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Remote Learning for K-12 Schools During the COVID-19 Pandemic

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In response to the COVID-19 pandemic, most elementary and secondary schools and local educational agencies (LEAs) across the United States closed schools in February or March 2020. By the middle of April 2020, 48 states, four U.S. territories, the District of Columbia, and the Department of Defense Education Activity ordered or recommended school building closures for the rest of the school year, affecting at least 50.8 million public school students. The affected states and LEAs then began pivoting to alternative modes of instruction and methods for providing other services, including school meals and counseling services.

Most methods utilized by schools and LEAs to continue providing instruction to students during the pandemic involved some components of distance, or remote, learning, which may include synchronous (i.e., live) or asynchronous (i.e., prerecorded) virtual lessons delivered over the internet (online learning); physical learning materials, such as paper packets; or some combination of these approaches. According to the National Survey of Public Education's Response to COVID-19 carried out by the American Institutes for Research (AIR), in spring 2020, 34% of LEAs at the K-5 level used physical learning materials as the primary means of instruction during the pandemic, while 46% of LEAs used online learning as their primary means of delivering instruction. Over the course of the 2020-2021 school year, some schools eventually transitioned from remote-only instruction to some hybrid approach involving a combination of remote and in-person learning, or to full-time in-person learning. In May 2021, nearly 80% of students were still being offered a remote-only option for receiving instruction.

As many LEAs pivoted to remote learning as their primary method of instruction soon after closing down their physical school buildings, a number of issues related to remote and online learning were raised by practitioners and experts. These include concerns about

- the *digital divide*, or inequity in access to the internet and devices necessary for participation in online learning;
- the quality of online instruction and learning and the learning loss that may occur in comparison with in-person instruction;
- difficulty in assessing student achievement and academic progress in a remote learning environment;
- inadequate access to additional services provided by schools, including targeted services for children with disabilities, English learners, and students experiencing homelessness; and
- online privacy and increased cybersecurity concerns associated with online learning.

Additionally, given the abundance of research on COVID-19 and the deployment of highly effective vaccines to help protect those able to receive them, schools and districts are now considering how to approach the 2021-2022 school year. Some of the issues they may be considering are whether it is safe to reopen schools full-time for all students, whether to continue the use of remote instruction in some way or for some students, how to improve online instruction and address any potential learning loss amongst students, and whether there is federal support to continue the use of online learning.

To support the transition to, improve student access to, and enhance the quality of remote learning, states and LEAs can rely on several sources of federal funding, including funding under the Elementary and Secondary Education Act of 1965 and the School and Libraries program, commonly referred to as E-Rate and funded through the Federal Communications Commission's (FCC's) Universal Service Fund. Additionally, in response to the pandemic, Congress enacted the Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136) and the Coronavirus Response and Relief Supplemental Appropriations Act, 2021 (Division M of P.L. 116-260) in 2020, and the American Rescue Plan Act (ARPA; P.L. 117-2) in 2021. These laws include funding for elementary and secondary education that can be used by states and LEAs for purchasing technology for online learning for all students and for purchasing educational technology that aids in the interaction between students and their classroom instructors.

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Introduction

In response to the COVID-19 pandemic, most elementary and secondary schools and local educational agencies (LEAs) across the United States stopped offering in-person instruction in February or March 2020. By the middle of April 2020, 48 states, four U.S. territories, the District of Columbia, and the Department of Defense Education Activity ordered or recommended school building closures for the rest of their academic year, affecting at least 50.8 million public school students.[1] The affected states and LEAs had to pivot to alternative methods of offering instruction and providing other services, including school meals and counseling services. Congress has expressed interest in the impact of the pandemic on elementary and secondary schools, especially states' and LEAs' ability to successfully transition to remote learning, as well as the extent to which schools have implemented returns to in-person learning.

Most approaches initially utilized by schools and LEAs to continue providing instruction to students during the pandemic involved components of distance, or remote, learning, which may include synchronous (i.e., live) or asynchronous (i.e., prerecorded) virtual lessons delivered over the internet (online learning); physical learning materials, such as paper packets; or some combination of these approaches. According to the National Survey of Public Education's Response to COVID-19 carried out by the American Institutes for Research (AIR), 34% of LEAs at the K-5 level used physical learning materials as the primary means of instruction during spring 2020, while 46% of LEAs used online learning as their primary means of delivering instruction. Notably, 48% of high-poverty LEAs relied primarily on physical learning materials, compared to 16% of low-poverty LEAs.[2] According to the same survey, 39% of high-poverty LEAs relied primarily on online learning, compared to 56% of low-poverty LEAs.[3] Over the course of the 2020-2021 school year, some schools eventually transitioned from remote-only instruction to some hybrid approach involving a combination of remote and in-person learning, or to full-time in-person learning. In May 2021, nearly 80% of students were still being offered a remote-only option for receiving instruction.[4]

The ramp-up to online learning took place on a mass scale at the start of the pandemic in spring 2020. As many LEAs pivoted to online learning as their primary method of instruction soon after closing down their physical school buildings, a number of initial issues were raised by practitioners and experts. These included concerns about inequity of access to resources to participate in online learning, the quality of instruction and learning during the pandemic, and online privacy and cybersecurity concerns. The return to full-time in-person instruction is likely imminent in many settings, which may be the preference for many students and families; the availability of a remote-only learning option may continue to be the preference for other students and families. Circumstances in the future may once again require schools to pivot to an online-

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[1] Montana and Wyoming were the only states not to order school closures for the remainder of the academic year. Source: https://www.edweek.org/leadership/the-coronavirus-spring-the-historic-closing-of-u-s-schools-a-timeline/ 2020/07.

[2] AIR used U.S. Census data and the U.S. Department of Education's Common Core of Data to characterize the poverty status of each LEA. They defined low-poverty LEAs as those with less than 10% of school-age children living in poverty and high-poverty LEAs as those with at least 20% of school-age children in poverty.

[3] More information about survey methodology and results can be found at https://www.air.org/sites/default/files/ COVID-Survey-Approaches-to-Remote-Instruction-FINAL-Oct-2020.pdf.

[4] See the Monthly School Survey Dashboard, administered by the Institute of Education Sciences and available at https://ies.ed.gov/schoolsurvey/.

only learning environment. Understanding the primary concerns with providing instruction exclusively online can help schools develop an adequate infrastructure to deliver education through such means and make the transition to online learning more manageable in the future should circumstances require it.

As of the cover date of this report, these issues continue to dominate public and congressional discussions about the impact of the pandemic on elementary and secondary schools and the discussion surrounding a safe return to full-time in-person learning. Many school districts have utilized a variety of approaches since the start of the pandemic to provide education to their students: exclusively serving students through remote instruction, transitioning to full-scale in-person instruction five days a week, or implementing a hybrid approach that utilizes both remote and in-person instruction. Additionally, many schools may have had to revise those approaches in the event that a COVID-19 outbreak occurred at a school, requiring it to shut down to allow for proper quarantining.

About This Report

This report focuses on online learning in elementary and secondary schools during the COVID-19 pandemic and on the most emergent issues associated with the implementation of online learning on a mass scale that took place at the start of the pandemic in spring 2020. It also describes the issues faced by school districts as they consider approaches for providing instruction in the 2021-2022 school year. Finally, it delineates federal efforts to provide assistance to support states and localities dealing with these issues.

It is beyond the scope of this report to evaluate the efficacy of the numerous approaches attempted by schools to provide instruction adequately during the pandemic. Additionally, some students ordinarily access onsite services that are not related to the provision of instruction, such as free and reduced-priced lunches and school breakfasts and mental and health services. When schools close and transition to a remote learning environment, students may not be able to access such services; those issues are outside the scope of this report.[5] Further, some parents may face challenges with managing their children's learning while working a full-time job, regardless of whether parents are essential workers without remote work options or are able to do their jobs remotely. This report also does not attempt to describe the issues faced by parents to provide their children with a suitable learning environment. Finally, the report does not attempt to assess broader health-related considerations associated with school reopenings.

Because the pandemic is ongoing, there is a lag in data reporting, especially with respect to student achievement and learning loss. Further, because schools shift from remote to in-person instruction and back, given their particular circumstances, data on school reopenings constantly change in real time. The data contained in this report are the most recent available as of its cover date.

Access to the Internet and Devices Prior to the Pandemic

For students to fully engage in online learning, access at home to the internet and a *device* that enables internet use (e.g., desktop computer, laptop computer, tablet, smartphone) is necessary. Based on National Center for Education Statistics (NCES) survey data of home internet users

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[5] For general information on federal school nutrition programs, see CRS Report R46234, *School Meals and Other Child Nutrition Programs: Background and Funding*.

between the ages of 3 and 18 in 2017, 86% had home internet access.[6] Means for accessing the internet included high-speed internet installed at home (88%), mobile internet service or a data plan (92%), satellite internet service (5%), dial-up service (1%), or some other service (1%).[7] Additionally, 97% had access to some type of device, which included a desktop or laptop (83%), tablet or other portable device or computer (78%), or a smartphone (94%).[8]

Access to the internet and a device vary by characteristics of a child and the child's household, including race and household income. For example, according to the NCES survey data, fewer Black (84%), Hispanic (85%), and American Indian/Alaska Native (83%) children had access to high-speed internet installed at home when compared to White children (90%).[9] Additionally, fewer children in the lowest-income households (72%) had access to high-speed internet than children in the highest-income households (94%).[10] These trends persisted concerning access to a desktop, laptop, tablet, or other portable wireless computer: fewer Black (82%), Hispanic (84%), and American Indian/Alaska Native (75%) children had access to some type of computer when compared to White children (94%).[11] Fewer children in the lowest-income households (68%) had access to some type of computer than children in the highest-income households (98%).[12]

According to the NCES survey data, among the reasons for households lacking internet access, 43% reported not needing or being interested in it and 34% reported not being able to afford it.[13] Those statistics varied by household characteristics such as race and income. Fewer White households reported not having internet access due to affordability than Black and Hispanic households.[14] Likewise, fewer high-income households reported not having internet access due to affordability than low-income households.[15]

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[6] U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, Table 702.40. "Percentage of persons age 3 and over and ages 3 to 18 with no internet access at home and percentage distribution of those with no home access, by main reason for not having access and selected characteristics: 2010 and 2017," https://nces.ed.gov/programs/digest/d18/tables/dt18_702.40.asp?current=yes (hereinafter, "NCES Table 702.40, Percentage of people with no internet access at home").

[7] U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, Table 702.35. "Percentage of home internet users age 3 and over and ages 3 to 18, by means of internet access from home and selected characteristics: 2010 and 2017," https://nces.ed.gov/programs/digest/d18/tables/dt18_702.35.asp?current=yes (hereinafter, "NCES Table 702.35, Percentage of home users by means of internet access"). These categories are not mutually exclusive—a household may have to more than one way of accessing the internet. No information was provided about what "some other service" included.

[8] U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, Table 702.10. "Percentage of children ages 3 to 18 living in households with a computer, by type of computer and selected child and family characteristics: Selected years, 2010 through 2017," https://nces.ed.gov/programs/digest/d18/tables/dt18_702.10.asp?current=yes (hereinafter, "NCES Table 702.10, Percentage of children in households with a computer"). These categories are not mutually exclusive—a household may have access to more than one connected device.

[9] NCES Table 702.35, Percentage of home users by means of internet access.

[10] NCES Table 702.35, Percentage of home users by means of internet access. Lowest-income households are those with an annual income of less than $10,000, while highest-income households earn an annual income of greater than $100,000.

[11] NCES Table 702.10, Percentage of children in households with a computer.

