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THE INSTITUTE FOR PUBLIC POLICY & ECONOMIC DEVELOPMENT



COVID-19: The Impact on K-12 Learning and Post-Secondary Workforce Development

April 2022

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Executive Summary

The purpose of the 2022 Education and Workforce Development Task Force report is to better understand the impact on K-12 learning and post-secondary workforce development through a national and local lens.

The timing of this report is appropriate as we are beginning to see the short-term impacts of COVID-19 and have sufficient data to start to look forward as to what long-term consequences might surface.

This task force report takes into consideration national data, research, and case studies, as well as information gathered through local interviews with K-12 educators and post-secondary and workforce development professionals.

The conclusions and recommendations within this report are separated into two categories: K-12 and the post-secondary and workforce development community. The recommended actions provided are grounded in national research as well as the problems and barriers that were described during semi-structured interviews in order to address the unique obstacles and concerns that COVID-19 presents for the education and workforce development community and offer possible opportunities that the K-12 and post-secondary and workforce development arenas might consider.

Introduction

Educators, educational researchers, employers, and policymakers have been presented with perhaps the biggest challenge of their careers over the last two years. And at this point, there continue to be unknowns that exist concerning the impact of COVID-19 on learning and its implications for workforce readiness.

The following report is a synthesis of secondary research and primary research conducted through Lackawanna and Luzerne counties. The result of this synthesis includes conclusions and recommendations for educators, administrators, employers, and workforce stakeholders to disseminate and take into consideration when creating and implementing educational and policy decisions while considering the consequent connections between the workforce and education.

Research Methods

The Institute obtained and examined secondary data from various sources, including peer-reviewed journals and professional and government websites. Each section of the report has sourced data.

Demographic and economic information was obtained from the American Community Survey (ACS), a questionnaire produced by the Census Bureau.

Primary data was obtained through semi-structured interviews conducted by The Institute. The interviews were conducted with K-12 educators and post-secondary and workforce development professionals to understand the impacts of COVID-19 on education and workforce development in Northeast Pennsylvania. The interviews allowed the research analyst to ensure that the conclusions and recommendations that were arrived at reflected the experience and problems indicated by local educators and workforce development professionals throughout COVID-19.

Five K-12 educators and five post-secondary and workforce development professionals were interviewed for ten semi-structured interviews. The number of interviews conducted was appropriate

for the investigated topics and provided rich data. The Institute developed the data collection strategy based on the research experience of the staff.

Local perspectives of the interviewees can be found throughout the report.

Labor Market Summary

In order to address Northeast Pennsylvania's needs in terms of workforce development and how the disruption in K-12 and higher education will affect the workforce, it is necessary to understand the composition of the region's labor market and past and projected trends in employment. This information can help stakeholders identify which occupations are growing or shrinking and where there may be gaps between the occupations in high demand, and the availability of workers qualified to fill those positions.

Demographic and Economic Overview

Data from the U.S. Census Bureau's American Community Survey from 2020 show that the labor force participation rate in Lackawanna and Luzerne Counties was about 58 percent, slightly lower than the statewide and national participation rate (both approximately 60 percent). Participation among the prime-age labor force (workers between the ages of 25 and 54) was 72.21 percent in Lackawanna and Luzerne Counties—slightly lower than the national rate (75%) and somewhat lower than the statewide rate (72.75%). The region's median household income and per capita income are both noticeably lower than those of Pennsylvania and the United States. It is worth noting that the median age in the two-county region is comparatively high at 42.3 years, and the region's population is gradually declining in size.

Demographic and Economic Overview						
	Percent			Value		
	Lackawanna and Luzerne Counties	Pennsylvania	USA	Lackawanna and Luzerne Counties	Pennsylvania	USA
Population (ACS)	0.16%	3.92%	100%	541,490	13,002,700	331,449,281
Median Age	-	-	-	42.3	40.8	38.5
Population Annual Average Growth	-	-0.3%	0.13%	-	-39,008	444,464
Labor Force Participation Rate and Size (civilian population 16 years and over)	58.2%	60%	60.2%	315,147	7,801,620	198,869,569
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	72.21%	72.75%	75.14%	196,210	4,830,666	128,356,427
Veterans Labor Force Participation Rate and Size, Age 18-64	73.35%	76.58%	76.53%	10,532	239,525	6,618,533
Median Household Income	82.02%	96.58%	100%	$53,899	$63,463	$65,712
Per Capita Income	86.31%	100.73%	100%	$29,436	$34,352	$34,103

Source: American Community Survey, 2015-2019

Due to the impact of the COVID-19 pandemic, the Census Bureau changed the 2020 American Community Survey (ACS) release schedule. Instead of providing the standard 1-year data products, the Census Bureau released experimental estimates from the 1-year data. This includes a limited number of data tables for the nation, states, and the District of Columbia. They are posted on the 2020 ACS 1-Year Experimental Data Release page; they are not available on data.census.gov.

Educational Attainment

A larger share of adults in Lackawanna and Luzerne Counties have a high school diploma as their highest level of educational attainment than in Pennsylvania or the United States as a whole. While a slightly larger share of adults in the two-county region has earned associate's degrees than the state and national rates, the region has a lower attainment rate of bachelor's and postgraduate degrees. Approximately 19 percent of adults between the ages of 25 and 64 in Lackawanna and Luzerne Counties have earned an associate's degree or higher, compared to 8.6 percent in Pennsylvania and 8.6 percent nationally. Credentialing and certificates are not measured, yet these types of higher education completions are essential to many existing and new occupations.

Educational Attainment, Age 25-64				
	Lackawanna and Luzerne Counties		Pennsylvania	USA
No High School Diploma	10.2%	8.9%	9%	11.4%
High School Graduate	39%	36.9%	34.4%	26.9%
Some College, No Degree	17.9%	16.6%	15.7%	20%
Associate's Degree	10.1%	9.3%	8.6%	8.6%
Bachelor's Degree	14.1%	17.9%	19.5%	20.3%
Postgraduate Degree	8.7%	10.4%	12.8%	12.8%

Source: American Community Survey, 2015-2019

Due to the impact of the COVID-19 pandemic, the Census Bureau changed the 2020 American Community Survey (ACS) release schedule. Instead of providing the standard 1-year data products, the Census Bureau released experimental estimates from the 1-year data. This includes a limited number of data tables for the nation, states, and the District of Columbia. They are posted on the 2020 ACS 1-Year Experimental Data Release page; they are not available on data.census.gov.

Employment Trends

As of the second quarter of 2021, there were about 237,000 employed workers in Lackawanna and Luzerne Counties. More than a third of these workers (86,719, or 36.5 percent) were employed in the region's three largest major occupation categories. These occupation categories, defined using 2-digit Standard Occupational Classification (SOC) codes, are Office and Administrative Support (31,237 workers); Transportation and Material Moving (32,369); and Sales and Related Occupations (22,113).

Lackawanna-Luzerne Counties, 2021Q2[1]

		Current						5-Year History			1-Year Forecast			
SOC	Occupation	Empl	Mean Ann Wages[2]	LQ	Unempl	Unempl Rate	Online Job Ads[3]	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
53-0000	Transportation and Material Moving Occupations	32,369	$37,000	1.59	3,527	10.8%	2,100	2,136	1.4%	3,835	1,439	2,589	-193	-0.6%
43-0000	Office and Administrative Support Occupations	31,237	$39,000	1.04	2,399	7.4%	1,142	-4,739	-2.8%	2,985	1,428	2,007	-449	-1.4%
41-0000	Sales and Related Occupations	22,113	$39,100	0.97	2,437	10.4%	1,716	-3,388	-2.8%	2,658	1,170	1,796	-308	-1.4%

Lackawanna-Luzerne Counties, 2021Q2[1]

