the student's IEP.

> "[Participation in online education] was much more of a problem last school year. One improvement this year is that [students] have all received devices and all have access to Internet (which is a major win in [rural state]). That being said, last week, I had a student go on quarantine. I was the first (as her O&M) to contact the family and meet virtually. My student and her parent had not yet been taught how to access the platform needed for virtual education visits, so in November, I was the first to address this with that particular family. She had the device but had not been trained how to use it."—*White female O&M specialist*

THE NEED FOR ASSISTIVE TECHNOLOGY, ACCOMMODATIONS, INSTRUCTION, AND ONGOING SUPPORT

Mechanisms are needed to provide students, family members, and vision professionals instruction and ongoing support with technology, including replacing and/or repairing technology in a timely manner.

- Students must have the same assistive technology (e.g., a screen reader such as JAWS, a braille notetaker) and accommodations (e.g., a large monitor, high-contrast keyboard) at home that they have at school.

- Vision professionals who are teaching students how to use their assistive technology often need access to the same tools so they can develop their own skills with the device and use it as they plan lessons and/or work in parallel with the student during the lesson.

- Administrators should allocate resources that will enable students, family members, vision professionals, and other educational team members who use assistive technology to receive ongoing training to learn new skills and support to troubleshoot issues when they arise.

- School districts should consider establishing an IT help desk for families and students that provides support for mainstream and assistive technologies used during instruction.

- It is imperative that administrators and vision professionals work together to establish policies and steps to be taken when a student's assistive technology is broken and must be sent out for repair or be replaced.

"All students in the school district that I work in were given Chromebooks as their point-of-school access this year. The battle is to convince and prove to the district [administration] that this is not the appropriate option for JAWS [users]. Braille Notetakers, really any accessible technology…has been very tough [to acquire for students]."—*White female TVI*

ACCESSIBLE DIGITAL LEARNING TOOLS

Students with visual impairments are entitled to an equitable education under IDEA, but when digital learning tools are not fully accessible, achieving equity is near impossible.

"My student does not have a refreshable braille display and is accessing all of her hybrid online materials audibly via screen readers (VoiceOver on her iPad and JAWS on her laptop). Additionally, nearly every class is posting assignments that are not accessible to her. Khan Academy is assigned in math, and none of the videos are described….I manually pull quiz questions from Khan Academy and place them in a Google form for her to access independently. But she is missing out on the instruction in the videos and missing any diagrams….We have found limitations within the Google Classroom platform (using VoiceOver on the iPad), which is where all of her materials are posted. The platform glitches with VoiceOver turned on, and she is unable to look back on past 'topics' to access old material. Google Classroom often registers radio buttons as 'dimmed' when they use the 'question' feature and offer multiple choice radio button answers. I've called Google and Apple three or four times this year to report these issues. There has been no resolution; they either work or they don't. Sometimes we troubleshoot by switching to her laptop which she is not yet efficient in using. The list goes on."—*White female dually certified professional*

- School districts, specialized schools, and other educational agencies in coordination with state or provincial governments should coordinate outreach to technology companies producing inaccessible digital learning tools to mitigate the burden on educators and students.

- Policymakers, administrators, technology companies, vision professionals, other educational team members, and students must work together to ensure that the digital learning tools, including websites, learning management system, and apps used in the classroom, in person or online, are accessible.

- School districts, specialized schools, and other educational agencies must only purchase or use digital learning tools that are fully vetted for accessibility. As part of the vetting process TVIs, O&M specialists, and/or assistive technology specialists must be included and their expertise taken into consideration in the decision-making process.

- IT coordinators within school districts should develop expertise in the assistive technology needs of students with disabilities.

- Technology companies must use inclusive design principles from the beginning of conception through production of a digital learning tool. Organizations such as the American Foundation for the Blind have consultants who can work with companies to provide them information to guide them in their work.

- Recognizing that currently there are many digital learning tools that are not fully accessible, administrators, vision professionals, and other educational team members should work together to develop plans so that students learn the same content as classmates and all educators have adequate time to adapt or develop parallel content to what is in the digital learning tools.