[12] NCES Table 702.10, Percentage of children in households with a computer. Lowest-income households are those households with an annual income of less than $10,000, while highest-income households earn an annual income of greater than $100,000.

[13] NCES Table 702.40, Percentage of people with no internet access at home.

[14] NCES Table 702.40, Percentage of people with no internet access at home.

[15] NCES Table 702.40, Percentage of people with no internet access at home.

Education Services and Access at the Start of the Pandemic

Faced with the sudden onset of the pandemic in spring 2020, many LEAs made decisions about how to continue the provision of education with an eye toward preventing the spread of COVID-19 within their communities. Some LEAs chose to shutter schools, either transitioning to remote education or not, and others kept schools open. Further, those LEAs that did transition to some type of remote instruction implemented it in varied ways.

The U.S. Census Bureau conducted Household Pulse Surveys starting April 23, 2020, to measure education experiences, among other things, over the course of the pandemic.[16] **Table 1** presents a CRS analysis of these survey data from April 23, 2020, through May 26, 2020—the period when the vast majority of LEAs closed school buildings and shifted to some version of remote learning.[17] Fewer Black, Hispanic/Latino, and low-income individuals reported their children's classes being moved to distance learning using online resources relative to their White and high-income counterparts, respectively. Additionally, higher rates of Black, Hispanic/Latino, and low-income individuals reported that their children's classes were canceled altogether relative to their White and high-income counterparts, respectively.

Household Pulse Survey data also indicated that around 70% of all households with children in schools always had a device or internet available for educational purposes; the same could be said for fewer than 60% of households with incomes of less than $25,000. Schools or school districts provided 37% of households with a computer or digital device to be used outside of school during this time.[18]

Table 1. Method in Which Children Attending Public or Private School Received Education, and Computer and Internet Availability in Households with Children in Public or Private School, by Selected Characteristics: April 23 through May 26, 2020

	Classes Moved to Distance Learning Using Online Resources[a]	Classes Moved to Distance Learning Using Paper Materials[a]	Classes Were Canceled[a]	Classes Changed in Some Other Way[a]	Schools Did Not Close[a]	Device Always Available for Educational Purposes	Internet Always Available for Educational Purposes
Total	73%	21%	41%	4%	0.4%	69%	71%
Race/Ethnicity							
Hispanic or Latino (may be of any race)	69%	18%	45%	4%	0.3%	65%	68%
White alone, not Hispanic	76%	22%	39%	3%	0.3%	72%	74%

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[16] U.S. Census Bureau Household Pulse Surveys in 2020 for Weeks April 23-May 5, May 7-May 12, May 14-May 19, May 21-May 26. Data from these surveys are available at https://www.census.gov/programs-surveys/household-pulse-survey/data.html.

[17] These estimates were produced using U.S. Census Bureau Household Pulse Survey data in 2020 for Weeks April 23-May 5, May 7-May 12, May 14-May 19, May 21-May 26. Survey data from each of the weeks were summed to get totals for the entire period. These totals were then used to calculate percentages for each column and row.

[18] U.S. Census Bureau Household Pulse Surveys in 2020 for Weeks April 23-May 5, May 7-May 12, May 14-May 19, May 21-May 26. Data from these surveys are available at https://www.census.gov/programs-surveys/household-pulse-survey/data.html.

	Classes Moved to Distance Learning Using Online Resources[a]	Classes Moved to Distance Learning Using Paper Materials[a]	Classes Were Canceled[a]	Classes Changed in Some Other Way[a]	Schools Did Not Close[a]	Device Always Available for Educational Purposes	Internet Always Available for Educational Purposes
Black alone, not Hispanic	65%	22%	48%	5%	0.5%	64%	65%
Income							
Less than $25,000	59%	23%	53%	6%	0.7%	55%	56%
$25,000-$34,999	64%	25%	47%	4%	0.2%	56%	61%
$35,000-$49,999	68%	22%	45%	5%	0.3%	63%	67%
$50,000-$74,999	73%	24%	42%	4%	0.3%	70%	70%
$75,000-$99,999	80%	19%	40%	3%	0.4%	76%	80%
$100,000-$149,999	83%	19%	34%	3%	0.3%	82%	83%
$150,000-$199,999	87%	17%	34%	3%	0.2%	84%	86%
$200,000 and above	88%	17%	32%	2%	0.7%	89%	90%

Source: CRS analysis of U.S. Census Bureau Household Pulse Surveys in 2020 for Weeks April 23-May 5, May 7-May 12, May 14-May 19, May 21-May 26. Data from these surveys are available at https://www.census.gov/programs-surveys/household-pulse-survey/data.html.

Notes: The specific time period used in this table was selected because it reflects the time when most LEAs were making their initial decisions about alternative approaches to providing instruction in the wake of the COVID-19 pandemic. Households surveyed were identified from the Census Bureau's Master Address File and had both a known email address and phone number. Respondents were 18 years or older and lived in a household with children who were enrolled in public or private school.

a. These categories are not mutually exclusive. A household could select any that apply, meaning that in the last seven days, a child or children living in the household and enrolled in school could have received education by multiple delivery methods. It is not clear from available documentation whether such methods applied to all of the child's or children's classes.

Overview of School Reopening Plans

After the mass closing of school buildings and elementary and secondary schools in response to the COVID-19 pandemic in spring 2020, schools, LEAs, and states took a variety of approaches to reopening schools and resuming instruction for the fall 2020 semester. These approaches included the following:

- full-time in-person instruction (meeting with teachers in-person five days a week);
- exclusive online instruction (schools remaining closed and no in-person instruction); and
- hybrid learning, which includes some combination of in-person and remote instruction. For example, students may receive in-person instruction two days a week and online instruction three days a week, or groups of students may alternate when they are in school for in-person instruction and when they are at home for online instruction. In some cases, teachers may be providing instruction to students both in-person and online at the same time.

In many cases, LEAs have needed to change their approaches multiple times, including shifting from in-person to fully remote learning during periods of increased COVID-19 incidence in their areas. For many schools, at some juncture, students were offered the option to return to full-time in-person instruction or to receive exclusively online instruction, based on family preferences.

As of the cover date of this report, there was no single authoritative and comprehensive resource on school reopening plans. Some publications and organizations have attempted to present school reopening trackers that provide a snapshot of LEA and state approaches. EducationWeek, for example, collected data (last updated October 2020) on over 900 LEAs and reported information on their initial reopening plans.[19]

Some findings from EducationWeek's survey are as follows:

- 74% of the 100 largest LEAs chose remote learning only as their back-to-school instructional model, affecting over 9 million students;
- almost half (49%) of all LEAs opened with remote learning;
- hybrid instruction was used in 27% of LEAs;
- full in-person instruction was available to all students in 24% of LEAs; and
- almost a quarter (24%) of LEAs delayed the start of the school year.

Both EducationWeek and the Center for Reinventing Public Education (CRPE) have state-level tracking tools that have been reporting, and updating, each state's reopening plans and any changes to student learning models implemented or recommended for the 2020-2021 school year. According to CRPE data, as of July 2020, 15 states had *required* LEAs to plan for reopening with a remote learning option and an additional 34 states *recommended* that LEAs plan on incorporating remote learning into their reopening plans.[20] EducationWeek's state-level database of school closures reported that, as of May 21, 2021, 14 states had ordered that in-person instruction be provided in all or some grades full-time.[21]

Pursuant to President Biden's Executive Order 14000 on Supporting the Reopening and Continuous Operation of Schools and Early Childhood Education Providers,[22] in February 2021 NCES began collecting data on LEA operating statuses and the modes of instruction being offered to students.[23] These data are collected for students in 4th and 8th grades from a nationally representative sample of public schools. In May 2021 (the most recently available data), among schools with 4th and 8th grade students,

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[19] EducationWeek's methodology states that the survey included 907 LEAs, including the 100 largest ones in the United States. It also included at least five LEAs in each state that has at least five LEAs. The survey did not track changes in LEA status after classes began. These data do not represent a nationally representative sample of LEAs and are skewed towards large, urban LEAs. The data were last updated on October 16, 2020, and can be accessed at https://www.edweek.org/leadership/school-districts-reopening-plans-a-snapshot/2020/07.

[20] The CRPE database on state guidance related to school reopening can be accessed at https://www.crpe.org/current-research/state-responses-covid-19. CRPE analysis of its findings is available at https://www.crpe.org/thelens/states-must-take-decisive-action-avert-coming-education-crisis.

[21] EducationWeek's database of school closures can be accessed at https://www.edweek.org/leadership/map-where-are-schools-closed/2020/07. For the large majority of states, decisions to reopen schools were left up to the school districts. For Delaware, Hawaii, the District of Columbia, and Puerto Rico, states have required that in-person instruction only be provided if certain conditions were met, including the availability of space.

[22] Executive Order 14000 was issued on January 21, 2021. The full text is available at https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/21/executive-order-supporting-the-reopening-and-continuing-operation-of-schools-and-early-childhood-education-providers/.

[23] See the Monthly School Survey Dashboard, administered by the Institute of Education Sciences and available at https://ies.ed.gov/schoolsurvey/.

- 98% of schools were open for hybrid or some type of full-time in-person learning, while 2% of schools offered only remote or online instruction; 63% were open full-time in-person for all students;
- for 4th graders only, 79% had remote learning available as an option, 40% had hybrid learning as an option, and 63% had 100% in-person learning available; and
- for 8th graders only, 80% had remote learning as an option, 45% had hybrid learning available, and 58% had 100% in-person learning available.

These data varied greatly by state, especially with respect to in-person instruction. For example, 100% of Florida's 8th graders had in-person learning available to them, compared with 18% of Maryland's 8th graders.

Table 2 presents a CRS analysis of Household Pulse Survey data from April 28, 2021, through May 24, 2021—this period includes some of the most recently available data (there are data available from May 26, 2021–June 7, 2021) and is roughly one year after the period referenced in **Table 1**.[24]

Relative to 2020, these 2021 data suggest that some trends in the receipt of online instruction have reversed: fewer White children and children from high-income households, and more Black and Latino children and children from low-income households, received online instruction. As with findings from prior-year survey data, more recent data also suggest disparities among subgroups in modes of instruction implemented. For example, more White and high-income individuals reported their children receiving in-person instruction at school relative to their Black and Latino and low-income counterparts, respectively. Finally, compared to 2020, in 2021 the use of paper materials as a means for delivering instruction seemed significantly less prevalent.

Household Pulse Survey data also indicated that around 80% of all households with children in schools always had a device or internet available for educational purposes, which was up from approximately 70% the previous year; however, disparities still existed across households when factoring in income.

Table 2. Method in Which Children Attending Public or Private School Received Education, and Computer and Internet Availability in Households with Children in Public or Private School, by Selected Characteristics: April 28 through May 24, 2021

	Received In-Person Instruction at School[a]	Received Virtual/ Online Instruction[ab]	Received Instruction Using Paper Materials[ac]	Other[ad]	Device Always Available for Educational Purposes	Internet Always Available for Educational Purposes
Total	63%	68%	6%	8%	81%	80%
Race/Ethnicity						
Hispanic or Latino (may be of any race)	45%	78%	5%	6%	79%	74%

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[24] These estimates were produced using U.S. Census Bureau Household Pulse Survey data in 2021 for Weeks April 23-May 5, May 7-May 12, May 14-May 19, May 21-May 26. Survey data from each of the weeks were summed to get totals for the entire period. These totals were then used to calculate percentages for each column and row. Schools are generally in session at this time, as in some areas, the 2020-2021 school year may have concluded after Memorial Day.