		Current					5-Year History			1-Year Forecast				
SOC	Occupation	Empl	Mean Ann Wages[2]	LQ	Unempl	Unempl Rate	Online Job Ads[3]	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
35-0000	Food Preparation and Serving Related Occupations	17,177	$24,400	0.97	3,670	18.0%	992	-3,622	-3.8%	2,860	1,186	1,731	-56	-0.3%
51-0000	Production Occupations	17,121	$39,500	1.25	1,656	9.3%	609	-757	-0.9%	1,548	635	1,223	-310	-1.8%
29-0000	Healthcare Practitioners and Technical Occupations	16,242	$79,400	1.15	521	3.2%	1,980	-325	-0.4%	931	423	504	3	0.0%
31-0000	Healthcare Support Occupations	14,516	$30,300	1.35	1,003	6.8%	745	895	1.3%	2,053	913	959	181	1.2%
11-0000	Management Occupations	12,028	$105,500	0.75	502	4.2%	726	-6	0.0%	915	285	689	-59	-0.5%
25-0000	Educational Instruction and Library Occupations	11,687	$58,500	0.90	839	7.1%	266	-1,280	-2.1%	950	454	549	-53	-0.4%
13-0000	Business and Financial Operations Occupations	10,201	$66,800	0.74	446	4.4%	626	-170	-0.3%	880	271	671	-62	-0.6%
49-0000	Installation, Maintenance, and Repair Occupations	8,828	$47,200	0.97	642	7.0%	597	-380	-0.8%	759	266	565	-73	-0.8%
47-0000	Construction and Extraction Occupations	8,746	$51,700	0.79	985	10.2%	194	-242	-0.5%	874	276	663	-65	-0.7%
37-0000	Building and Grounds Cleaning and Maintenance Occupations	6,266	$30,700	0.81	766	10.8%	338	-912	-2.7%	779	341	463	-25	-0.4%
39-0000	Personal Care and Service Occupations	5,286	$27,800	0.88	976	16.0%	166	-602	-2.1%	762	345	430	-12	-0.2%
15-0000	Computer and Mathematical Occupations	4,826	$76,100	0.65	159	3.4%	339	-309	-1.2%	349	80	273	-5	-0.1%
21-0000	Community and Social Service Occupations	4,714	$46,900	1.11	113	2.5%	553	-318	-1.3%	546	165	342	39	0.8%
33-0000	Protective Service Occupations	4,467	$51,200	0.88	403	8.2%	262	-658	-2.7%	440	212	266	-38	-0.9%
17-0000	Architecture and Engineering Occupations	2,981	$76,700	0.73	119	4.0%	214	-152	-1.0%	185	67	155	-37	-1.2%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	2,919	$43,900	0.69	341	11.0%	104	-512	-3.2%	278	109	199	-30	-1.0%
23-0000	Legal Occupations	1,501	$79,700	0.73	38	2.6%	26	-68	-0.9%	84	36	58	-10	-0.6%
19-0000	Life, Physical, and Social Science Occupations	1,434	$71,700	0.66	63	4.2%	84	-55	-0.7%	114	28	96	-11	-0.8%
45-0000	Farming, Fishing, and Forestry Occupations	445	$25,100	0.28	73	10.9%	8	83	4.2%	64	17	52	-5	-1.0%
00-0000	**Total - All Occupations**	**237,104**	**$47,900**	**1.00**	**21,678**	**8.7%**	**13,788**	**-15,381**	**-1.2%**	**24,914**	**10,148**	**16,280**	**-1,514**	**-0.6%**

Source: JobsEQ®

Data as of 2021Q2 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data are as of 2020 and represent the average for all Covered Employment

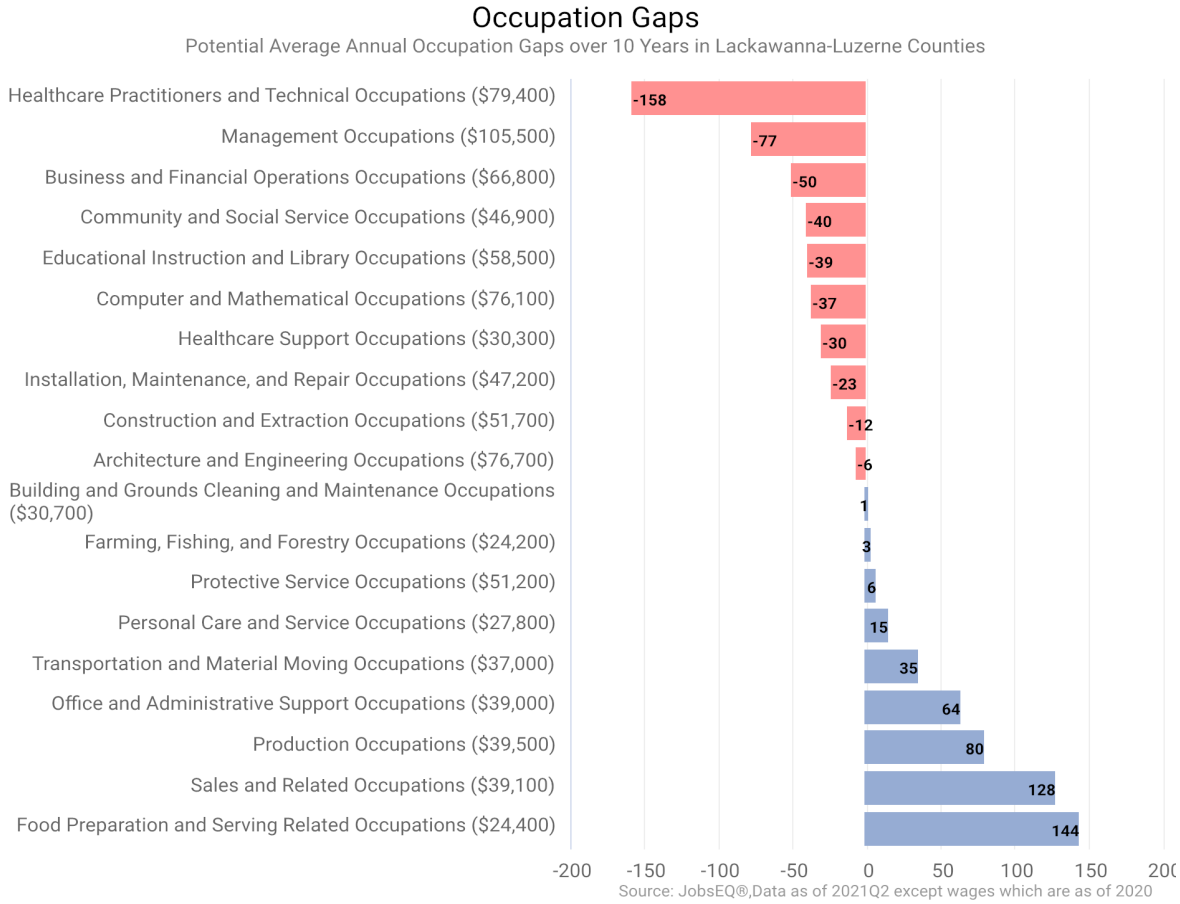
3. Data represent found online ads active within the last thirty days in the selected region; data represents a sampling rather than the complete universe of postings. Ads lacking zip code information but designating a place (city, town, etc.) may be assigned to the zip code with greatest employment in that place for queries in this analytic. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list).

A large share of workers in Northeast Pennsylvania is employed in jobs directly related to healthcare, reflecting the healthcare industry's status as one of the largest employers in the region. Together, the categories of Healthcare Support Occupations and Health Care Practitioners and Technical Occupations employ more than 30,758 workers. This combined group of healthcare-related occupations would be the region's third-largest occupation category.

Occupation Gaps

As mentioned above, the principal occupation category with the most significant projected occupation gap is healthcare practitioners and technical occupations, with an expected average annual deficit of 158 workers. The next largest labor shortages are expected to be in management occupations (77 workers per year) and business and financial operations (50 workers per year). Shortages are also likely among healthcare support occupations, installation, maintenance, and repair occupations, and construction and architecture occupations.

Large surpluses are expected among food preparation and serving occupations and sales and related occupations, even though both categories are expected to decline in size over the next ten years (especially sales), and business closures have significantly impacted both during the pandemic. Both categories saw larger declines in employment in the last year than any other occupation category.



COVID-19 and its Impact on K-12 Education

Overview

COVID-19 pandemic and lockdown have brought about a sense of fear and anxiety around the globe. This phenomenon has led to short-term as well as long-term academic, psychosocial, and mental health implications for children and adolescents. The quality and magnitude of impact on minors are determined by many vulnerability factors like developmental age, educational status, pre-existing mental health conditions, being economically underprivileged, or being quarantined due to infection or fear of infection (Singh et al., 2020). Throughout the research, it has been indicated that this pandemic may continue to have increased long-term adverse consequences on children and adolescents (Shen et al., 2020).

The US education system was not built to deal with extended shutdowns like those imposed by the COVID-19 pandemic. Local K-12 educators highlighted the chaotic state that the shutdown spurred. Teachers, administrators, and parents have worked hard to keep learning alive; nevertheless, these efforts are not likely to provide the quality of education delivered in the classroom (Dorn et al., 2020).

In the educational world, students have also experienced deficits in learning due to new approaches to teaching that were implemented. In numerous online surveys conducted since March, teachers have consistently indicated they were not prepared to teach online. A significant percentage of their students did not even log in to complete assignments. Teachers also taught less new material, especially in high-poverty schools (DeWitt, 2020; Herold & Yettick, 2020). This lack of preparation unquestionably impacted teaching ability, which impacted student learning.