- The Department of Justice should finalize a rulemaking requiring accessible websites and mobile applications under Title II and III of the Americans with Disabilities Act (ADA). The Department of Education should emphasize the need for native accessibility in digital learning tools and the devices used for instruction. They should coordinate with the Department of Justice and FCC to explore opportunities to elevate accessible educational technology development beyond individual complaint processes.

PROVIDING STUDENTS ACCESS TO THE CURRICULUM

Whether a student with a visual impairment is in a general education program or a program tailored to their individual needs, access to the curriculum is essential to their participation and learning. Vision professionals cannot support students in accessing the curriculum if they do not have the resources they need to conduct assessments, prepare materials, coordinate with other members of the educational team, and provide instruction in ECC skills.

EFFECTIVE COMMUNICATION FOR EDUCATIONAL TEAM MEMBERS

The educational team must coordinate and communicate with each other to meet the unique needs of students with visual impairments.

"As professionals, we are not present 100% in a student's life and we need to realize this even before COVID, so it is crucial to use role release and have confidence in others. Communication is crucial right now, so everyone is on the same page as to what the student is able to do independently versus what they need support [in] or what's not safe or reasonable to expect from the student."—*White female O&M specialist*

- Administrators must provide support to allow vision professionals and other educational team members to routinely meet to review curricula, student learning preferences, and materials the student needs for learning. When time is provided, vision professionals are often able to produce or secure necessary materials that allow students to access the curriculum.

- Vision professionals often need the support of administrators to mitigate bureaucratic requirements. For example, every day that goes by without a student having a monitor to connect to a Chromebook to provide visual access means the student misses out on learning. When an administrator is able to step in and direct IT staff to release a monitor from a closed computer lab, the vision professional is then able to take the monitor to the student.

- Vision professionals and educational team members need time to meet to determine the specific accommodations a student will use in the classroom, put in place problem-solving strategies when the accommodations do not meet the student's needs, and establish timelines for classroom teachers to get materials to vision professionals so they can pre-teach the student and adapt materials for in-class learning.

- Vision professionals and often other educational team members need access to the same digital learning tools as the students. Not having the option to preview and review material with the student prevents the vision professionals from identifying and pre-teaching concepts, adapting materials, and determining necessary changes in how to present content to the student.

PROVIDING ACCESS TO CLASSROOM MATERIALS FOR STUDENTS

Access to instructional materials at the same time as peers is a cornerstone of inclusive education for students with visual impairments.

"Paper [packet] activities [provided by classroom teachers] must be adapted and sent [to the student]. I am creating all the hands-on worksheets to be presented via screen/slide deck for virtual students. I am creating activity boxes, finding more and more items so each student has an individual set. I am recreating everything from scratch or begging or borrowing from others even though the district policy is if [students] are virtual they need to find their supplies at home. That doesn't always apply to our students. We are still responsible for providing accessible materials."—*White female dually certified professional*

- Students, family members, vision professionals, and other educational team members must be empowered and have clear information about whom to contact if there are issues with access to the curriculum or needed materials, including braille.

- For students who are braille readers, administrators, vision professionals, other educational team members, students, and family members should work together to develop policies and procedures that ensure the students have hard-copy braille (braille produced on paper) and tactile graphics (raised-line drawings) at the same time the content is being covered in the classroom.

- Under the IDEA, students with disabilities are entitled to a free appropriate public education (FAPE). Administrators should institute appropriate processes and allocate sufficient funding to allow for accommodating students with the appropriate supplies, including using federal COVID-19 relief funding when available.

> "Some families love it because their child is more confident using their low vision devices at home without getting teased and it's self-paced and more targeted than in a general education room. They can actually see what is written on the board.…"—*Multiracial Hispanic female TVI*

- Students who have low vision and use large print or low vision devices must have access to these during online instruction. Vision professionals, other educational team members, family members, and administrators should work together to provide low vision tools to the student and, when necessary, training to family members on how to use these tools effectively.

- Funding should be allocated to purchase needed accommodations for students with low vision to minimize visual fatigue and allow them to access online learning.

- Many school districts provide students Chromebooks that have small screens and are difficult for many students with low vision to see. In many cases students need large monitors to connect to the Chromebooks or alternative devices to maximize student access. Students, family members, and vision professionals should have the appropriate permission and access to load screen access software on to devices and to change accessibility settings as necessary.