	Received In-Person Instruction at School[a]	Received Virtual/ Online Instruction[ab]	Received Instruction Using Paper Materials[ac]	Other[ad]	Device Always Available for Educational Purposes	Internet Always Available for Educational Purposes
White alone, not Hispanic	74%	60%	7	9%	82%	82%
Black alone, not Hispanic	50%	79%	5%	6%	82%	79%
Income						
Less than $25,000	51%	73%	6%	7%	72%	70%
$25,000-$34,999	55%	76%	5%	7%	75%	71%
$35,000-$49,999	58%	68%	5%	6%	80%	75%
$50,000-$74,999	63%	71%	6%	8%	83%	80%
$75,000-$99,999	67%	68%	8%	7%	85%	84%
$100,000-$149,999	72%	66%	6%	10%	87%	87%
$150,000-$199,999	73%	66%	7%	10%	92%	92%
$200,000 and above	73%	70%	7%	11%	90%	92%

Source: CRS analysis of U.S. Census Bureau Household Pulse Surveys in 2021 for Weeks April 28-May 10 and May 12-May 24. Data from these surveys are available at https://www.census.gov/programs-surveys/household-pulse-survey/data.html.

Note: This specific time period includes some of the most recently available data (there are data available from May 26, 2021–June 7, 2021) and is roughly one year after the time period referenced in **Table 1**. Households surveyed were identified from the Census Bureau's Master Address File and had both a known email address and phone number. Respondents were 18 years or older and lived in a household with children who were enrolled in public or private school.

a. These categories are not mutually exclusive. A household's respondent could select any that apply, meaning that in the last seven days, a child or children living in the household and enrolled in school could have received education by multiple methods of delivery. It is not clear from available documentation whether such method applied to all of the child's or children's classes.

b. This category includes respondents in households with a child or children who received virtual/online instruction from a teacher in real time or learned on their own using online materials provided by their school.

c. This category includes respondents in households with a child or children who learned on their own using paper materials provided by their school.

d. This category includes respondents in households with a child or children who learned on their own using materials that were not provided by their school, did not participate in any learning activities because their school was closed, were sick and could not participate in education, or had something else as an issue.

Selected Issues

This section of the report covers some of the issues that have been prevalent in the public and academic discussions surrounding the transition from in-person to remote learning in elementary and secondary schools in response to the COVID-19 pandemic. The section begins by focusing on equity with respect to student access to online learning. It then discusses the quality of instruction and learning during the pandemic, as well as privacy and cybersecurity concerns inherent to delivering instruction via the internet.

Digital Divide

One of the main issues with transitioning to an online learning environment is what has been referred to as the *digital divide*. This is the gap between those families who have access to the resources to be able to fully engage in an online learning environment and those families who lack access to the means to fully participate in online learning. This digital divide presents in two ways: (1) lack of access to adequate internet services such as high-speed internet and (2) lack of access to devices to enable internet use. These issues are discussed in greater detail in the following sections.

Lack of Access to Adequate Internet Services

Lack of adequate access to internet services may impact a student's ability to engage in online learning consistently or completely at home. Prior to the pandemic, many students did not have internet access at home to complete homework assignments, which has been referred to as the *homework gap*.[25] According to the Federal Communications Commission (FCC), 18.2 million Americans lacked an internet connection of download/upload speeds of at least 25 Megabytes per second (Mbps)/3 Mbps in 2017.[26] A Pew Research Center analysis of 2015 U.S. Census Bureau data found that 15% of U.S. households with school-age children did not have a high-speed internet connection at home.[27]

The homework gap is more pronounced for low-income students, students of color, and students who live in rural communities. For example, according to another Pew Research Center analysis of 2015 U.S. Census Bureau data, 35% of households with children ages 6 to 17 and an annual income of $30,000 or below did not have a high-speed internet connection compared to 6% of households with an annual income of $75,000 or above.[28] That same analysis also found that 25% of households with children ages 6 to 17 with a Black head of household and 23% of households with a Hispanic head of household did not have access to high-speed internet compared to 10% of households with a White head of household.[29] CRS analysis of the Household Pulse Survey data presented in **Table 1** suggests similar trends in internet access at the start of the pandemic. More recent data presented in **Table 2** suggest that at-home internet access has improved for more vulnerable groups (see the "Education Services and Access at the Start of the Pandemic" section), and while disparities still existed, they seemed to be smaller. The Household Pulse Survey data did not include information on internet quality.

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[25] Pew Research Center Fact Tank, "As schools close due to the coronavirus, some U.S. students face a digital 'homework gap,'" March 16, 2020, available at https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/.

[26] Federal Communications Commission *2020 Broadband Deployment Report,* FCC 20-50, April 2020, available at https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf. The FCC has identified 25 Mbps/3 Mbps as sufficient download/upload speed benchmarks for providing "advanced telecommunications capability."

[27] Pew Research Center Fact Tank, "As schools close due to the coronavirus, some U.S. students face a digital 'homework gap,'" March 16, 2020, available at https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/.

[28] Pew Research Center Fact Tank, "Nearly one-in-five teens can't always finish their homework because of the digital divide," October 26, 2018, available at https://www.pewresearch.org/fact-tank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-because-of-the-digital-divide/.

[29] Pew Research Center Fact Tank, "Nearly one-in-five teens can't always finish their homework because of the digital divide," October 26, 2018, available at https://www.pewresearch.org/fact-tank/2018/10/26/nearly-one-in-five-teens-cant-always-finish-their-homework-because-of-the-digital-divide/.

Lack of or insufficient internet access may have occurred for several reasons: a household may not have been able to afford internet services or may have had a disruption in internet services because of falling behind on payments, a community may have lacked the infrastructure to provide high-speed internet consistently or at all, or households may have relied on internet access through cellular data usage, which could be limited each month. There may also have been challenges with sufficient bandwidth if multiple household members tried to access the internet at the same time.[30] Additionally, students who lacked internet access at home may have needed to go elsewhere to utilize public Wi-Fi in order to complete schoolwork.

For example, among children ages 3 to 18 who did not have access to the internet in 2017, 34% did not because their households could not afford it. These percentages were significantly higher for Black and Hispanic/Latino children and children in households with incomes of less than $30,000.[31] Additionally, according to the FCC, roughly 22% of Americans living in rural areas and 28% of individuals living in Tribal areas lacked access to high-speed broadband infrastructure.[32] According to a survey conducted by the National 4-H Council and Microsoft, 20% of youth ages 13 to 19 living in rural communities lacked access to high-speed internet and almost half struggled to complete homework assignments due to a slow internet connection.[33] A 2018 Pew Research Center survey of U.S. teens found that one-quarter of Black teens and just over 20% of teens in households earning less than $30,000 went outside of the home to use public Wi-Fi to do homework compared to 11% of White teens and 7% of teens in households earning $75,000 or more.[34]

As school districts continuously navigate the decision to reopen schools, to maintain remote learning on a full-time basis, or to use a hybrid approach, one consideration is the effects of inadequate access to high-speed internet on students' ability to complete work and, over the long term, the effects of that on student learning. As online learning continues, these effects may be exacerbated for low-income students, students of color, and rural students who are more likely to face barriers to sufficient internet access.[35]

Inadequate Access to Devices

Even if a household has reliable internet, children may not have adequate access to a device in their home to receive instruction, which could present challenges to fully engaging in instruction.

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[30] Sumit Chandra, Amy Chang, and Lauren Day et al., *Closing the K–12 Digital Divide in the Age of Distance Learning*, Common Sense Media, Boston Consulting Group, San Francisco, CA, and Boston, MA, 2020, https://www.commonsensemedia.org/sites/default/files/uploads/pdfs/common_sense_media_report_final_6_26_7.38am_web_updated.pdf.

[31] NCES Table 702.40, Percentage of people with no internet access at home.

[32] Federal Communications Commission *2020 Broadband Deployment Report,* FCC 20-50, April 2020, available at https://docs.fcc.gov/public/attachments/FCC-20-50A1.pdf.

[33] 4-H Council, *New Survey Finds Teens Without Access to High-Speed Internet Are Less Likely to Believe They Can Achieve the American Dream,* March 24, 2020, available at https://4-h.org/media/new-survey-finds-teens-without-access-to-high-speed-internet-are-less-likely-to-believe-they-can-achieve-the-american-dream/.

[34] Pew Research Center Fact Tank, "As schools close due to the coronavirus, some U.S. students face a digital 'homework gap,'" March 16, 2020, available at https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/.

[35] Sumit Chandra, Amy Chang, and Lauren Day et al., *Closing the K–12 Digital Divide in the Age of Distance Learning*, Common Sense Media, Boston Consulting Group, San Francisco, CA, and Boston, MA, 2020, https://www.commonsensemedia.org/sites/default/files/uploads/pdfs/common_sense_media_report_final_6_26_7.38am_web_updated.pdf.

Inadequate access to a device may occur for several reasons. Households may not be able to afford a PC, laptop, tablet, or smartphone. If a device is present, only one may be available per household with more than one school-aged child, and other children or a teleworking parent may have need for it. Additionally, prior to the pandemic many students may have relied on accessing publicly available computers at a library or community center to complete any assignments requiring the use of a connected device. According to the 2018 Pew Research Center survey, 12% of U.S. teens did not have access to a desktop or laptop computer.[36]

As with access to high-speed internet, inadequate access to devices seems to disproportionately impact low-income students and students of color. The Pew Research Center survey found that prior to the pandemic, 25% of teens in households earning less than $30,000 per year and 18% of Hispanic teens did not have access to a desktop or laptop computer versus 4% of teens in households earning more than $75,000 per year and 9% of White teens.[37]

CRS analysis of the Household Pulse Survey data presented in **Table 1** presents similar trends in access to a device at the start of the pandemic (see the "Education Services and Access at the Start of the Pandemic" section). Further, a ParentsTogether[38] survey of its 1,500 members across the country suggested that 32% of households earning less than $25,000 per year did not have a device or their school-aged children had to share a device amongst siblings, compared to fewer than 10% of households earning more than $100,000 per year.[39] However, similar to internet access, more recent Household Pulse Survey data presented in **Table 2** suggest that device access had also improved for more vulnerable groups and that racial disparities have become nearly nonexistent.

The challenge to providing adequate instruction via online learning is not limited to ensuring that students have access to reliable internet services; it includes ensuring that students have an adequate device. While some students have challenges with either connecting to the internet or accessing a device, for the majority of students who face these challenges, it is because they lack access to both the internet and a device.[40] The data presented in this and previous sections suggest that both challenges may disproportionately impact low-income students and students of color, which could also more negatively affect their learning.

Quality of Instruction and Learning During the Pandemic

In many school districts, the transition to an online learning environment happened rapidly as COVID-19 cases began to rise. Teachers, along with students, needed to acclimate to a new instructional environment. Additionally, as the pandemic has endured and schools toggle between

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[36] Pew Research Center Fact Tank, "As schools close due to the coronavirus, some U.S. students face a digital 'homework gap,'" March 16, 2020, available at https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/.

[37] Pew Research Center Fact Tank, "As schools close due to the coronavirus, some U.S. students face a digital 'homework gap,'" March 16, 2020, available at https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/.

[38] ParentsTogether is a nonprofit organization that covers research, policies, and trends related to issues that affect children and families.

[39] ParentsTogetherAction, "ParentsTogether Survey Reveals Remote Learning is Failing Our Most Vulnerable Students," available at https://parentstogetheraction.org/2020/05/27/parentstogether-survey-reveals-remote-learning-is-failing-our-most-vulnerable-students-2/.