When schools shifted from a traditional school building setting to attendance via the Internet, families came under new stressors. It is increasingly clear that families depended on schools for much more than math and reading. Shelter, food, health care, and social well-being are all part of what children and adolescents, as well as their parents or guardians, depend on schools to provide (Hooferman & Secord, 2021).

Many families have been impacted negatively by the loss of wages, leading to food insecurity and housing insecurity; some of the loss is a consequence of the need for parents to be at home with young children who cannot attend in-person school. There is evidence that this economic instability leads to an increase in depression and anxiety. In one K-12 survey, 34.71 percent of parents reported behavioral problems in their children that they attributed to the pandemic and virtual schooling (Hoofman & Secord, 2021).

The transition to virtual learning affected those in the K-12 arena and those enrolled in post-secondary institutions, further exacerbating workforce readiness issues.

The following report focuses on the short and long-term barriers that have arisen or intensified by COVID-19 as told through secondary and primary research. Five local K-12 educators and five local post-secondary education and workforce development community members were interviewed to gain a perspective of the effects of COVID-19 in Northeast Pennsylvania.

"It was chaotic and abrupt, to say the least. There was a lot of confusion that day. I'll never forget. We knew something was coming, that we would be shut down. We did not know for how long, and we were told pretty much that morning to get things ready to send home with the children. There was no guidance. We were told, do what you can, but in those first few months at the end of 2020, there was no directive."

The Impact of COVID-19 on K-12 Learning

The term *unfinished learning* captures the reality that students were not given the opportunity to complete all the learning they would have completed in a typical year (Dorn et al., 2021).

As the 2020–21 school year began, just 40 percent of K–12 students were in districts that offered any in-person instruction. By the end of the year, more than 98 percent of students had access to some form of in-person learning, from the traditional five days a week to hybrid models (Dorn et al., 2021).

K–12 schools' operational models—fully remote, entirely in-person, or hybrid—varied considerably in the 2020–2021 school year. Fully remote schools tended to serve higher percentages of students of color and low-income students. Reported instructional time and curriculum coverage were significantly lower in fully remote schools. Remote teachers' estimates of student assignment incompletion and absenteeism were almost twice as high as those of teachers in entirely in-person settings (Kaufman & Diliberti, 2021).

Nearly all schools providing any in-person instruction had at least some safety measures, such as masks, in place. However, teachers' opinions about the necessity of safety measures varied depending on their schools' operational models (Kaufman & Diliberti, 2021)

An analysis of Curriculum Associates' i-Ready in-school assessment results of more than 1.6 million elementary school students across more than 40 states compared students' performance in the spring of 2021 with similar students prior to the pandemic (Dorn et al., 2021).

The analysis found that the impact of the pandemic on K–12 student learning was significant. By the end of the 2020-21 school year, students were, on average, five months behind in math and four months behind in reading (Dorn et al., 2021). Local K-12 educators specifically spoke to the difficulty of trying to engage students virtually, which affected student learning.

A report from Curriculum Associated (June 2021) suggests that more first and second graders ended the 2020-21-year two or more grade levels below expectations than in any previous year, which is particularly concerning given the critical importance of early reading for later academic success (Dorn et al., 2021).

The 2020–2021 school year has been like no other. Because of the COVID-19 pandemic, most kindergartens through grade 12 (K–12) schools across the United States have reduced in-person learning for students to a few days per week or have been physically closed for most of the school year. In a survey of teachers and principals to provide a picture of students' learning experiences in K–12 schools that have adopted a variety of operational models (e.g., fully in-person, hybrid, fully remote) during the 2020–2021 school year (Kaufman & Diliberti, 2021).

> *"Once they reach the ninth grade tenth grade, we're not getting as many kids to stick it out until then. So, ultimately, it's sad to say, but I feel like we've kind of retrograded back to the old days… The longer I'm teaching, fewer and fewer kids see the value in that high school diploma… for a while there we had more kids who are aspiring to go to college and that was the goal. Now it seems more and more kids are just here purely by law because they have to be."*

The findings consistently indicate that remote schooling was associated with fewer instructional opportunities and potentially poorer student outcomes compared with in-person schooling. These outcomes include less teacher-reported curriculum coverage, more teacher-reported student absenteeism, and lower principal-reported achievement in mathematics and English language arts (ELA). Local K-12 educators spoke to the difficulty of trying to play "catch up" and that the gap has not been bridged despite efforts.

"We were teaching harder than we ever thought we would. We were trying to pull rabbits out of hats, trying to do things to engage them because we weren't getting the, the face time, and it was like nothing was working for the kids that weren't coming. You couldn't reach through the screen and get them to sit in front."

Nevertheless, teachers and principals who have been in remote settings this school year appear to be far more comfortable with the idea of providing remote instruction in some form, even after the pandemic recedes. Taken together, these findings suggest that the pandemic has set schools on diverging pathways depending on whether they were primarily remote or in-person over the course of this school year (Kaufman & Diliberti, 2021).

High schoolers were more likely to drop out of school, and high school seniors, especially those from low-income families, were less likely to go on to postsecondary education (Dorn et al., 2021). Local educators described a similar trend in line with national data, noting a decrease in the number of students remaining in high school or pursuing a college degree.

School Districts' Responses

School districts in the United States are responding to the coronavirus disease 2019 (COVID-19) pandemic in significantly different ways. The authors of this report fielded the third American School District Panel (ASDP) survey in June 2021 to discover what changes districts are making to their academic and non-academic offerings for the upcoming 2021–2022 school year and whether parental demand has played any role in prompting districts to make these changes (Schwartz & Diliberti, 2021).

"Academically speaking I can attest to the losses in Math. This year I would say the majority of students are at least a year behind. They have not mastered basic mathematical concepts such as multiplication, addition and subtraction facts. They are struggling with place value, rounding etc. We have been trying to play "catch up" all year. However, even in returning to previous years curriculum, I do not feel students are retaining material. We have increased tutoring, explored curriculum additives to bridge the gap between materials students have lost but this doesn't seem to be very effective."

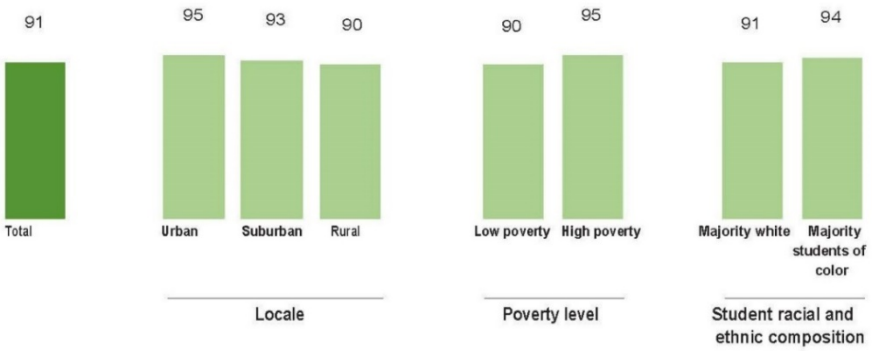
In this report, the authors summarize key ASDP findings based on the responses of 292 district leaders after weighing their responses to make them nationally representative. Survey results suggest that while public schools are expanding their nonacademic offerings, much of their academic offerings for 2021–2022 remain the same. The authors examine differences between pre-pandemic and 2021–2022 offerings among district subgroups in the areas of summer programming, tutoring, grade retention practices, technology-related services, student health and weekend meals, academic recovery measures, and scheduling (Schwartz & Diliberti, 2021).

The authors also found that most district leaders did not perceive a strong parental demand for changes to their children's schooling; however, there were some notable exceptions among leaders of urban, suburban, and majority–students of color districts, even though the correlation between perceived

demand and district provision is currently weak. Parents' demands may still change public education in the long run, but the authors did not find evidence for this thus far (Schwartz & Diliberti, 2021). Districts have expanded services for 2021–2022. Nine out of ten district leaders said their district offered summer programming in 2021. Nearly all district leaders (91 percent) indicated that their districts offered summer programming for students in 2021. This was true across all district subgroups, with at least 90 percent of districts in each subgroup offering summer programs (Schwartz & Diliberti, 2021).

FIGURE 1

Percentage of Districts That Offered Summer Programming in 2021



NOTES: This figure depicts response data from the survey question: "Which of the following, if any, did your [district/CMO] offer or enact for spring or summer 2021? Summer program(s)" (n = 292). There were no statistically significant differences in the percentage of districts that offered summer programming in 2021 across district subgroups.