- Administrators should work with vision professionals to develop policies that will allow vision professionals and their support staff to access materials located within school buildings or offices when students and staff are not allowed on campus.

- Funding should be allocated to purchase multiple sets of materials that are typically shared between students in a classroom to allow each student to have individual access to necessary materials to engage in online learning.

- Administrators, vision professionals, and family members should explore alternatives for storage and use of materials to safeguard materials from being broken or stolen when in the home.

"Science experiments, for example, must be described verbally. As much as possible and when appropriate, the student is provided tactile models. It is impossible to completely replicate experiments, lessons, etc., that are provided in this particular class in an accessible format to a remote student who is completely blind."—*White female TVI*

- Vision professionals and family members should not be expected to spend their own funds to purchase materials students need for education when online. Purchasing in bulk, having a district-wide way to share materials, and seeking donations are ways administrators can help to ease the financial burden on vision professionals and families.

- Congressionally appropriated COVID-19 relief funds may be used to provide services under the IDEA. Administrators should ensure some of these funds are available to provide students with the appropriate materials and accommodations needed to provide a free appropriate public education.

- Administrators and vision professionals should craft reasonable policies to address who is responsible if equipment or materials become lost or damaged when in a student's home. In addition, procedures are needed to determine how the student will participate in education if they do not have access to the necessary equipment or materials. Students, particularly those from low-income and unhoused households, should not be excluded from their education because of a real or perceived risk of material loss, damage, or theft.

MEETING THE NEEDS OF STUDENTS WITH ADDITIONAL DISABILITIES, INCLUDING THOSE WITH DEAFBLINDNESS

For students with visual impairments and additional disabilities including deafblindness, the need for augmentative and alternative communication (AAC) devices, positioning equipment, adapted storybooks, high-contrast learning materials, etc., is individualized. Within a classroom setting, materials are often shared between students. Students who have additional disabilities may not tolerate or engage in online lessons without significant support from someone in the home. Vision professionals in *Access and Engagement II* perceived that for some students, support in the home was not available for reasons which included lack of family interest, family members having other responsibilities such as working from home, lack of Internet access, or family members not knowing how to use equipment and necessary teaching strategies.

"For students with very complex needs, the virtual classroom is not beneficial to them. We have provided materials for home use, but it certainly does not replicate what they would have access to in the special education classroom at school. This is particularly true for our [multiply sensory disabled] high school students who would have work placements and community activities in a typical school year."—*White female TVI*
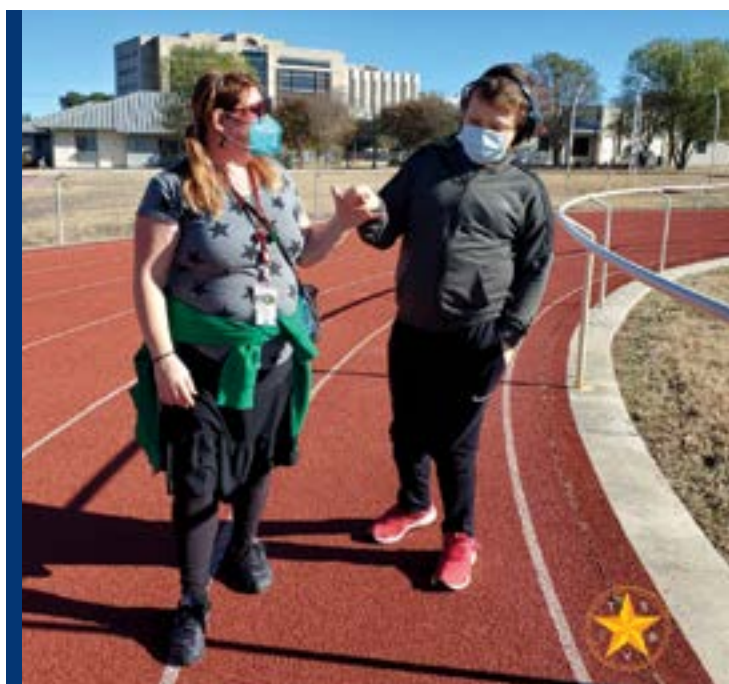
"It is a far cry from the regular school day, familiar routine to the current situation. [Online education] has had an extremely negative impact on special ed students with multiple disabilities who are unable to access the physical classroom. Many of them are only able to tolerate an hour or two (sometimes less) of virtual instruction on any given day. Still, it says on their IEP they are receiving the usual amount of hours of service. This is ridiculous."
—*White female O&M specialist*