[40] Sumit Chandra, Amy Chang, and Lauren Day et al., *Closing the K–12 Digital Divide in the Age of Distance Learning*, Common Sense Media, Boston Consulting Group, San Francisco, CA, and Boston, MA, 2020, https://www.commonsensemedia.org/sites/default/files/uploads/pdfs/common_sense_media_report_final_6_26_7.38am_web_updated.pdf.

different modes of instruction, school districts continue to determine the best strategies to support teachers and student learning in these various alternative learning environments, including online delivery of instruction. Some of the primary issues that have emerged related to quality of instruction and learning are (1) teacher training and supports in delivering online instruction, (2) learning loss and (3) inadequate access to targeted educational services provided in schools.

Teacher Training and Support in Delivering Online Instruction

When the President declared the COVID-19 pandemic to be a national emergency, states and school districts directed their schools to close their doors months before the end of the school year and most had to make a rapid and significant pivot to online learning lacking a robust plan to do so. Some teachers did not have the necessary training or experience to operate virtual platforms, deliver instruction remotely, and ensure students were fully engaged in learning online. According to a USA Today/Ipsos poll of teachers in May 2020, 83% said they were struggling to do their jobs. Two-thirds said that they had not been able to do their job properly since starting to teach remotely—and most of these said that the district did not prepare them well to do so.[41] Survey data of teachers in August 2020 from FutureEd suggested that veteran teachers struggled with providing instruction online more than other teachers: about 13% of teachers with 20 to 29 years of experience and 22% of teachers with 30 or more years of experience were not comfortable using online teaching tools, compared to 6% of teachers with less than 10 years of experience and 7% of teachers with 10 to 19 years of experience.[42]

There is mixed evidence regarding whether teachers are generally working longer hours during the pandemic. While data from surveys by the EdWeek Research Center in May 2020 suggested that on average, teachers were working two fewer hours per day than when they were in the classroom,[43] according to the USA Today/Ipsos poll, two-thirds of teachers reported that they had to work more than usual and were not able to do their jobs properly when teaching remotely.[44]

More recently, RAND survey data from October 2020 suggested that about 57% of teachers spent more time working than they did prior to the pandemic, and such teachers worked six more hours per week, on average.[45] Other sources suggest that teachers are working longer hours compared to pre-pandemic patterns to manage new challenges. Some challenges may include not only having to master new learning technologies in a short amount of time but also retrofitting lessons meant for the classroom to be delivered online, as well as providing support and comfort to students and their families during this uncertain time.[46] A RAND American Teacher Panel survey from May

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[41] Susan Page, "Back to school? 1 in 5 teachers are unlikely to return to reopened classrooms this fall, poll says," *USA Today*, May 26, 2020, available at https://www.usatoday.com/story/news/education/2020/05/26/coronavirus-schools-teachers-poll-ipsos-parents-fall-online/5254729002.

[42] Matthew A. Kraft and Nicole S. Simon, "Teaching Under Quarantine: Results From A New Survey," FutureEd, August 29, 2020, https://www.future-ed.org/teaching-under-quarantine-a-new-large-scale-survey/?mc_cid=bdd5c441e6&mc_eid=c89735195e.

[43] Catherine Gewertz, "Instruction During COVID-19: Less Learning Time Drives Fears of Academic Erosion," *EducationWeek*, May 28, 2020, available at https://www.edweek.org/ew/articles/2020/05/27/instruction-during-covid-19-less-learning-time-drives.html.

[44] Susan Page, "Back to school? 1 in 5 teachers are unlikely to return to reopened classrooms this fall, poll says," *USA Today*, May 26, 2020, available at https://www.usatoday.com/story/news/education/2020/05/26/coronavirus-schools-teachers-poll-ipsos-parents-fall-online/5254729002.

[45] Julia Kaufman and Melissa Diliberti, "Teachers are not all right: How the COVID-19 pandemic is taking a toll on the nation's teachers," Center for Reinventing Public Education, January 2021, at https://www.crpe.org/sites/default/files/ep_teachers_synthesis.pdf.

[46] Catherine Gewertz, "Exhausted and Grieving: Teaching During the Coronavirus Crisis," EducationWeek, April 16,

2020 found that nearly one-quarter of teachers spent 30 hours per week on instructional planning activities alone.[47]

Some teachers are balancing caretaking responsibilities for their own children while investing the extra hours to transition to an online learning environment. For example, the FutureED survey data suggested that half of the mid-career teachers, those with 5 to 15 years of experience and more likely to have children at home, felt that caregiving responsibilities for children and/or dependent adults made their jobs more difficult during the pandemic.[48]

Some of these challenges with the transition to online learning during a pandemic may contribute to lower teacher morale. EdWeek Research Center surveys in April 2020 indicated that two-thirds of teachers in the sample were experiencing lower morale than they were prior to the pandemic.[49] Teachers may not feel as effective when providing instruction online: the FutureED survey found that 73% of teachers felt successful compared to 96% of teachers prior to the pandemic.[50]

Learning Loss

During the COVID-19 pandemic, students may have had to face school closures and learning amidst the sudden transition to remote instruction, and later, potential shifts between various modes of instruction. Even if students were able to return to in-person learning in some part or fully, they likely still struggled to learn in an environment punctuated with several disruptions and having to navigate different modes of instruction. Some faced challenges with the quality of the learning experience that were likely exacerbated by prolonged periods of remote instruction. Some areas of concern include student attendance and engagement, assessment validity, and limited possibilities for interaction between students and teachers and among students.[51]

While systematic data on student achievement during the pandemic are not available as of the cover date of this report, some studies have emerged that analyze achievement of certain student populations during the pandemic. For example, Kuhfeld et al. (2020)[52] analyzed student performance on NWEA's[53] proprietary MAP Growth assessments in reading and math that were administered to 4.4 million students in grades 3-8 both in person and online during fall 2020. The

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2020, available at https://www.edweek.org/ew/articles/2020/04/16/exhausted-and-grieving-teaching-during-the-coronavirus.html.

[47] Sy Doan, David Grant, and Daniella Henry et al., *American Instructional Resources Surveys: 2020 Technical Documentation and Survey Results*, RAND Corporation, Santa Monica, CA, 2020, https://www.rand.org/pubs/research_reports/RRA134-4.html.

[48] Matthew A. Kraft and Nicole S. Simon, "Teaching Under Quarantine: Results From A New Survey," FutureEd, August 29, 2020, https://www.future-ed.org/teaching-under-quarantine-a-new-large-scale-survey/?mc_cid=bdd5c441e6&mc_eid=c89735195e.

[49] Catherine Gewertz, "Exhausted and Grieving: Teaching During the Coronavirus Crisis," EducationWeek, April 16, 2020, available at https://www.edweek.org/ew/articles/2020/04/16/exhausted-and-grieving-teaching-during-the-coronavirus.html.

[50] Matthew A. Kraft and Nicole S. Simon, "Teaching Under Quarantine: Results From A New Survey," FutureEd, August 29, 2020, https://www.future-ed.org/teaching-under-quarantine-a-new-large-scale-survey/?mc_cid=bdd5c441e6&mc_eid=c89735195e.

[51] W. Keaton and A. Gilbert, *Successful Online Learning: What Does Learner Interaction with Peers, Instructors, and Parents Look Like?* (2020) Journal of Online Learning Research, 6(2), 129-154.

[52] Megan Kuhfeld et al., *Learning During COVID-19: Initial Findings on Students' Reading and Math Achievement and Growth*, NWEA, 2020, available at https://www.nwea.org/research/publication/learning-during-covid-19-initial-findings-on-students-reading-and-math-achievement-and-growth/ (hereinafter, "Kuhfeld et al.").

[53] NWEA, formerly known as the Northwest Evaluation Association, is a research-based, not-for-profit organization that creates and develops assessments for K-12 students that aim to measure growth and proficiency.

authors found that students' achievement scores in reading in fall 2020 were similar to same-grade students in fall 2019 but in math were about 5-10 percentile points lower. They also found that in almost all grades, most students had made some learning gains in both reading and math in fall 2020 relative to their achievement scores from winter 2019. However, learning gains in math were lower on average in fall 2020 than in prior years, suggesting that more students were falling behind relative to their prior standing.

These results are likely not capturing the full picture with respect to potential learning loss caused by the pandemic. In particular, these assessment results exclude the portion of the student population consisting primarily of students who are absent from schools or unable to take the assessments due to economic, health, technological, or other reasons unknown to researchers. According to additional analyses carried out by Kuhfeld et al., it is likely that students not tested during fall 2020 are disproportionately from disadvantaged backgrounds. Thus, the lack of achievement data on these students means that the impacts of the pandemic on student achievement are likely underestimated.[54]

Some of these findings persist outside of the United States. The Netherlands, which shut down its schools for eight weeks in response to the pandemic, administered national examinations prior to and following school shutdowns. A study of these examination data for early-grade students showed a learning loss that is equivalent to one-fifth of a school year, suggesting that students made little or no progress while learning from home.[55] Similar findings were obtained in Belgium, Switzerland, and Germany, which shut down schools for comparable periods.[56]

A survey administered by the RAND Corporation to nationally representative samples of teachers and principals in October 2020 found that respondents generally believed the pandemic negatively impacted their students' levels of preparedness for grade-level work. Sixty-six percent of surveyed teachers reported that the majority of their students were less prepared to participate in grade-level work during the 2020–2021 school year relative to this time in the previous school year, and 27% indicated that the majority of their students were significantly less prepared than they were the previous year.[57] Additionally, survey responders reported that 84% of students enrolled in fully remote learning were typically present each day,[58] compared with the average daily attendance rate in U.S. schools of 94% during the 2015–2016 school year, the last year for which such data are available.[59]

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[54] Kuhfeld et al., pp. 7-8.

[55] Per Engzell, Arun Frey, and Mark D. Verhagen, "Learning loss due to school closures during the COVID-19 pandemic," *Proceedings of the National Academy of Sciences of the United States of America*, April 2021, https://www.pnas.org/content/118/17/e2022376118?fbclid=IwAR0B0gKSv_jBS3SdoSJpgPQWkFezms20Z2vkEKcNgPggCVlfMhJTAXrxa7Q.https://www.pnas.org/content/118/17/e2022376118?fbclid=IwAR0B0gKSv_jBS3SdoSJpgPQWkFezms20Z2vkEKcNgPggCVlfMhJTAXrxa7Q.

[56] Harry Patrinos and Robin Donnelly, "Learning Loss During COVID-19: An Early Systematic Review," *Research Square*, May 2021, available at https://www.researchsquare.com/article/rs-518655/v1.

[57] M. Diliberti and J.H. Kaumfan, *Will This School Year Be Another Casualty of the Pandemic?* RAND Corporation, 2020, available at https://www.rand.org/pubs/research_reports/RRA168-4.html; and J.H. Kaumfan et al. *COVID-19 and the State of K-12 Schools,* RAND Corporation, 2020, available at https://www.rand.org/pubs/research_reports/RRA168-5.html.

[58] It is possible that online class attendance earlier in the pandemic was significantly lower than in the fall semester, when schools and LEAs had had more time to prepare for full remote learning. For example, an April 2020 survey of teachers from Fishbowl Insights found that more than 55% of teachers reported less than half of their students attending online classes. Survey findings are available at https://www.fishbowlapp.com/insights/2020/04/13/covide-19-survey-teachers-say-less-than-half-of-students-attending-their-remote-classes/.