With regard to retaining students in Grade for 2021–2022, twenty-four percent of district leaders indicated they offered families the option to voluntarily keep their children in the same grade from 2020–2021 for the 2021–2022 school year. In particular, a high percentage of leaders of high-poverty districts (35 percent) and rural districts (28 percent) reported offering families a "do-over" year. It is unknown what percentage of families accept this offer (Schwartz & Diliberti, 2021).

According to the American School District Panel (ASDP) survey, one-quarter of districts allowed families to choose a "do-over" year for 2021-2022, a little more than eight out of ten districts will offer tutoring (seven out of ten were already doing this pre-pandemic, and one in ten are newly offering it), and the most substantive academic change was that one-quarter of districts had altered their 2021-2022 school schedule in a way that could increase time for academic instruction (Schwartz & Diliberti, 2021).

Fewer districts, only 15 percent, are mandating the retention of students in grade for the 2021–2022 school year. This percentage was consistent across all district subgroups (Schwartz & Diliberti, 2021). While it is not known the share of districts that have historically mandated retention, it is known that 18 states had mandatory retention laws in place for third-graders (the earliest grade in which all states must assess students for accountability purposes) before the pandemic began (Modan, 2019 as cited in Schwartz & Diliberti, 2021). Federal data indicate that two percent of students nationally were held back in a typical pre-pandemic school year (National Center for Education Statistics, 2019, as cited in Schwartz & Diliberti, 2021). The research evidence on the academic and behavioral effects of mandatory grade retention is mixed; there are potentially beneficial effects in early grades for struggling readers (Schwartz & Diliberti, 2021).

With regard to retaining students in Grade for 2021–2022, twenty-four percent of district leaders indicated they offered families the option to voluntarily keep their children in the same grade from 2020–2021 for the 2021–2022 school year. In particular, a high percentage of leaders of high-poverty districts (35 percent) and rural districts (28 percent) reported offering families a "do-over" year. It is unknown what percentage of families accept this offer (Schwartz & Diliberti, 2021).

According to the American School District Panel (ASDP) survey, one-quarter of districts allowed families to choose a "do-over" year for 2021-2022, a little more than eight out of ten districts will offer tutoring (seven out of ten were already doing this pre-pandemic, and one in ten are newly offering it), and the most substantive academic change was that one-quarter of districts had altered their 2021-2022 school schedule in a way that could increase time for academic instruction (Schwartz & Diliberti, 2021).

Many local school districts went from a number grade system to a pass/fail system for the end of the 2019-2020 year. One educator stated, "we didn't feel there was any other way to be fair because we couldn't hold the circumstances of the pandemic against the kids. It was not their fault….It's not like they were withholding internet service. They couldn't afford it."

Educators from local districts generally indicated that they do not have specific plans set in place to attempt to close the gap in learning that has been created. However, in some instances, schools offer tutoring programs and give parents the option for their child to remain in their current grade for another year. One local educator noted that the attitude among their district is "don't worry about getting them through the material," and some higher-level administrators are setting unrealistic expectations for the students, along with mixed signals being sent and teachers not having a lot of support. According to educators, there is a lot of stress; teachers are burning out and do not feel supported, making it all the more difficult to support their students.

Short-Term and Long-Term Impacts

McKinsey & Company created statistical models to estimate the potential impact of school closures on learning. Their research found that learning loss during school closures "varies significantly by access to remote learning, the quality of remote instruction, home support, and the degree of engagement." The estimated learning loss for students in schools impacted by school closures and part-time schedules throughout the 2020-21 school year range from an average of 3-4 months of learning loss for students with access to average-quality remote learning, to 7-11 months of learning loss for students with low-quality remote learning resources, to 12-14 months of learning loss for students who did not receive any instruction during school closures, compared to typical in-classroom learning (Dorn et al., 2020).

Although students at the best full-time virtual schools can do as well as or better than those at traditional ones, most studies have found that full-time online learning does not deliver the academic results of in-class instruction. Moreover, in 28 states, with around 48 percent of K–12 students, distance learning has not been mandated. As a result, many students may not receive any instruction until schools reopen. Even in places where distance learning is compulsory, significant numbers of students appear to be unaccounted for. In short, the hastily assembled online education currently available is likely to be both less effective, in general, than traditional schooling and to reach fewer students as well (Dorn et al., 2020).

Middleton (2020) found that student learning was significantly impacted by stress, anxiety, illness, being forced to learn in a vastly different method than previously experienced, and the increased potential to fall behind due to lack of access to materials.

The quick transition to online instruction in response to the pandemic resulted in little time for training teachers in online methods, resulting in varying levels of instruction even within the same school. Some school districts and teachers held synchronous lessons to provide live instruction, while others used asynchronous methods to post lessons online. Initially, teachers focused on reinforcing previously taught material and did not introduce new material (Middleton, 2020).

Middleton suggests that the divergence in instruction during the last quarter of the 2019-2020 academic year will impact standardized state and national test scores for two years or longer, making it difficult to compare variances in test scores to prior performance (Middleton, 2020).

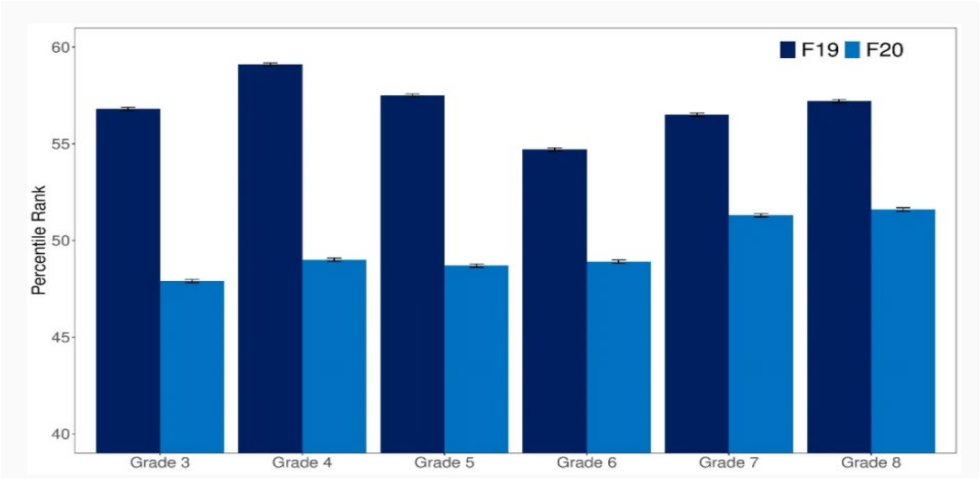
When comparing students' median percentile rank for fall 2020 to those for fall 2019, there is good news to share: Students in grades 3-8 performed similarly in reading to same-grade students in fall 2019. While the reason for the stability of these achievement results cannot be easily pinned down, possible explanations are that students read more on their own, and parents are better equipped to support learning in reading compared to other subjects that require more formal instruction (Dorn et al., 2020).

From a local educational perspective, students are continuing to struggle in both reading and math during the 2021-2022 school year, with one third grade teacher stating, "When we took the diagnostic tests, my class predominantly was reading at a kindergarten first-grade level. I have students in here that don't know letters, don't know letter sounds, they cannot add two numbers together. They don't have a number sense. So, they don't know that one more than seven is eight. There's a huge loss of learning."

Similarly, the news across the nation in math is quite worrisome. Reported instructional time and curriculum coverage were significantly lower in fully remote schools. Seventy-four percent of principals in fully remote schools estimated that their students' average achievement in mathematics was below grade level in spring 2021, compared with 63 percent in hybrid settings and 46 percent in fully in-person settings (Kaufman & Diliberti, 2021).

The following figure below shows the median percentile rank in math by grade level in fall 2019 and fall 2020. As the figure indicates, students' math achievement in 2020 was about five to 10 percentile points lower than same-grade students the prior year (Dorn et al., 2020).

MAP Growth Percentiles in Math by Grade Level in Fall 2019 and Fall 2020 (Dorn et al., 2020).



Source: *Author calculations with MAP Growth data.*

Notes: *Each bar represents the median percentile rank in a given grade/term.*

Beyond academics, students also missed out on programming, such as entrepreneurial and STEM programs held in the classroom prior to COVID. Workforce development specialists noted that most of these programs were offered virtually. Still, there was already Zoom fatigue, and students were not engaged, and "if they did enroll, they dropped off halfway through."

Socio-Emotional Development

The crisis also impacted the broader health and well-being of students. According to a survey of over 16,000 parents across all U.S. states, roughly 80 percent of parents had some level of concern about their child's mental health or social and emotional health and development since the pandemic began, with more than 35 percent of parents very or extremely concerned about their children's mental health (Dorn et al., 2021).