- Mechanisms to monitor the impact of changes to IFSPs and IEPs are needed to ensure that students are not losing out on education as a result of changes. Both short-term and long-term plans must be developed that allow students to make up for lost progress and continue to build their skill set.

- Administrators and policymakers should recognize that service minutes do not equate to high-quality education delivery, especially when a student must have hands-on instruction to make learning gains.

- Policymakers and administrators must allocate financial resources and develop comprehensive guidelines that will enable school districts, specialized schools, and other educational agencies to provide services to students.

- Orientation and mobility instruction for students with additional disabilities or deafblindness necessitates hands-on learning. Clear guidance for O&M specialists, in addition to PPE, must be provided so that in-person O&M services can be delivered safely and effectively.

- Vision professionals must have access to the same PPE, testing, vaccine, and other COVID-19 mitigation resources as other educational professionals. Additionally, if vision professionals are providing in-person services to children in home- and community-based settings, these professionals may require these resources earlier and more often than professionals working from home.

- Funding should be available to ensure that educational team members, including paraprofessionals and intervenors, are able to work with students in person once it becomes safe to do so. This may require after-school or summer programming or an additional year in school to make up time for lost instruction when services were delivered online or not at all.

- PPE and other COVID-19 mitigation strategies (e.g., plexiglass barriers, cleaning procedures) must be put in place for in-person assessment and learning. COVID-19 safety procedures are even more essential when students are not able to understand or tolerate a mask.

- Administrators must provide sufficient time for vision professionals to re-evaluate or update assessments once in-person learning has fully resumed so that any changes or regression in students' skills can be documented and addressed. In many cases, students will need updated assessments ahead of the typical schedule.

- Any school re-opening guidance must include the needs of students who are blind or have low vision, including those with additional disabilities and deafblindness.

CHANGES TO IFSPS AND IEPS AS A RESULT OF THE PANDEMIC

"We have been discouraged from making many changes [to IEPs], and we have been asked to make do with what we can as best as we can. Students that have not been able to access their curriculum are not making gains. Restrictions to students on campus due to the pandemic are adversely affecting their programming in a very profound way."—*White female TVI*

According to participants in the *Access and Engagement II* study, many students had changes made to their IFSPs or IEPs as a result of the COVID-19 pandemic. Though the move to online education delivery models necessitated changes to IFSPs and IEPs in many cases, the long-term impact of these changes and their effectiveness must be examined carefully. Some changes to IFSPs and IEPs were not made based on student needs as determined through comprehensive assessments and a meeting of the full educational team. For some students, reduction in service time or change in delivery model was reported to have a negative impact on the student.

- Administrators must ensure that assessments necessary to develop or review IFSPs and IEPs occur in a timely manner even when school buildings are closed.

- Administrators should plan time to allow all educational team members to complete comprehensive assessments for students when they return to in-person learning.

- Assessment data collected online may not be comprehensive, and educational teams that made changes to IFSPs or IEPs using these data should consider reconvening to review updated assessment data and make any necessary changes.

- Students who are preparing for transition for the 2021-2022 school year (for example from early intervention to preschool or exiting school-age education) may require an additional year in their current placement. Administrators and educational team members should evaluate each student's circumstances individually to determine what is best for the student.

- Extended School Year (ESY) services may be necessary for some students who would not typically qualify for these services. Administrators and policymakers should evaluate their ESY criteria and make necessary adjustments based on the changes the pandemic has caused in education delivery during the 2020-2021 school year.

- Administrators should work with community partners to develop plans to have adequately trained personnel available to provide ESY services. In some instances, partnering with university programs that prepare education professionals may allow for university students to participate in practice or student teaching while providing extra staff to deliver ESY services.