[59] National Center for Education Statistics, "Digest of Education Statistics: Table 203.90: Average Daily Attendance

Student Assessment

One of the concerns associated with the impact of the COVID-19 pandemic on student learning has been the ability of schools, LEAs, and states to accurately assess student academic achievement and progress during the 2019-2020 and 2020-2021 school years. In response to the pandemic, the Secretary of Education announced on March 20, 2020, that she would waive assessment, accountability and school identification, and related reporting requirements and provided a waiver request template to streamline the process by which states could request a waiver under Section 8401 of the Elementary and Secondary Education Act (ESEA).[60]

On November 25, 2020, the NCES Commissioner announced that, due to the impact of the pandemic on school operations, it would not be possible for NCES to conduct the National Assessment of Educational Progress (NAEP) in accordance with the statutory requirements defined by the Education Sciences Reform Act (ESRA), which requires NAEP to be conducted in a valid and reliable manner every two years.[61]

On February 21, 2020, ED invited states to request waivers only for ESEA-mandated accountability and school identification requirements for the 2020-2021 school year. ED maintained ESEA-mandated state and local reporting requirements, as well as ESEA-mandated assessment requirements, though it permitted increased flexibility in how and when states administer such assessments for the 2020-2021 school year.[62]

Without readily available information from these assessments, it may be more challenging to determine overall student academic achievement and how online learning may have affected achievement.

Inadequate Access to Targeted Educational Services Typically Provided in Schools

Another means in which learning may be impacted is through the lack of access to other educational services typically provided in schools, which may further the disruption in a child's education. Specifically, services that may be impacted significantly are special education services for students with Individualized Education Programs (IEPs), language support services for English Learner students (ELs), and supplemental services for students experiencing homelessness. Challenges related to providing educational services to children with disabilities, ELs, and students experiencing homelessness in an online learning environment are described in the following sections.

(ADA) as a Percentage of Total Enrollment, School Day Length, and School Year Length in Public Schools, by School Level and State: 2007-08 and 2011-12," webpage, 2018. As of October 23, 2020: https://nces.ed.gov/programs/digest/d18/tables/dt18_203.90.asp.

[60] More information about ESEA waivers and flexibilities in response to the COVID-19 pandemic is available at https://www2.ed.gov/documents/coronavirus/cares-waiver-report.pdf.

[61] 20 U.S.C. §9622(b)(2)(B). The entire statement from NCES is available at https://nces.ed.gov/whatsnew/commissioner/remarks2020/11_25_2020.asp.

[62] U.S. Department of Education, Office of Elementary and Secondary Education, "Dear Colleague Letter to Chief of State School Officers," February 22, 2021, available at https://www2.ed.gov/policy/elsec/guid/stateletters/dcl-assessments-and-acct-022221.pdf#:~:text=Accountability%20and%20School%20Identification.%20We%20are%20inviting%20states,adjusted%20to%20account%20for%20a%20participation%20rate%20below.

Special Education Services for Children with Disabilities

The Individuals with Disabilities Education Act (IDEA)[63] authorizes grant programs that support special education and early intervention services for children with disabilities. As a condition of receiving those grants, states are required to provide each child with a disability between the ages of 3 through 21 a free and appropriate public education (FAPE) that emphasizes special education and related services designed to meet his/her unique needs. In the 2018-2019 school year, over 7 million children with disabilities were enrolled in U.S. public schools, which was approximately 14% of all public school students.[64]

Each child identified as a child with a disability who requires special education must have an IEP. An IEP is developed by an IEP team composed of school personnel, the child's parents, and, when appropriate, the child. The resulting IEP includes measureable goals, appropriate accommodations, and a description of the special education and related services to be provided to the child, to allow the child to be involved and to make progress in the general education curriculum.[65]

Anecdotal evidence suggests that remote learning environments may not be conducive to ensuring that children with disabilities consistently receive the services and supports specified in their IEPs and thus, access to FAPE as mandated by law. For example, some children with disabilities may not be able to operate the necessary technology independently, may be non-verbal, and/or may struggle with writing and typing skills that may be needed to engage in online learning.[66] More broadly, some children with disabilities' IEPs require that they be provided related services, such as physical therapy, occupational therapy, or therapeutic recreation, which may be impossible to provide in a remote learning environment with social distancing in effect.[67] Many online learning platforms lack integration with assistive technologies, such as a screen reader or braille reader for visually impaired students that may be required for some children with disabilities to engage in online learning.[68] As mentioned previously, remote learning may prevent students from accessing therapies and other related services required for their IEPs to be implemented thoroughly and appropriately.[69] Parents may not have the required training, tools, abilities, or capacity to provide such services at home.[70]

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[63] 20 U.S.C. §§1400 et seq.

[64] National Center for Education Statistics. *The Condition of Education: Students with Disabilities*, available at https://nces.ed.gov/programs/coe/indicator_cgg.asp.

[65] For more information on the IDEA and the IEP process, see CRS Report R41833, *The Individuals with Disabilities Education Act (IDEA), Part B: Key Statutory and Regulatory Provisions*.

[66] Elissa Nadworny, "With Schools Closed, Kids With Disabilities Are More Vulnerable Than Ever," *NPR*, March 27, 2020, available at https://www.npr.org/2020/03/27/821926032/with-schools-closed-kids-with-disabilities-are-more-vulnerable-than-ever.

[67] Faith Hill, "The Pandemic Is a Crisis for Students With Special Needs," *The Atlantic,* April 18, 2020, available at https://www.theatlantic.com/education/archive/2020/04/special-education-goes-remote-covid-19-pandemic/610231.

[68] Faith Hill, "The Pandemic Is a Crisis for Students With Special Needs," *The Atlantic,* April 18, 2020, available at https://www.theatlantic.com/education/archive/2020/04/special-education-goes-remote-covid-19-pandemic/610231.

[69] Faith Hill, "The Pandemic Is a Crisis for Students With Special Needs," *The Atlantic,* April 18, 2020, available at https://www.theatlantic.com/education/archive/2020/04/special-education-goes-remote-covid-19-pandemic/610231; and Laura McKenna, "When schools close or go online, what happens to students with disabilities?" *USA Today*, March 21, 2020, available at https://www.usatoday.com/story/opinion/2020/03/21/coronavirus-what-happens-students-disabilities-when-schools-close-column/2867856001/.

[70] Faith Hill, "The Pandemic Is a Crisis for Students With Special Needs," *The Atlantic,* April 18, 2020, available at https://www.theatlantic.com/education/archive/2020/04/special-education-goes-remote-covid-19-pandemic/610231; and Laura McKenna, "When schools close or go online, what happens to students with disabilities?" *USA Today*, March

In many cases, the necessary modifications, accommodations, and supports that are required by each student's IEP may be challenging, if not impossible, to implement for teachers, schools, and families in an online learning environment. According to the ParentsTogether survey referenced above, 39% of parents of children who have IEPs indicated that their children were receiving none of the services to which they are entitled, while 20% indicated their children were receiving all of the services to which they are entitled.[71] As such, a student may be entitled to compensatory services if it is determined that the student was denied his or her right to a FAPE during a period of online learning.[72]

Language Support Services for English Learners[73]

Students who are identified as ELs by their schools are eligible to participate in language assistance programs to help them attain English language proficiency and meet academic standards that all students are expected to achieve. In 2017, there were 5 million ELs enrolled in U.S. public schools, which was 10% of all public school students.[74]

In a remote learning environment, ELs may face more challenges to getting the necessary instruction to ensure they are not only meeting the same academic standards as non-ELs but also learning English. Prior to the COVID-19 pandemic, a 2019 U.S. Department of Education (ED) study found data suggesting the following:

- teachers are less likely to assign ELs digital resources outside of class due to concerns about a lack of access to the internet or devices at home,
- teachers are more likely to assign general education digital resources instead of EL-specific digital resources, and
- EL specialists reported receiving fewer hours of professional development in remote learning than mainstream teachers.[75]

Anecdotal data suggests that the ability of EL specialists and instructors to provide effective language instruction becomes limited when instruction is shifted to a digital platform. Digital resources may not be specific to the needs of ELs, and remote instruction may not ultimately be able to replace the real-time adjustments that EL instructors make in-person.[76] Given that English

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21, 2020, available at https://www.usatoday.com/story/opinion/2020/03/21/coronavirus-what-happens-students-disabilities-when-schools-close-column/2867856001/.

[71] ParentsTogetherAction, "ParentsTogether Survey Reveals Remote Learning is Failing Our Most Vulnerable Students," available at https://parentstogetheraction.org/2020/05/27/parentstogether-survey-reveals-remote-learning-is-failing-our-most-vulnerable-students-2/.

[72] U.S. Department of Education, *Questions and Answers on Providing Services to Children with Disabilities during the Coronavirus Disease 2019 Outbreak*, March 2020, available at https://www2.ed.gov/policy/speced/guid/idea/memosdcltrs/qa-covid-19-03-12-2020.pdf.

[73] For more information on the provisions covering language instruction for ELs and immigrant students in Title III of the ESEA, see CRS Report R45977, *The Elementary and Secondary Education Act (ESEA), as Amended by the Every Student Succeeds Act (ESSA): A Primer*.

[74] National Center for Education Statistics, "The Condition of Education: English Language Learners in Public Schools," available at https://nces.ed.gov/programs/coe/indicator_cgf.asp.

[75] U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service, Supporting English learners through technology: What districts and teachers say about digital learning resources for English learners, Volume I: Final Report, Washington, DC, May 2019, https://www2.ed.gov/rschstat/eval/title-iii/180414.pdf.

[76] Jo Napolitano, "Teachers use high- and low-tech means to reach English Language Learners during coronavirus crisis," *The Hechinger Report*, April 28, 2020, available at https://hechingerreport.org/teachers-use-high-and-low-tech-

is likely not the primary language spoken in ELs' homes, ELs may not be getting as much practice conversing in English and parents may be limited in how much they can support their children in English language instruction.[77] In some EL households, particularly those where the native language is not Spanish, the school may not be able to provide resources in the household's native language.[78]

In 2019, the achievement gaps between ELs and non-ELs in the NAEP reading assessment were 33 points at the 4th grade level and 45 points at the 8th grade level.[79] There are some data to suggest that the learning loss that ELs experience when schools are closed may be greater than for non-ELs,[80] which could contribute to expanding the achievement gap between ELs and non-ELs.

Supplemental Services for Students Experiencing Homelessness[81]

The McKinney-Vento Act[82] authorizes the Education for Homeless Children and Youths program to ensure all homeless children and youths have equal access to the same, appropriate education that is provided to other children and youths. Grants made by states to LEAs under this program must be used to facilitate the enrollment, attendance, transportation to school, and success in school of homeless youths, including services such as tutoring, supplemental instruction, health services, and referrals. The McKinney-Vento Act defines *homeless children and youths* as individuals who lack a fixed, regular, and adequate nighttime residence.[83] In the 2017-2018 school year, there were approximately 1.5 million students enrolled in public schools experiencing homelessness.[84]

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means-to-reach-english-language-learners-during-coronavirus-crisis/; and Corey Mitchell, "English-Learners May Be Left Behind as Remote Learning Becomes 'New Normal'," EducationWeek, March 17, 2020, available at https://blogs.edweek.org/edweek/learning-the-language/2020/03/coronavirus_english_learners_digital_divide.html.

[77] Erin Richards, "Coronavirus' online school is hard enough. What if you're still learning to speak English?" *USAToday*, May 13, 2020, available at https://www.usatoday.com/in-depth/news/education/2020/05/14/coronavirus-online-classes-school-closures-esl-students-learn-english/5178145002/.

[78] Corey Mitchell, "English-Learners May Be Left Behind as Remote Learning Becomes 'New Normal'," EducationWeek, March 17, 2020, available at https://blogs.edweek.org/edweek/learning-the-language/2020/03/coronavirus_english_learners_digital_divide.html.