Many families report that the stress of the pandemic has led to a poorer diet in children with an increase in the consumption of sweets and fried foods. Shelter at home orders and online education have led to fewer exercise opportunities. Research carried out by Ammar and colleagues found that daily sitting had increased from five to eight hours per day, and binge eating, snacking, and the number of meals was all significantly increased owing to lockdown conditions and stay-at-home initiatives. There is growing evidence in animal and human models that diets high in sugar and fat can play a detrimental role in cognition and should be of increased concern in light of the pandemic (Hoofman & Secord, 2021).

The family stress elicited by the COVID-19 shutdown is a particular concern because of compiled evidence that adverse life experiences at an early age are associated with an increased likelihood of mental health issues as an adult. Early evidence shows that children ages six to 18 years experienced a significant increase in their expression of "clinginess, irritability, and fear" during the early pandemic school shutdowns. These emotions associated with anxiety may negatively impact the family unit, which was already stressed due to the pandemic (Hoofman & Secord, 2021). Another primary concern is the length of isolation many children have had to endure since the pandemic began and what effects it

might have on their ability to socialize. The school, for many children, is the agent for forming their social connections as well as where early social development occurs. Noting that academic performance is also declining, the pandemic may be creating a snowball effect, setting back children without access to resources from which they may never recover, even into adulthood (Hoofman & Secord, 2021).

Local educators spoke to the stressors many students had even prior to COVID-19 and the "radical shift of protocol for social interaction with the students" to prevent the spread of COVID, along with masking and social distancing in the classroom, stating that it feels that the students miss out on the [social] component of it. One educator spoke to a "learned helplessness" among students, especially in elementary school. This helplessness was attributed to their experiences with strictly online learning. Now that they are back in person, "their default reaction is, 'I can't do this. I need help.' regardless of if they are in first or fourth grade. And that "there is a hidden curriculum that needs development in that regard."

"They had so many stressors to begin with before the pandemic. And they don't have free internet anymore. That went to the wayside this year. So, you send them home with a Chromebook to do work, but they don't have internet access so they can't do it. So, they've got a lot to deal with, they're coping with a lot and some of them have lost family members because of Covid. Some of them are hearing at home that it's a hoax and you have to work with them and educate them on things like that as well."

Predictions from data analysis of school absenteeism, summer breaks, and natural disaster occurrences are imperfect for the current situation. Still, all indications are that we should not expect all children and adolescents to be affected equally. Although some children and adolescents will likely suffer no long-term consequences, COVID-19 is expected to widen the already existing educational gap from socioeconomic differences, and children with learning differences are expected to suffer more losses than neurotypical children (Hoofman & Secord, 2021).

High schoolers have lost a great deal during this pandemic. What should have been a time of establishing more independence has been hampered by shelter-in-place recommendations. Graduations, proms, athletic events, college visits, and many other social and educational events have been altered or lost and cannot be recaptured (Hoofman & Secord, 2021).

Adolescents reported higher rates of depression and anxiety associated with the pandemic, and in one study, 14.4 percent of teenagers reported post-traumatic stress disorder, whereas 40.4 percent reported having depression and anxiety. In another survey, adolescent boys reported a significant decrease in life satisfaction from 92 percent before COVID to 72 percent during lockdown conditions. For adolescent girls, the decline in life satisfaction was from 81 percent before COVID to 62percent during the pandemic, with the oldest teenage girls reporting the lowest life satisfaction values during COVID-19 restrictions. During the school shutdown for COVID-19, 21 percent of boys and 27 percent of girls reported increased family arguments. Combining all of these reports with decreasing access to mental health services due to pandemic restrictions, it becomes complicated for parents to address their children's mental health and educational needs. (Hoofman & Secord, 2021).

A survey of 24,155 residents of Michigan projected an escalation of suicide risk for lesbian, gay, bisexual, transgender youth as well as those youth questioning their sexual orientation (LGBTQ) associated with increased social isolation. There was also a 66-percent increase in reports of domestic violence for LGBTQ youth during shelter in place. LGBTQ youth are yet another example of those already at increased risk of having disproportionate effects of the pandemic (Hoofman & Secord, 2021).

Increased social media use during COVID-19, along with traditional forms of education moving to digital platforms, has led to the majority of adolescents spending significantly more time in front of screens. Excessive screen time is associated with poor sleep, sedentary habits, mental health problems, and physical health issues. With decreased access to physical activity, especially in crowded inner-city areas, and increased dependence on screen time for schooling, it is more challenging to craft easy solutions to the screen time issue (Hoofman & Secord, 2021).

Despite increased levels of concern among parents, the amount of mental health assessment and testing done for children is 6.1 percent lower than it was in 2019—the steepest decline in assessment and testing rates of any age group (Dorn et al., 2021).

According to the American School District Panel (ASDP) survey, seven out of ten districts provide mental health programming for students. Five out of ten were already doing this pre-pandemic, while two in ten are newly offering this service (Schwartz & Diliberti, 2021).

Districts do not perceive strong parental demand for changes to schooling. However, as many as four to five out of ten leaders from three types of districts (urban, suburban, and majority students of color) said parents have "strongly demanded" social and emotional learning, more teacher-parent communication, or a fully remote schooling option (Schwartz & Diliberti, 2021).

The focus on student mental health services for fall 2021 is consistent with the high degree of concern that district leaders expressed about students' mental health in the February 2021 ASDP survey (Schwartz et al., 2021).

Nearly six in ten district leaders indicated they would contract with an outside organization to provide mental health services. In contrast, only 13 percent of districts will contract out "physical health services." This information is interpreted to mean that districts' physical health services will continue to rely primarily on district-employed school nurses because 84 percent of public schools had at least one full- or part-time nurse on staff as of 2016 (Spiegelman, 2020).

Fewer districts plan to offer school-based health clinics and telehealth sessions for students in 2021–2022 (22 and 14 percent, respectively) than mental health services. However, those services have also increased from pre-pandemic levels (Schwartz & Diliberti, 2021).

Some district subgroups stand out in this area. For example, 81 percent of suburban districts, compared with 74 percent of urban districts and 64 percent of rural districts, plan to offer mental health programming for students in the 2021–2022 school year. In a similar pattern, 74 percent of urban districts and 63 percent of suburban districts plan to offer trauma-informed practices compared with only 44 percent of rural districts. This could be the result of many suburban districts newly adding trauma-informed practices during the pandemic. In contrast, most urban districts offering this service in 2021–2022 were already doing so before the pandemic began (Schwartz & Diliberti, 2021).

Meanwhile, a relatively high percentage of urban districts (39 percent) plan to offer school-based health clinics—all of which were already offering this service before the pandemic began. And 23 percent of majority–students of color districts will offer telehealth sessions in the 2021–2022 school year—perhaps because a higher percentage of majority– students of color districts than of majority-white districts have newly added these services during the pandemic (12 percent versus 3 percent, respectively) (Schwartz & Diliberti, 2021).

Several teachers described the increase in students with mental health issues, including social anxiety, depression, and a decrease in students' motivation. One teacher specifically noted that they've "had a lot of kids having a harder time practicing appropriate emotional responses to varying degrees in different circumstances." Beyond the switch to a virtual classroom throughout COVID, students also lost gym classes, extracurricular activities, access to the school nurse, the school guidance counselor, drug and alcohol programs, and dental programs.

During these times, it is more important than ever for pediatricians to check in on patients' mental health with queries about how school is going, how patients are keeping contact with peers, and how they are processing social issues related to violence. Queries to families about the need for assistance with food insecurity, housing insecurity, and access to mental health services are necessary during this time of public emergency (Hoofman & Secord, 2021).

Technology

Along with the job and career disruption that COVID-19 has caused for many American workers, it has also disrupted school routines for their children. Throughout the course of the pandemic, many schools have closed their classrooms in an effort to prevent the virus from spreading. As a result, many children are at home, using computers to try to keep up with their lessons online (Carnevale, 2021).

This situation can be especially frustrating for K-12 students who lack appropriate equipment to plug into their virtual schools. It also exacerbates inequality – children in lower-income households are just as likely as those in higher-income households to be taking classes online. Still, they are less likely to have the technology they need for virtual learning when in-person classes are canceled (Carnevale, 2021).

Several educators spoke to the frustrations of switching to virtual instruction at the beginning of the pandemic. Instructors noted a large learning curve for the students switching to virtual school, adding that a number of them did not have adequate computer access. Beyond students experiencing difficulties, one educator noted that "a lot of my colleagues were spinning out because they relied on pencil and paper. We're not familiar with the technology at all, and some had a much longer transition than me.

One local educator noted that "the immediate impact of students switching to virtual, especially younger grades, was a loss of instructional time and attention. These students could not stay focused in a virtual setting, and the vast amount of instructional time was spent redirecting or trying to fix technology problems." Another educator stated that "if it wasn't one thing, it was another" concerning virtual instruction and computer issues for students.