- Policymakers and administrators must allocate additional funding to cover the expenses of providing ESY services to more students than are typically served in a school year.

PROVISION OF ORIENTATION AND MOBILITY INSTRUCTION

"I have had great success with working on the ECC virtually and relating those skills to O&M. Also, great success with using screen shares and Google Maps, looking up transportation info, etc. It is challenging in that I haven't been able to get all of my students physically to intersections and crossings that they need the hands-on practice on."—*White female O&M specialist*

The profession of O&M is a very hands-on service and the shift to providing O&M services online has been difficult both on professionals and students.

As many students have been limited in their ability to travel outside of their homes during the pandemic, the short-term and long-term impact on their travel skills must be assessed, documented and, when necessary, new goals developed.

• Administrators and policymakers must allocate additional funding and time to allow O&M specialists to work in person with students once it is safe to do so.

• O&M specialists need sufficient additional time to conduct assessments with all students to evaluate changes in their O&M skills as a result of less time in the community during the COVID-19 pandemic.

• For students who have experienced regression or have not progressed to the extent they would have during a typical school year, additional funding for O&M services must be allocated by administrators and policymakers to provide needed hands-on instruction in the community. School districts, specialized schools, and other educational agencies that limit instruction to the school day and campus environment may consider allowing instruction to occur off campus and outside the typical school day to make up necessary instruction.

• Some O&M specialists have developed ways to address foundational O&M skills through online instruction. Administrators and O&M specialists should collaborate to determine which of these methods can continue to be effective and safe even when in-person instruction is fully restored.

• During the pandemic, some family members and O&M specialists have developed strong relationships resulting in family members having a deeper understanding of the practice of O&M and how they can support their child's travel skills. Effective strategies developed during the pandemic should be maintained and shared with other families in the future.

• For students who will transition into a new school building when in-person instruction begins or at the start of the 2021-2022 school year, adequate time must be allocated for O&M specialists to orient students to the new environment.

• For students who are graduating or aging out of special education services, policymakers and administrators should consider providing additional O&M services, and other services as needed, to allow the student to achieve the same level of skills they would have had achieved had the pandemic not disrupted education so significantly.

CONTINUING TO BUILD ON SUCCESSES THAT HAVE RESULTED FROM THE COVID-19 PANDEMIC

Though it is easy to focus on the challenges the COVID-19 pandemic has created, there also have been successes that should be acknowledged and built upon.

"She has been getting specialized technology training 2–4 times a week for 5 years. Although her skills have improved greatly over that time, I feel like during this time of learning from home that finally all the skills are starting to come together in a way that she is better able to problem-solve solutions, know how to make more documents accessible on her own and digitally organize and manage her things independently. Because of the rush of the school days previously, it seemed that not all of this was clicking together in the past."
—White female family member of a child who is blind with additional disabilities, 16 to 18 years old

- Many students have had to quickly learn new technology skills during the pandemic. Policymakers and administrators must allocate time and funding to ensure that students continue to develop technology and associated skills that will allow them to succeed in school and post-secondary education and employment.

- Vision professionals must be provided opportunities to build their own technology skills and to continually update these skills as new technology tools become available.

- During the pandemic, opportunities were created for students engaged in online learning, to develop their ECC skills, especially in the area of independent living. Vision professionals and other educational team members must explore how they can increase students' independent living skills within the physical school environment and community.

- Some vision professionals shared that national, state, or regional groups provided them support during the pandemic. Groups such as the Texas School for the Blind and Visually Impaired Coffee Hour and webinars from the American Printing House for the Blind's Access Academy have helped professionals connect with others and learn new information. These types of professional development and team building opportunities should be supported by administrators and financial resources provided to continue them post-pandemic.

- School districts, specialized schools, and other educational agencies should develop mechanisms to leverage strategies developed during the pandemic that have enabled educational team members and family members to better understand the educational needs of students and how these can be addressed to ensure student growth and learning.

- Lessons vision professionals have developed and ways in which they have coached family members should continue post-pandemic.