[79] The Nation's Report Card, "NAEP Report Card: Reading, National Student Group Scores and Score Gaps," available at https://www.nationsreportcard.gov/reading/nation/groups/?grade=4.

[80] Joshua F. Lawrence, "English vocabulary trajectories of students whose parents speak a language other than English: steep trajectories and sharp summer setback," *Reading & Writing: An Interdisciplinary Journal*, vol. 25, no. 5 (2012), pp. 1113-1141.

[81] For more information, see CRS In Focus IF11152, *Federal Support for Runaway and Homeless Youth*.

[82] P.L. 100-77; 42 U.S.C. §11301 et seq.

[83] U.S. Department of Education, *Education for Homeless Children and Youths Program Non-Regulatory Guidance: Title VII-B of the McKinney-Vento Homeless Assistance Act, as amended by the Every Student Succeeds Act*, updated August 2018, available at https://www2.ed.gov/policy/elsec/leg/essa/160240ehcyguidanceupdated082718.docx. The term includes "children and youths who are: sharing the housing of other persons due to loss of housing, economic hardship, or a similar reason (sometimes referred to as "doubled-up"); living in motels, hotels, trailer parks, or camping grounds due to lack of alternative adequate accommodations; living in emergency or transitional shelters; or abandoned in hospitals." *Homeless children and youths* also include "Children and youths who have a primary nighttime residence that is a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings; Children and youths who are living in cars, parks, public spaces, abandoned buildings, substandard housing, bus or train stations, or similar settings; and migratory children who qualify as homeless because they are living in circumstances described above."

[84] National Center for Homeless Education, *Federal Data Summary: School Years 2015-16 to 2017-18*, January 2020, available at https://nche.ed.gov/wp-content/uploads/2020/01/Federal-Data-Summary-SY-15.16-to-17.18-Published-1.30.2020.pdf.

Since the start of the pandemic and during school closures, one of the preeminent issues with ensuring that students experiencing homelessness are still accessing the necessary supplemental and targeted services to enable their learning is the ability to identify which students are experiencing homelessness. According to a November 2020 Schoolhouse Connection report, 28% fewer students were identified as experiencing homelessness at the start of the 2020-2021 school year relative to the prior year.[85] One of the oft-cited reasons for this drop is that schools do not have access to the typical means for identifying such students when school closures are in effect. This includes use of enrollment forms about housing status, ability of school staff to look for potential signs of homelessness in-person, and outreach to community agencies. During school closures, there are fewer opportunities for school staff to have private conversations with students and families about their living situations. Social distancing protocols also minimize opportunities to observe signs of homelessness. Additionally, due to the high mobility of students and families experiencing homelessness, it may be more challenging to stay in contact with them.[86]

Even when it is known that a student is experiencing homelessness, shuttered schools can mean a disruption in critical services for such students. For many students experiencing homelessness, schools not only represent a place for academic learning, but also where they can reliably get warm meals, mental health services, and other key wraparound supports.[87] A halt in these supplemental services—not a focus of this report—could significantly impair these students' ability to succeed academically.

For many students experiencing homelessness, engaging in remote instruction may not be possible. Issues stemming from the digital divide are further exacerbated in unstable living situations. While schools may prioritize the distribution of devices and mobile hotspots to their students experiencing homelessness, these students and their families may not be aware of such availability because they may have moved or lack reliable access to phone or email. Shelters and motels, where families experiencing homelessness often stay, lack reliable high-speed Wi-Fi, if they have any at all. Additionally, the lack of a stable living situation may also create an unsuitable learning environment in which to engage in remote instruction. As an example, shelters are often overcrowded or many families may double-up in crowded apartments, which may lead to conditions that are not conducive to learning.[88]

Data suggest that lengthy periods of remote instruction could perpetuate the cycle of homelessness for such students. According to a National Center for Homeless Education brief, prior to the pandemic, students experiencing homelessness were much more likely to be

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[85] SchoolHouse Connection and Poverty Solutions at the University of Michigan, *Lost in the Masked Shuffle & Virtual Void: Children and Youth Experiencing Homelessness Amidst the Pandemic*, November 2020, available at https://www.schoolhouseconnection.org/wp-content/uploads/2020/11/Lost-in-the-Masked-Shuffle-and-Virtual-Void.pdf.

[86] Ibid.

[87] Eliza Shapiro, "These Families Feel Forgotten as N.Y.C. Pushes to Open Schools," *The New York Times*, September 21, 2020, available at https://www.nytimes.com/2020/09/14/nyregion/homeless-school-reopening-nyc.html; and Cory Turner, "Homeless Families Struggle With Impossible Choices As School Closures Continue," *NPR*, October 7, 2020, available at https://www.npr.org/2020/10/07/920320592/an-impossible-choice-for-homeless-parents-a-job-or-their-childs-education?utm_campaign=storyshare&utm_source=twitter.com&utm_medium=social.

[88] Eliza Shapiro, "These Families Feel Forgotten as N.Y.C. Pushes to Open Schools," *The New York Times*, September 21, 2020, available at https://www.nytimes.com/2020/09/14/nyregion/homeless-school-reopening-nyc.html; Cory Turner, "Homeless Families Struggle With Impossible Choices As School Closures Continue," *NPR*, October 7, 2020, available at https://www.npr.org/2020/10/07/920320592/an-impossible-choice-for-homeless-parents-a-job-or-their-childs-education?utm_campaign=storyshare&utm_source=twitter.com&utm_medium=social; and Katie Aulenbacher, "Pandemic Heightens Homeless Students' Hurdles with Remote Learning," *The Homeless Voice*, August 21, 2020, available at https://homelessvoice.org/pandemic-heightens-homeless-students-hurdles-with-remote-learning/.

chronically absent from school then their housed peers.[89] Further, chronically absent students were also more likely to have lower student achievement scores and to drop out of school altogether.[90] A 2017 study from the Chapin Hall at the University of Chicago found that students who drop out are more than four times as likely to experience homelessness as young adults than their peers who graduate high school or complete a GED.[91] These data taken together with the aforementioned issues in this section suggest that prolonged school closures could further increase the likelihood that a student experiencing homelessness will be chronically absent from school, drop out, and experience homelessness as an adult.

Privacy Concerns Related to Online Learning

Concerns related to student privacy and online learning have existed since before the COVID-19 pandemic.[92] These concerns include the collection and use of student data by third-party educational software providers, ransomware or ransom attacks, inappropriate content, and the appropriateness of on-camera interactions between students and teachers. Discussion of some of these issues has taken on a new urgency due to the increased reliance on online education and the proliferation of videoconferencing tools and other online educational platforms during the pandemic.

Securing Student Data

The rush to adapt their schools and classrooms to online education has led many school districts and states to bypass certain security precautions that are normally in place with regard to restrictions on the use of student data. For example, Governor Ned Lamont of Connecticut signed an executive order[93] on March 21, 2020, that allows the state's education commissioner to temporarily waive its student data privacy law that requires schools and companies entering a partnership to sign a written contract that explicitly states the company will not use student data for any purpose beyond the company's stated function.

While a number of school districts had created lists of pre-approved online learning platforms and educational tools prior to the COVID-19 pandemic, many others were caught unprepared and needed to expedite the process of ensuring that a certain tool would not lead to cybersecurity breaches or improper use of student data. In response to the rapid need for school districts to

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[89] *Chronically absent* means missing 10% or more of the school year, whether excused or unexcused.

[90] National Center for Homeless Education, *In School Every Day: Addressing Chronic Absenteeism Among Students Experiencing Homelessness*, September 2017, available at https://nche.ed.gov/wp-content/uploads/2018/10/chron-absent.pdf.

[91] M.H. Morton, A. Dworsky, and G.M. Samuels, *Missed Opportunities: Youth Homelessness in America*, Chapin Hall at the University of Chicago, Chicago, IL, 2017, https://voicesofyouthcount.org/wp-content/uploads/2017/11/VoYC-National-Estimates-Brief-Chapin-Hall-2017.pdf.

[92] See, for example, J.R. Reidenberg and F. Schaub, *Achieving big data privacy in education*, Theory and Research in Education, 2018, 16(3):263-279; S. Ben-Porath, T. Harel Ben Shahar, *Introduction: Big data and education: Ethical and moral challenges*, Theory and Research in Education, 2017, 15(3): 243–248; and G. Dishon, *New data, old tensions: Big data, personalized learning, and the challenges of progressive* education, Theory and Research in Education, 2017, 15(3): 272–289.

[93] Executive Order 7I, available at https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-7I.pdf. The student data privacy flexibility provisions in this executive order were extended by Executive Order 9D on September 25, 2020, available at https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-9D.pdf.

switch to online learning, ED published a compilation of resources aimed at school officials, teachers, parents, and students trying to safely navigate online learning.[94]

The main federal laws that address student data privacy are the Family Educational Rights and Privacy Act of 1974 (FERPA)[95] and the Children's Online Privacy Protection Act (COPPA).[96] FERPA creates privacy protections for student education records. *Education records* are defined broadly to include any "materials which contain information directly related to a student" and are "maintained by an educational agency or institution." FERPA generally requires that any "educational agency or institution" (i.e., covered entities) give parents or, depending on their age, the student (1) control over the disclosure of the student's educational records, (2) an opportunity to review those records, and (3) an opportunity to challenge them as inaccurate. Parents or adult students who believe that their rights under FERPA have been violated may file a complaint with ED.

COPPA regulates the online collection and use of children's information and is not specific to educational institutions. COPPA's requirements apply to (1) any "operator" of a website or online service that is "directed to children" or (2) any operator that has any "actual knowledge that it is collecting personal information from a child" (i.e., covered operators). Covered operators must comply with various requirements regarding data collection and use, privacy policy notifications, and data security. COPPA provisions are enforced by the Federal Trade Commission.[97]

Cyber Attacks on School Networks

Malware and ransomware attacks on school and LEA computer networks persisted with high frequency throughout the 2019-2020 school year, according to a Joint Cybersecurity Advisory issued by the Federal Bureau of Investigation, the Cybersecurity and Infrastructure Security Agency, and the Multi-State Information Sharing and Analysis Center (MS-ISAC) on December 10, 2020.[98] Cyber actors likely view schools as targets of opportunity, and these types of attacks continued through the 2020-2021 academic year.[99] These issues will be particularly challenging for elementary and secondary schools that face resource and knowledge limitations; therefore, educational leadership, information technology personnel, and security personnel will need to balance this risk when determining their cybersecurity investments.

Ransomware attacks against school networks in particular have been on the rise since the beginning of the pandemic. In these attacks, malicious cyber actors target school computer systems, slowing access, and, in some instances, rendering the systems inaccessible for basic functions, including online learning. Adopting tactics previously leveraged against business and industry targets, ransomware actors have also stolen—and threatened to leak—confidential student data to the public unless institutions pay a ransom.

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[94] See https://rems.ed.gov/docs/CyberSafetyProtectingYouth_COVID19_508C.pdf.

[95] P.L. 93-380, codified at 20 U.S.C. §1232g. See also FERPA and Virtual Learning, https://studentprivacy.ed.gov/resources/ferpa-and-virtual-learning/.

[96] 15 U.S.C. §§6501–6506.

[97] For more information about FERPA and COPPA, see CRS Report R45631, *Data Protection Law: An Overview*.

[98] The advisory is available at https://content.govdelivery.com/accounts/USDHSCISA/bulletins/2b08dcd.

[99] Douglas A. Levin, *The State of K-12 Cybersecurity: 2020 Year in Review*, EdTech Strategies/K-12 Cybersecurity Resource Center and the K12 Security Information Exchange, March 10, 2021, https://k12cybersecure.com/wp-content/uploads/2021/03/StateofK12Cybersecurity-2020.pdf.