While school closures have fluctuated in response to local infection levels, online instruction rates have remained high throughout the pandemic. According to the Household Pulse Survey, most K–12 students moved to some type of distance-learning format in the spring, with 72 percent of households with schoolchildren reporting that classes had moved online between April 23 and May 5, 2020. Those shares had barely budged seven months later, with 71 percent of households with schoolchildren reporting between November 25 and December 7, 2020, that classes were conducted online during the current school year (Carnevale, 2021).

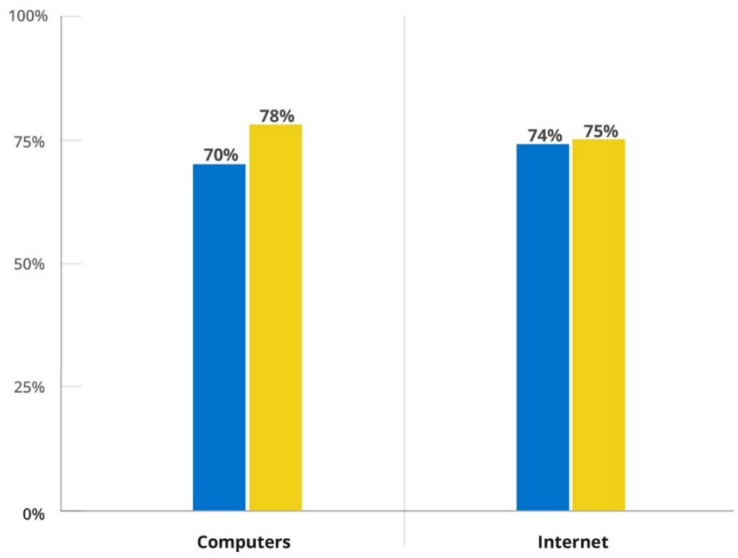
Meanwhile, resource gaps among students are becoming more substantial than ever as a majority of households with schoolchildren grapple with distance learning. During the pandemic, students in lower-income households have been more likely than students in upper-income households to experience food insecurity, housing instability, and job losses within their households. With lower-income households worried about basic necessities, their children are less likely to have tutors to help with their virtual schoolwork than are children in higher-income households. In addition, students in lower-income households are less likely to have the technological resources — such as computers and internet access — that are essential for virtual learning (Carnevale, 2021). Even when there was assistance to address internet service inequities, local educators spoke to the difficulties students experienced with internet access even after companies began offering the internet for free.

"We had companies willing to set families up with internet for free, but then everything started to backlog. And there were so many people waiting, and so many people going to get on at the same time. Then you had your own home limitations where you know, your computer would just go off and shut down, so it was it was really rough."

Overall, access to computers for educational purposes has improved as the pandemic has progressed, but access to the internet has stayed largely the same. In households with K–12 students, 70 percent reported that computers were always available for educational purposes last spring, compared to 78 percent of households this fall. Comparatively, 74 percent of households reported that the internet was always available for educational purposes at the start of the pandemic, compared to 75 percent this fall (Carnevale, 2021).

A possible reason for the expansion of computer access is that schools and school districts provided a greater share of computers as the pandemic continued. At the same time, students still had to rely on their households for access to the internet. In the early part of the pandemic, students' schools or school

Share of households with K–12 students who indicated a computer or internet was always available for educational purposes

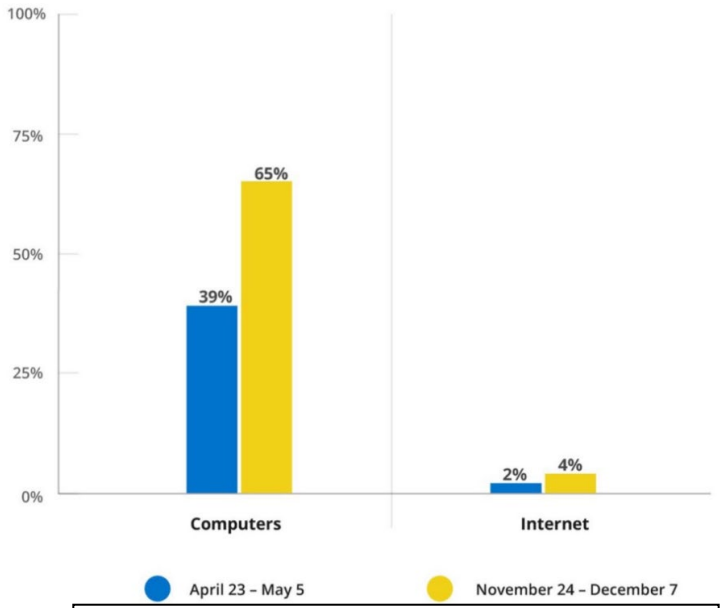


Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, Household Pulse Survey, April 23–May 5, 2020; and November 25–December 7, 2020.

districts provided computers to 39 percent of households and internet access to 2 percent of households. By late fall, the shares had risen to 65 percent for computers and 4 percent for internet access (Carnevale, 2021).

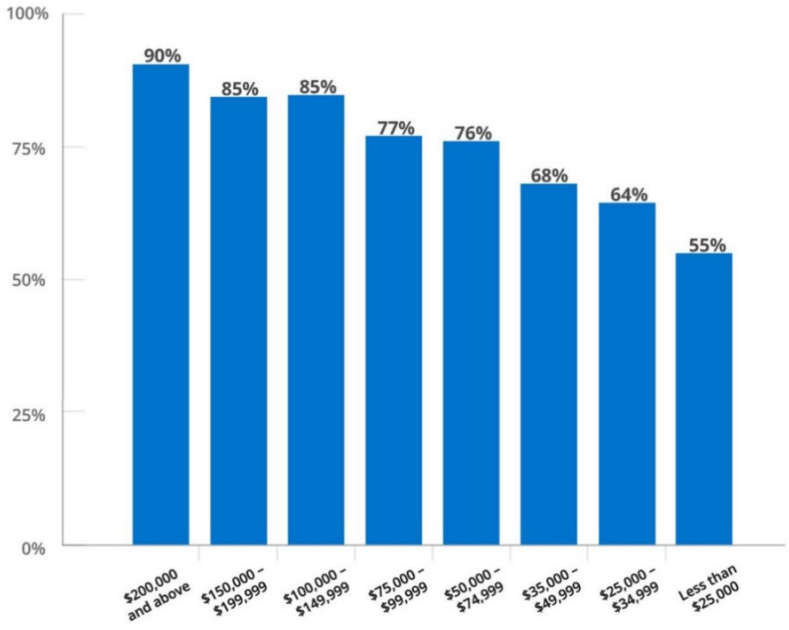
Students' access to computers and the internet is associated with their household income. In late fall, most households with incomes over $200,000 reported that computers (92 percent) and the internet (90 percent) were always available to children for educational purposes. By contrast, among households with incomes below $25,000, over half reported that computers (61 percent) and the internet (55 percent) were always available (Carnevale, 2021).

Share of households with K–12 students who indicated a computer or internet was provided by the chidren's school or school district

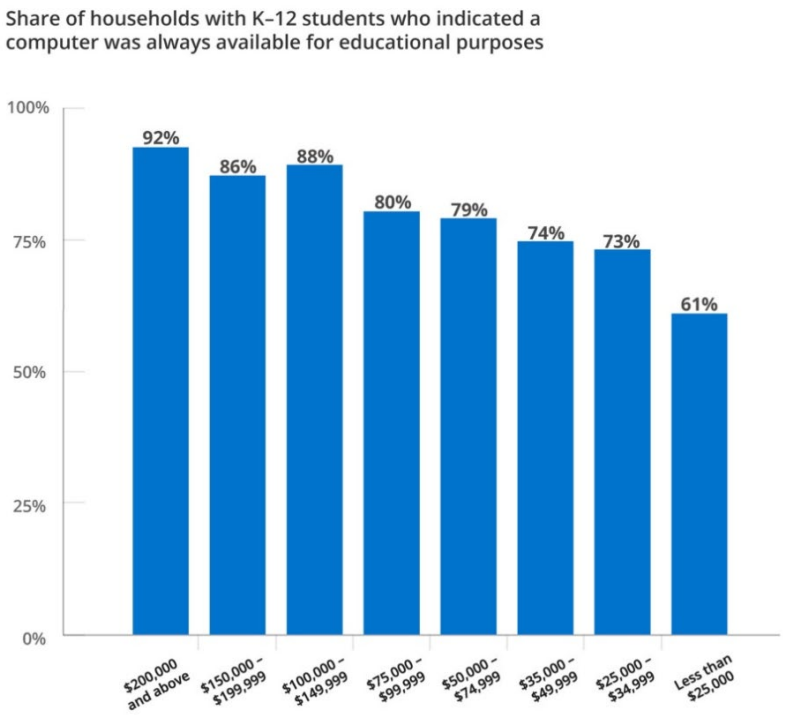


Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, Household Pulse Survey, April 23–May 5, 2020; and November 25–December 7, 2020.