"I have noticed my son striving to be more independent at home. He'll attempt to make his own food or retrieve things for himself. He's even learned to use his phone to zoom in on the environment when he is trying to find something that is not in its obvious typical location."—*White female family member of a child with low vision and additional disabilities, 13 to 15 years old*

- Vision professionals and family members reported they found benefits in getting to know each other better. Administrators, vision professionals, and other educational team members should seek out ways to strengthen home-school partnerships moving forward.

SUPPORTING THE MENTAL HEALTH AND SAFETY OF STUDENTS, FAMILIES, AND PROFESSIONALS

Acknowledging the stresses and ensuring we are all working together to provide holistic support to everyone is imperative now and as we move forward into delivering education post-pandemic.

"As a professional, COVID-19 has blurred the lines of work and personal life. It has been very easy to become overwhelmed with all of the online work, technology issues, and having to quickly teach student[s] new technology and programs that the district is trying to use that isn't accessible. It has also made the job of an itinerant increasingly isolating with online learning."—*Female TVI*

- Vision professionals and other educators need support from administrators to maintain a healthy work-home balance, maintain their productivity, and not burn out and leave the profession. Resources must be allocated to allow this to occur.

- Administrators should set the tone for all staff when it comes to mental health. Encourage staff members to check in with each other, make counseling available, and take time to acknowledge the stress most individuals are feeling.

- Policymakers, administrators, and community service providers must work together to address food insecurity, housing insecurity, and/or employment insecurity experienced by families. Without addressing these basic needs, families will not be able to focus on their child's education.

- Additional staff, including guidance counselors, psychologists, and social workers, must be available to students, families, and all educators both on a short-term and long-term basis as necessary.

- Administrators must allow vision professionals and other educational team members the flexibility to work remotely if they do not feel safe providing in-person instruction during the pandemic. At the same time, they need to provide as many mitigation efforts as possible to promote safe in-person instruction as educators need.

- Vision professionals and other educational team members should be supported in making efforts to bring students together to provide mutual support to each other and serve as roles models. Families may also appreciate the opportunity to meet with other families similar to their own or adult role models.

- Administrators and vision professionals may find opportunities to collaborate with consumer organizations such as the American Council of the Blind and the National Federation of the Blind beneficial. The members of these organizations can serve as role models, tutors, or in other capacities to support the education of students with visual impairments.

FINAL THOUGHTS

The *Access and Engagement II* study gathered data to answer the question:

In the fall of 2020, nine months into the COVID-19 pandemic, how is the education of students with visual impairments in the United States and Canada being impacted?

It is clear from the findings in this study that there is variability, both in the eyes of family members and vision professionals, in determining the impact of the COVID-19 pandemic on the education of any one child with a visual impairment, including children with additional disabilities and deafblindness. However, what is clear from the data is that many students, family members, and vision professionals were feeling stressed, overwhelmed, or anxious. The reasons for these feelings varied from the need to balance educational responsibilities with other responsibilities, the format of educational delivery not being appropriate to the learner's needs, to the lack of access and usability of digital learning tools. For professionals, having to develop ways to meet student needs while following employer policies was often a challenge as were accessing materials for themselves and their students.

The short-term and long-term impacts of the pandemic should be evaluated both for individual children and in determining the way forward in providing all children with visual impairments an individualized, appropriate, education while also ensuring their social-emotional well-being. Family members, vision professionals, other educators, administrators, and policymakers must work collaboratively to ensure that students' basic needs are met, their skills do not regress, and they do not miss out on the opportunity to learn. At the same time, the lessons learned from this historical time in education can be used as we all reflect on how the future of education will continue to evolve, including the importance of ensuring students have the technology skills needed to obtain post-secondary education and to join the workforce.

"I am the parent of a blind child and certified as a TVI but working as a Superintendent at a school for the blind. I feel like this has been a very difficult time for our students and that remote learning is inaccessible to many without 100% parental/family support. [Remote learning] is specifically challenging for young students and those with multiple disabilities. I think data like this survey is critical because gaps identified during the pandemic will be relevant in years to come. With an ever-increasing digital component to employment, the pandemic very much models many job opportunities for our students."—*White female family member of a child who is blind with additional disabilities, 13 to 15 years old*

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