According to MS-ISAC data, the percentage of reported ransomware incidents against elementary and secondary schools increased at the beginning of the 2020-2021 school year. In August and September, 57% of ransomware incidents reported to the MS-ISAC involved elementary and secondary schools, compared to 28% of reported ransomware incidents from January through July 2020.[100] Additionally, according to a report published by the K-12 Cybersecurity Resource Center, in coordination with the K12 Security Information Exchange, the number of publicly disclosed data breaches in the 2020 calendar year rose by 18%, when compared to the 2019 calendar year.[101]

Looking Forward to the 2021-2022 School Year

The 2020-2021 school year, during which students collectively experienced a variety of instructional modes, has concluded and attention has turned to how school districts and schools will approach the 2021-2022 school year. Compared to the early stages of the COVID-19 pandemic, the public now has a better understanding of how the virus operates. Further, many pharmaceutical companies were able to rapidly develop, test, and deploy working vaccinations to adults over age 18 and, in one case, to children as young as 12.[102] Vaccines currently authorized in the United States have been shown to help protect against COVID-19 as well as reduce the incidence of severe illness.[103] As of August 5, 2021, 58.2% of the total U.S. population has received at least one dose of a COVID-19 vaccine, and 49.9% has been fully vaccinated.[104]

Many adults and eligible youth may be unwilling or unable to get a vaccine. A vaccine is not available to any child under age 12. In 2019, such children accounted for 15% of the total U.S. population[105] and 60% of all children enrolled in grades K-12 in public or private schools.[106] Further, the emergence of COVID-19 variants, such as the Delta variant, that are more easily transmissible increase the risk of infection. The various and often changing circumstances surrounding vaccination rates and the spread of the virus, including variants, may differ across school districts and muddy decisions to reopen schools full-time for many students.

This section describes the issues that school districts, schools leaders, teachers, parents, and students may be considering as the 2021-2022 school year nears. Specifically, some issues of interest include whether it is safe for schools to reopen for all students in all grades, whether the use of online learning will continue to persist after the pandemic has passed, how to address long-

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[100] See https://content.govdelivery.com/accounts/USDHSCISA/bulletins/2b08dcd.

[101] Douglas A. Levin, *The State of K-12 Cybersecurity: 2020 Year in Review*, EdTech Strategies/K-12 Cybersecurity Resource Center and the K12 Security Information Exchange, March 10, 2021, https://k12cybersecure.com/wp-content/uploads/2021/03/StateofK12Cybersecurity-2020.pdf.

[102] Centers for Disease Control and Prevention, "Different COVID-19 Vaccines," May 27, 2021, available at https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines.html.

[103] Centers for Disease Control and Prevention, "Ensuring COVID-19 Vaccines Work," May 10, 2021, available at https://www.cdc.gov/coronavirus/2019-ncov/vaccines/effectiveness.html.

[104] Centers for Disease Control and Prevention, "COVID Data Tracker Weekly Review," July 2, 2021, available at https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html.

[105] CRS analysis of data from the U.S. Census Bureau, Population Division, 2019 Population Estimates by Age, Sex, Race and Hispanic Origin, "Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2019," accessed on July 6, 2021, at https://www.census.gov/newsroom/press-kits/2020/population-estimates-detailed.html.

[106] CRS analysis of data from the U.S. Census Bureau, Current Population Survey, School Enrollment Supplement, October 2019, accessed on July 6, 2021, at https://www.census.gov/data/tables/2019/demo/school-enrollment/2019-cps.html.

term issues with shuttered schools and the continued use of online learning such as quality of instruction and potential learning loss, and federal support for the continued use of online learning.

Reopening Safely

In August 2021, the CDC updated guidance regarding the safe reopening of K-12 schools.[107] According to the CDC guidance, the following prevention strategies are recommended in order for schools to reopen safely for in-person instruction:

1. promoting vaccination,
2. requiring universal and correct use of masks,
3. maintaining adequate physical distancing,
4. administering screening tests in appropriate circumstances,
5. improving ventilation,
6. reinforcing proper hand-washing and respiratory protocol,
7. encouraging students and school staff to stay home when they are experiencing symptoms of an infectious illness and to seek out proper care and testing,
8. isolating and quarantining known cases and utilizing contact tracing in accordance with privacy laws, and
9. employing frequent cleaning and disinfection.

The CDC recommends prioritizing the universal use of masks indoors and physical distancing, and layering multiple such strategies to reduce the risk of infection and transmission.

To reopen schools safely, according to the CDC guidance, schools may require additional resources. This may include funding for updates to school ventilation systems; additional staffing to implement class sizes in which students are able to maintain at least three feet of physical distance (or six feet in some cases); and purchases of masks, hand sanitizer and hand soap, and other supplies to meet CDC recommendations.

Continued Use of Online Learning

In a May 2021 interview, Secretary of Education Miguel Cardona said that he expects all public elementary and secondary schools to fully reopen five days a week at the start of the 2021-2022 school year, citing that "students don't learn as well remotely. There is no substitute for in-person learning."[108] Despite the CDC's guidance and ED's focus on the safe reopening of schools for the 2021-2022 school year, many school districts are still considering whether to employ the continued use of online learning in some way.

In a survey by the RAND Corporation of 319 school districts and charter management organizations in fall 2020, 20% indicated that they were considering, were planning to adopt, or have already adopted a virtual learning school or fully online learning option for use after the pandemic is over. Another 10% indicated that they were planning to adopt or have already

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[107] Centers for Disease Control and Prevention, "Guidance for COVID-19 Prevention in K-12 Schools," August 5, 2021, available at https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html.

[108] Justine Coleman, "Education secretary expects all schools to fully reopen in-person in fall," *The Hill*, May 6, 2021, at https://thehill.com/policy/healthcare/552123-education-secretary-expects-all-schools-to-fully-reopen-in-person-in-fall?rl=1.

adopted a hybrid or blended learning approach for use after the pandemic is over.[109] This response is driven by a variety of factors, which could differ across school districts, including the following:[110]

- **Concerns about safety**. For various reasons, not all children and adults will be vaccinated by the start of the school year. Additionally, as new variants of COVID-19 emerge, risks of infection within a community will increase, and so will the risk of becoming seriously ill for adults and students with underlying health conditions. The American Federation of Teachers and the National Education Association, two of the largest teacher unions, recommend that accommodations be available to educators who, or whose family members, have a high risk of becoming seriously ill if infected, including the option of providing instruction remotely.[111]

- **Mitigation of staffing shortages**. One of the prevention strategies recommended by the CDC is to maintain physical distance of at least three feet in some cases and at least six feet for some youth and all adults. Schools may need to increase staffing based on the capacity of their facilities in order to meet such guidelines, which may require additional funding for hiring. School districts would need access to a readily available pool of high quality teacher candidates from which to select potential hires—a significant challenge in fields that already face persistent shortages such as math, science, and special education.[112] Hybrid options allow schools to deliver instruction in accordance with CDC guidelines without the need for additional staff.

- **Greater flexibility**. Online learning can offer more flexibility for schools, parents, and students. For example, if a school is not able to offer a certain course due to lack of staffing or student interest, an interested student may be able to access such course at another school through online learning. Additionally, virtual school options may allow parents and students more flexibility as lessons can be delivered outside of traditional school hours.

- **Increased transparency for parents.** For some parents, online learning has allowed greater visibility into their children's classrooms. Parents are able to gain a deeper view of student-teacher interactions, instruction, and curricular materials, as well as a means for intervening more immediately or even in real-

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[109] Heather L. Schwartz, David Grant, and Melissa Kay Diliberti et al., *Remote Learning Is Here to Stay: Results from the First American School District Panel Survey*, RAND Corporation, 2020, https://www.rand.org/pubs/research_reports/RRA956-1.html.

[110] Heather L. Schwartz, David Grant, and Melissa Kay Diliberti et al., *Remote Learning Is Here to Stay: Results from the First American School District Panel Survey*, RAND Corporation, 2020, https://www.rand.org/pubs/research_reports/RRA956-1.html; and Benjamin Herold, "'No Going Back' From Remote and Hybrid Learning, Districts Say," Education Weekly, January 7, 2021, at https://www.edweek.org/technology/no-going-back-from-remote-and-hybrid-learning-districts-say/2021/01.

[111] American Federation of Teachers, "Road Map to Safely Reopening Our Schools," accessed July 12, 2021, from https://www.aft.org/sites/default/files/aft-reopen-schools-one-pager_feb2021.pdf; and National Education Association, "NEA's Checklist for Safely and Equitably Reopening Schools and Campus Buildings," July 30, 2021, file:///C:/Users/rzota/Downloads/Checklist%20for%20Safely%20&%20Equitably%20Reopening%20Schools.pdf.

[112] Leib Sutcher, Linda Darling-Hammond, and Desiree Carver-Thomas, *A Coming Crisis in Teaching? Teacher Supply, Demand, and Shortages in the U.S.*, Learning Policy Institute, Palo Alto, CA, 2016, https://learningpolicyinstitute.org/sites/default/files/product-files/A_Coming_Crisis_in_Teaching_REPORT.pdf.

time if they perceive any kind of discrimination or mistreatment directed towards their children.[113]

The reality that school districts are facing is that many families may be eager for a return to in-person learning full-time as their children learn better in that environment, and parents may have to worry less about providing suitable learning environments at home or outside of the school, among other reasons. Other families may wish to continue learning under the new online and hybrid models of instruction because their children may be thriving with the increased flexibility and visibility into classrooms associated with such models.

Improving Online Learning and Addressing Learning Loss

The COVID-19 pandemic has likely ushered in a new era in which schools may become more reliant on the use of technology inside and outside the classroom. As described earlier, there are a number of issues that school districts and schools may need to address to foster the continued use of online instruction and ensure all students are learning.

A recent Curriculum Associates analysis found that the schools that were able to minimize learning loss during the pandemic were those that eliminated the digital divide for their students, among other efforts.[114] This analysis and other studies suggest that successful schools seem to be engaging with students' families on how to use online learning platforms and to be providing teachers with sufficient opportunities to obtain professional development and training in the use of technology.[115]

Schools may also want to consider ensuring that more students have sufficient access to instructional content through technological means, including children with disabilities and ELs. For example, schools could build appropriate accessibility features into their technology platforms for children with disabilities. This may include ensuring that instructional content is compatible with screen reader software and that videos include captioning and/or embedded sign language interpretation. Similarly, schools could consider making content on devices and technological support accessible in multiple languages.[116]

Addressing Learning Loss

ED's ED COVID-19 Handbook recommends that schools provide *accelerated learning* opportunities to students as a means for addressing learning loss they may have experienced during the COVID-19 pandemic and/or through remote instructional methods. Accelerated learning refers to the provision of instructional content at grade-level by tying it to a student's prior knowledge at a pace that allows the student to engage with grade-level content. It would not

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[113] Melinda D. Anderson, "You're Out of Your Mind if You Think I'm Ever Going Back to School'," *The New York Times*, October 2020, available at https://www.nytimes.com/2020/10/28/opinion/virtual-school-racism.html.

[114] Curriculum Associates, *Overcoming the Digital Divide: Distance-Learning Successes during the Pandemic*, Report No. 2020-46, North Billerica, MA, September 2020, https://www.curriculumassociates.com/-/media/mainsite/files/i-ready/iready-digital-divide-2020.pdf.