Share of households with K–12 students who indicated internet was always available for educational purposes



Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, Household Pulse Survey, April 23–May 5, 2020; and November 25–December 7, 2020.



Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, Household Pulse Survey, April 23–May 5, 2020; and November 25–December 7, 2020.

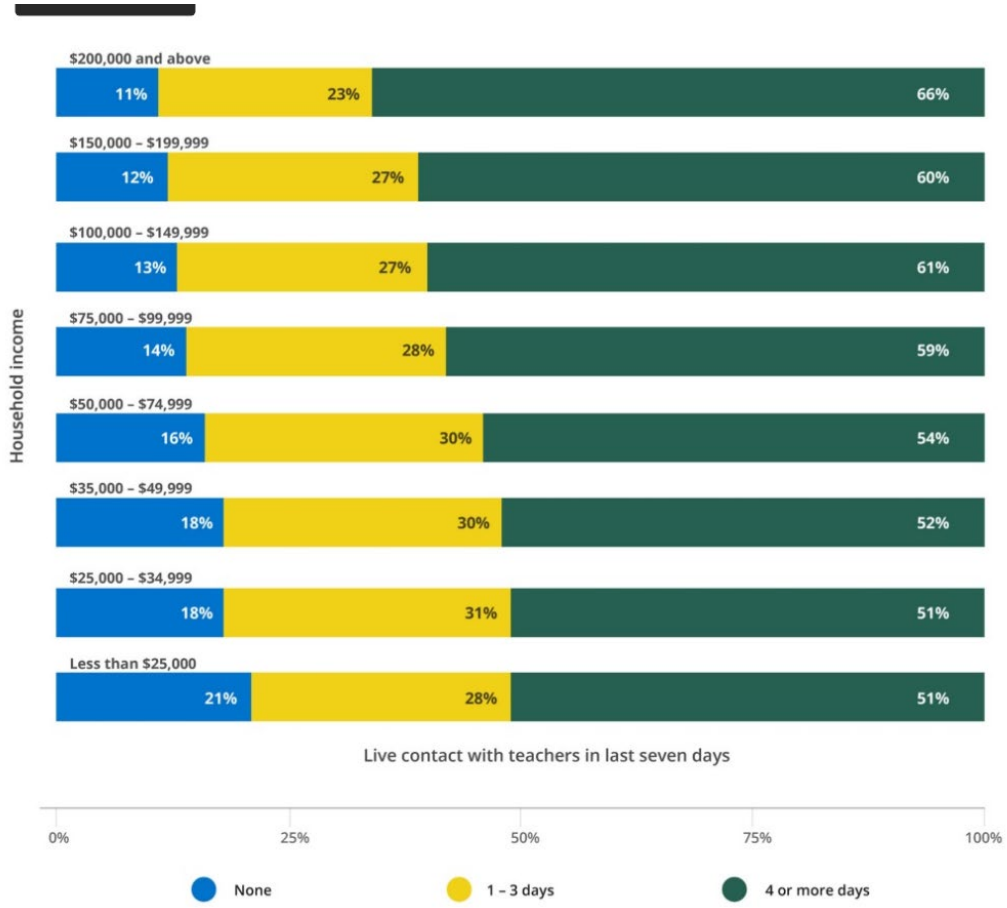
Schools and school districts helped bridge some of the gaps in technological resources. They provided computers for 76 percent of households with incomes below $25,000, compared to 51 percent of households with incomes above $200,000. Schools and school districts provided internet access for 12 percent of households with incomes below $25,000, compared to only 1 percent of households with incomes above $200,000. Despite this help, 32 percent of households with incomes below $25,000 still provided computers to their children, and 88 percent of households with incomes below $25,000 had to provide internet access so their children could participate in online classes (Carnevale, 2021).

Seven out of ten districts will offer personal computing devices to K–5 students, and eight in ten will do so for students in grades 6–12. Technology services are the largest growth area for districts among the wide range of services covered in the American School District Panel (ASDP) survey (Schwartz & Diliberti, 2021).

One-third of schools reported plans to offer remote instruction to any student who wants it after the pandemic has passed. Schools that have been remote in 2020–2021 were more likely to be planning for remote options in future school years. And, one-third of teachers who have taught fully remotely for the majority of the school year either indicated a preference to do some remote teaching in the future or otherwise had no preference. Additionally, one-third of schools reported plans to offer remote instruction to any student who wants it after the pandemic has passed. Schools that have been remote in 2020–2021 were more likely to be planning for remote options in future school years (Kaufman & Diliberti, 2021).

Not only do students in lower-income households have less access to computers and the internet, but they also have less live contact with their teachers — whether in person, by phone, or by video. In the late fall, 21 percent of households with incomes under $25,000 reported that their children had no live contact with teachers within the previous seven days, compared to 11 percent of households with

incomes over $200,000. Comparatively, 66 percent of households with incomes over $200,000 reported that their children had four or more days of live contact with teachers within the prior week, compared to 51 percent of households with incomes under $25,000 (Carnevale, 2021).



Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, Household Pulse Survey, April 23–May 5, 2020; and November 25–December 7, 2020.

Local educators generally agreed that they would maintain some of the technologies implemented throughout COVID in their classrooms in the future. However, there were differences in teachers' opinions and whether or not it was beneficial. Most teachers plan to keep the technology they used before and during the pandemic, with one instructor noting that "the older students benefit from the increased use of technology."

One educator stated that they still "believe students learn best when they are in school with hands-on learning with their classmates and their teachers. And, unfortunately, the pandemic created a gap for many students in both academic and social-emotional areas due to the complete move to online learning."

Other educators indicated that the extreme reliance on technology caused students to lose fine motor skills and that they've cut down on technology now

"I do however think positives did come from the development of new technologies and the enforcement of technology already readily available that was not being used. Now students have Chromebooks available with the technology they need at their fingertips."

that they are back in the classroom and are now focusing on areas beyond academics, such as art, cutting, and coloring to build up those muscles again.

Some instructors stated that they enjoy having assignments online, making it easier to track and grade students. Interestingly, most interviewed local educators reported that parent-teacher communication was the same, if not better, throughout COVID due to the need to reach out to the teacher for technology issues.

There are positive outcomes that educators and workforce development professionals attributed to the time students spent learning virtually. Most believe that it will prepare them for the self-paced learning in higher education that is associated with asynchronous online classes. According to one educator, "the strides that we've taken in educational technology with the students, especially the formats of things, like virtual classroom days rather than taking a snow day and running into the summer…I think it covers our basis to be able to reach a broader range of students and also be able to provide more opportunities for teachers to reach out to students and their families as well as build the technological ability and skills of the current students as they progress into a more technology, centered workforce."

Inequities and Disparities Across Pandemic Support Levels

How much learning students lose during school closures varies significantly by access to remote learning, the quality of remote instruction, home support, and the degree of engagement (Dorn et al., 2020). Local K-12 educators noted losing a substantial number of students after switching to remote schooling.

"We lost the kids….almost fifty percent of my class just never finished the school year."

Low-income black and Hispanic students were most at risk for learning loss due to lack of access to high-quality remote learning instruction and an environment and resources needed for remote learning, including technology, internet access, and parental support. Researchers also estimated that school closures would contribute to an increase in high-school drop-out rates and increased anxiety and social isolation among students (Dorn et al., 2020).

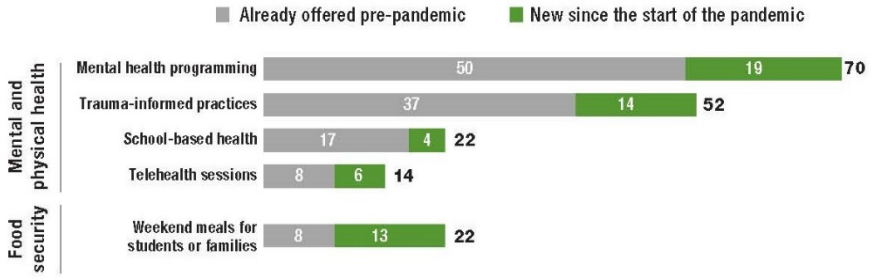
McKinsey estimates that "the average K–12 student in the United States could lose $61,000 to $82,000 in lifetime earnings (in constant 2020 dollars), or the equivalent of a year of full-time work, solely as a result of COVID-19–related learning losses" with higher losses for black and Hispanic students (Dorn et al., 2020).