[115] Curriculum Associates, *Overcoming the Digital Divide: Distance-Learning Successes during the Pandemic*, Report No. 2020-46, North Billerica, MA, September 2020, https://www.curriculumassociates.com/-/media/mainsite/files/i-ready/iready-digital-divide-2020.pdf; and U.S. Department of Education, *ED COVID-19 Handbook*, OPEPD-IO-21-02, April 2021, https://www2.ed.gov/documents/coronavirus/reopening-2.pdf.

[116] U.S. Department of Education, *ED COVID-19 Handbook*, OPEPD-IO-21-02, April 2021, https://www2.ed.gov/documents/coronavirus/reopening-2.pdf.

require remediation or pull-out interventions to support a student in efforts to catch up from a potential loss.

The Handbook recommends strategies for accelerating learning, some of which could be implemented onsite in schools or through remote instruction. Accelerated learning could be promoted during the school day, or through after school or summer programs.[117]

- **In-Classroom Instruction**. This would require providing adequate training for teachers in instructional techniques focused on supporting students in real-time to engage with grade-level content in the classroom, and effectively differentiating instruction to reach all students regardless of their starting points. The use of diagnostic and formative assessments may aid in assessing student gaps in knowledge.

- **Tutoring.** High-dosage tutoring (i.e., personalized tutoring that is provided at least three times a week for at least 30 minutes by a certified teacher, paraprofessional, or other well-trained tutor) can be an effective means for accelerating learning, especially when provided during the school day.

- **Out-of-School Programs.** Out-of-school programs can provide another method for delivering accelerated learning, and their efficacy may be enhanced if the out-of-school program curriculum is aligned with the in-school curriculum and delivered by a certified teacher. Out-of-school programs may also provide an effective platform for conducting hands-on project-based learning to further a student's engagement with grade-level content.

- **Summer Enrichment Programs**. Summer programs can also be used to accelerate learning, perhaps especially if they are "voluntary, full-day lasting five to six weeks, include three hours of language arts and mathematics taught by a certified teacher each day, and include enrichment activities and experiences."[118]

Federal Support for Continued Use of Online Learning

In the last few months, most of the federal support regarding instruction has been focused on a return to in-person instruction. Along with the statements made by Secretary Cardona referenced earlier, President Biden said in an April 2021 TODAY Show interview that "based on the science and the CDC, [K-12 schools] should probably all be open."[119] While the American Rescue Plan Act (ARPA; P.L. 117-2) (see more in "American Rescue Plan Act of 2021") provides funding for transitioning students to in-person learning, such funding could also be used to facilitate online learning and remote instruction.

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[117] U.S. Department of Education, *ED COVID-19 Handbook*, OPEPD-IO-21-02, April 2021, https://www2.ed.gov/documents/coronavirus/reopening-2.pdf.; and Emma Dorn, Bryan Hancock, and Jimmy Sarakatsannis et al., *COVID-19 and learning loss—disparities grow and students need help*, McKinsey & Company, December 2020, https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-learning-loss-disparities-grow-and-students-need-help#.

[118] U.S. Department of Education, *ED COVID-19 Handbook*, OPEPD-IO-21-02, April 2021, p. 22, https://www2.ed.gov/documents/coronavirus/reopening-2.pdf.

[119] "President Biden talks about spending, race, pandemic, immigration in exclusive TODAY interview," the TODAY Show, April 30, 2021, at https://www.today.com/video/president-biden-talks-about-spending-race-pandemic-immigration-in-exclusive-today-interview-111106117892.

Aside from the legislation discussed in the next section, congressional interest seems to be focused on support for eliminating the digital divide and expanding access to broadband internet,[120] or on encouraging school districts to reopen schools.[121]

Existing Federal Programs

Prior to the COVID-19 pandemic, there were no federal programs explicitly targeting the development and improvement of remote learning at the elementary and secondary education level. Funding to improve school connectivity and technology was allowable under the ESEA and under the FCC's Universal Service Fund (USF) School and Libraries program (E-rate). As part of the federal response to the pandemic, the Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136), the Coronavirus Response and Relief Supplemental Appropriations Act, 2021 (Division M of P.L. 116-260), and ARPA authorized and provided funding that could be used by states and localities to develop and enhance remote learning solutions.

Pre-pandemic Federal Funding

E-rate[122]

E-rate provides subsidies for eligible elementary and secondary schools, as well as libraries, for internet access, internal network connections, and telecommunications services. While it is a source of support for improved internet connectivity at schools and libraries, E-rate does not typically provide funding to facilitate in-home internet connectivity for school children and their families.

As part of its response to the COVID-19 pandemic, the FCC took some actions to temporarily modify E-rate program rules to facilitate distance-learning objectives. The FCC waived its gift rules, through December 31, 2020,[123] to enable schools and libraries to solicit and accept improved connections and additional equipment and devices from service providers to facilitate distance learning during the pandemic without jeopardizing any existing E-rate funding.

Elementary and Secondary Education Act[124]

The ESEA is the primary source of federal aid for elementary and secondary education in the United States.[125]

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[120] For example, see the LIFT America Act (H.R. 1848) and the Broadband Parity Act of 2021 (S. 1884).

[121] For example, see the Reopen for Kids Act (S. 980) and H.Res. 293, *Expressing the sense of the House of Representatives that elementary and secondary schools in the United States should be opened for in-person instruction, and for other purposes.*

[122] For more information about the Universal Service Fund's E-Rate program, see CRS In Focus IF11520, *The Universal Service Fund and COVID-19: The FCC and Industry Response* and CRS Report R42524, *Rural Broadband: The Roles of the Rural Utilities Service and the Universal Service Fund.*

[123] See details at https://www.fcc.gov/document/e-rate-and-rhc-covid-related-waivers-extended.

[124] For more information on ESEA, see CRS Report R45977, *The Elementary and Secondary Education Act (ESEA), as Amended by the Every Student Succeeds Act (ESSA): A Primer.*

[125] The ESEA was most recently comprehensively amended by the Every Student Succeeds Act (ESSA; P.L. 114-95) in 2015.

Title I-A, the largest program (by dollar amount) in the ESEA, authorizes federal aid to LEAs for the education of disadvantaged children. Title I-A grants provide supplementary educational and related services to low-achieving and other students attending elementary and secondary schools with relatively high concentrations of students from low-income families, as well as eligible students who live in the areas served by these public schools but attend private schools. Title I-A funds are meant for improving student performance, which may include upgrading instructional technology used in the classroom or improving access to online learning for lower-achieving students in a school.

Another ESEA program that could potentially be used for providing support for online education in elementary and secondary schools is Title IV-A, the Student Support and Academic Enrichment (SSAE) grant program.[126] Title IV-A authorizes SSAE grants to improve students' academic achievement by increasing the capacity of states, LEAs, schools, and local communities to (1) provide all students with access to a well-rounded education, (2) improve school conditions for student learning, and (3) improve the use of technology in order to increase the academic achievement and digital learning of all students.

Recently Enacted Federal Programs

CARES Act[127]

As part of the CARES Act (P.L. 116-136, as amended), which was enacted on March 27, 2020, Congress created and appropriated $30.75 billion for the Education Stabilization Fund (ESF) "to prevent, prepare for, and respond to coronavirus, domestically or internationally."[128] More than $13 billion of these funds were allocated to allow states and LEAs to address needs at the elementary and secondary school level. Additionally, the Secretary of Education is required to reserve up to 1% of the total ESF appropriation to provide competitive grants to the states with the "highest coronavirus burden" to support activities under the ESF.

On July 29, 2020, the Secretary of Education announced the award of over $180 million in grant funding under this reservation of ESF funds to 11 states under the new Rethink K-12 Education Models Grant.[129] The grants, which range from $6 million to $20 million, have the stated goal of supporting states' efforts to create new, innovative methods for students to continue learning in ways that meet their needs. Uses of funds under this program include microgrants to help families get access to remote learning technology, statewide virtual learning, and new models for providing high-quality remote education. These grants were awarded to Georgia, Iowa, Louisiana, Maine, North Carolina, New York, Rhode Island, South Carolina, South Dakota, Tennessee, and Texas.

In addition to the 1% reservation for states with the highest coronavirus burden, the CARES Act appropriated about $3.0 billion for the Governor's Emergency Education Relief (GEER) Fund and approximately $13.2 billion for the Elementary and Secondary School Emergency Relief

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[126] For more information about SSAE grants, see CRS In Focus IF10910, *Student Support and Academic Enrichment (SSAE) Grants*.

[127] For more information on the elementary and secondary provisions of the CARES Act, see CRS In Focus IF11509, *CARES Act Elementary and Secondary Education Provisions*.

[128] 20 U.S.C. §3401.

[129] U.S. Department of Education, "Secretary DeVos Awards More than $180 Million to States Rethinking K-12 Education to Better Meet Students' Needs During Coronavirus Disruption," July 29, 2020, available at https://content.govdelivery.com/accounts/USED/bulletins/297dbbc.

(ESSER) Fund.[130] Both of these funds allow states and LEAs to spend parts of their allocations on technology and equipment necessary to enable and enhance online learning and to improve the ability of students to interact with their classroom instructors.

The CARES Act also included the Coronavirus Relief Fund, which designated $150 billion for payments to state, local, and tribal governments navigating the impact of the COVID-19 outbreak. States can use this funding to cover pandemic-related costs incurred from the beginning of March through the end of 2020 that were not anticipated in their budgets before March 2020, including improving broadband internet to increase access to online learning for K-12 students.[131] Amounts allocated to states, the District of Columbia, U.S. territories, and eligible units of local government were based on population as provided in the CARES Act.

Coronavirus Response and Relief Supplemental Appropriations Act, 2021

As Division M of the Consolidated Appropriations Act, 2021 (P.L. 116-260), Congress passed and President Trump signed into law the Coronavirus Response and Relief Supplemental Appropriations Act, 2021, which included a supplementary appropriation of $81.9 billion for the ESF. Of this amount, approximately $4.1 billion is reserved for the GEER Fund and approximately $54.3 billion for the ESSER Fund. Allowable uses of funds under both the GEER and ESSER Funds include providing technology for online learning for all students and purchasing educational technology that aids in the interaction between classroom instructors and their students, including low-income students and children with disabilities. Of the funds reserved for the GEER Fund, $2.8 billion must be reserved for Emergency Assistance to Non-Public Schools grants. This program also includes facilitation and enhancement of online and hybrid learning among its allowable uses of funds.

American Rescue Plan Act of 2021

ARPA (P.L. 117-2) was signed into law by President Biden in March 2021. It includes a total of $169.5 billion for programs administered by ED. Of this amount, approximately $122.8 is reserved for the ESSER Fund and $2.8 billion for Emergency Assistance to Non-Public Schools. Allowable uses of funds under both of these programs include purchasing education technology and providing other support for online and remote learning, as well as for transitioning to in-person learning. Additionally, $800 million of the ESSER Fund is reserved specifically for supporting students experiencing homelessness, including the continued identification of such students, as well as providing them with the necessary wraparound services and enabling them to attend school and fully participate in school activities.

Section 7402(c) of ARPA created and appropriated $7.2 billion for the Emergency Connectivity Fund to support the purchasing of eligible equipment, such as modems, routers, devices, and Wi-Fi hotspots, by schools and libraries eligible for the E-rate program.

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[130] For more information on the GEER and ESSER funds, see CRS In Focus IF11509, *CARES Act Elementary and Secondary Education Provisions*; and CRS Report R46378, *CARES Act Education Stabilization Fund: Background and Analysis*.

[131] Pew Research Center, "States Tap CARES Act to Expand Broadband," issue brief, November 16, 2020, https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2020/11/states-tap-federal-cares-act-to-expand-broadband.

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