Although teachers in the highest-poverty schools and those with most students of color reported more student access to free tutoring, they were less likely to report access to reading specialists and one-on-one student-teacher meetings (Kaufman & Diliberti, 2021).

The American School District Panel (ASDP) survey asked about districts' plans to offer health services for students and weekend meals and whether these services were new since the pandemic (Schwartz & Diliberti, 2021). The survey results indicated that 39 percent of urban districts and 33 percent of suburban districts, compared with 14 percent of rural districts, will offer weekend meals in 2021–2022. Among suburban districts, this service was generally new since the pandemic began (Schwartz & Diliberti, 2021)

The percentage of districts offering weekend meals to eligible students or families nearly tripled during the pandemic, increasing from eight percent of districts before the pandemic began to 22 percent for the 2021–2022 school year (Schwartz & Diliberti, 2021).

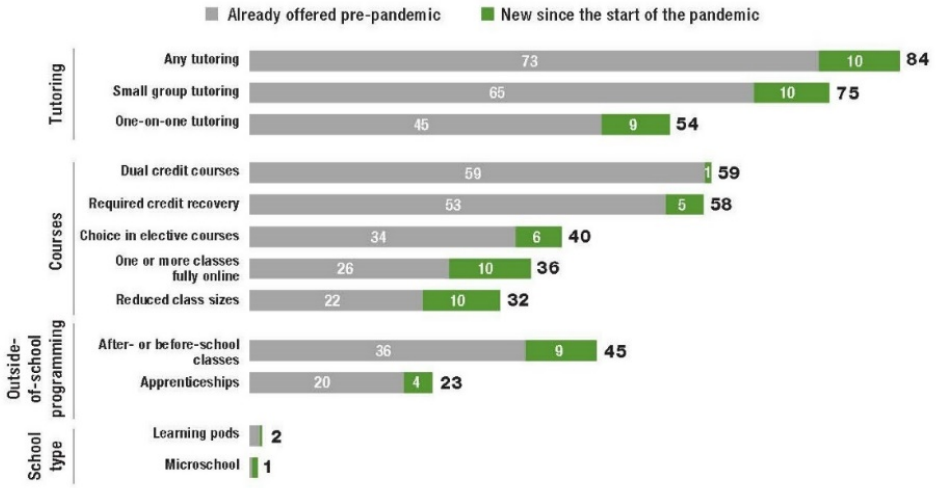
Percentage of Districts Offering Student Health Services and Weekend Meals in 2021–2022 and Whether These Services Are New Since the Start of the Pandemic



NOTES: This figure depicts response data from four survey questions. Data on mental and physical health-related services come from the following questions: "Which of the following school services or policies, if any, will your [district/CMO] offer in 2021–2022? Please include both [district/CMO]-run and contracted services" and "Which of these school services or policies are new since the start of the pandemic (i.e., that your [district/CMO] did not offer in 2019–2020 before the pandemic began)?" Data on food security practices come from the following questions: "Which of the following services, if any, do you plan to offer to families in 2021–2022?" and "Which of these services has your [district/CMO] newly offered since the start of the pandemic (i.e., that you did not offer in 2019–2020 prior to the pandemic)?" (n = 291). Bars may not sum to total because of rounding.

Concerning tutoring services, according to the ASDP, more high-poverty districts and districts with a majority of students of color plan to offer some tutoring in the 2021–2022 school year (91 percent and 92 percent, respectively) than their low-poverty and majority-white counterparts (80 percent and 81 percent, respectively). In particular, a higher percentage of high-poverty districts than low-poverty districts (13 percent versus six percent, respectively) have been newly offering one-on-one tutoring since the pandemic began. Meanwhile, a higher percentage of majority-white districts than majority students of color districts plan to offer one or more fully online courses in 2021–2022 (41 percent versus 27 percent, respectively). Suburban districts and districts with a majority of students of color are especially likely to offer after- or before-school classes in 2021–2022 (60 percent and 63 percent, respectively). Also, high poverty districts are more likely than low-poverty districts (68 percent versus 51 percent, respectively) to offer required credit-recovery courses in 2021–2022 (Schwartz & Diliberti, 2021).

Percentage of Districts Offering Some of the Most Commonly Mentioned Responses for Academic Recovery from the Pandemic in 2021–2022



NOTES: This figure depicts response data from four survey questions. Data on choice in elective courses come from the following questions: "Which of the following services, if any, do you plan to offer to families in 2021–2022?" and "Which of these services has your [district/CMO] newly offered since the start of the pandemic (i.e., that you did not offer in 2019–2020 prior to the pandemic)?" Data on the remaining items come from the following questions: "Which of the following school services or policies, if any, will your [district/CMO] offer in 2021–2022? Please include both [district/CMO]-run and contracted services" and "Which of these school services or policies are new since the start of the pandemic (i.e., that your [district/CMO] did not offer in 2019–2020 before the pandemic began)?" ($n = 291$). As defined on the survey, *learning pods* refer to learning environments in which small groups of school-age children are educated together at a child's home, a shared workspace, or a school building or community center. *Microschools* are small K–12 schools often characterized by size and structure: class sizes of typically 20 or fewer children, mixed-aged level groupings, innovative or active teaching models, and personalized approach and attention. Bars may not sum to total because of rounding.

Percentage of District Leaders Who Reported That Parents Have "Strongly Demanded" the Following Services or Changes

	All districts	Locale			Poverty level		Student racial and ethnic composition	
		Urban	Suburban	Rural	Low poverty	High poverty	Majority white	Majority students of color
Greater emphasis on SEL	25	**46**	**43**	**13**	26	24	**21**	**34**
More-frequent communication between teachers and parents in general	22	33	28	**18**	**14**	**34**	**15**	**40**
Fully remote schooling option	21	24	**35**	**14**	21	22	**17**	**31**
Computing device provided by the district	20	24	22	18	19	22	**16**	**28**
More personalized attention from teachers	18	**32**	19	15	17	20	**14**	**27**
Home internet access subsidized or paid for by the district	13	24	11	13	12	16	**9**	**24**
More-frequent reports about their child's academic progress	13	19	15	11	10	18	10	19
Schooling options that combine remote and in-person instruction	12	10	16	11	14	10	12	13
Before- or after-school care	12	**28**	**20**	**5**	11	13	10	16
More school time	11	15	**19**	**6**	**14**	**6**	11	10
New committees for parents to have more voice in the school	10	**31**	**20**	**3**	11	10	**6**	**21**
Revised grading policy to assign incompletes instead of failing grades	9	11	7	10	10	8	9	10
Workshops for parents on education- or school-related matters	8	13	**14**	**4**	5	11	**4**	**15**
Greater parental input into a school's curriculum choices	4	8	8	**2**	6	2	4	5
Revised school discipline policy	4	10	4	2	2	5	2	7
Greater parental input into the choice of which teacher(s) their student gets	2	6	0	3	3	1	2	2
Greater parental influence on placement of students in particular courses	2	0	3	2	3	1	2	2
Less school time	2	1	2	2	2	2	2	2
Learning pod	0	0	1	0	1	0	0	1
Microschool	0	0	1	0	1	0	0	1
Reduction or removal of School Resource Officers	0	1	0	0	0	0	0	0

NOTES: Lighter yellow cells represent smaller percentages of district leaders, while progressively darker shades of green represent larger percentages of district leaders. This figure depicts response data from the survey questions: "Which of the following services or policies for students, if any, have parents strongly demanded for the 2021–2022 school year?" and "Which of the following services for parents, if any, have parents strongly demanded for the 2021–2022 school year?" ($n = 286$). Bold font indicates that the subgroup percentage of district leaders reporting strong parental demand for an offering is statistically significantly different ($p < 0.05$) from the balance of district leaders not in that subgroup who said the same.

How This Analysis Was Conducted

- RAND Corporation researchers fielded the third survey of the ASDP from June 1 through July 2, 2021.
- This report is based on survey responses from 292 district leaders; these responses are weighted to be nationally representative. Surveys were completed by district superintendents, charter management CEOs, or their designees.
- Data on district demographics were obtained by linking survey data files to the 2019–2020 Common Core of Data issued by the National Center for Education Statistics (NCES). Our locale definition aligns with the four-category locale definition used by NCES, with the exception that we collapsed the districts located in towns into the rural category for sample size reasons. We classified districts as *majority white* if they had a student enrollment that was 50 percent or more white. All other districts were classified as *majority students of color*. Similarly, we classified districts as *high poverty* if 50 percent or more of their student population was eligible for free or reduced-price meals as part of the National School Lunch Program. All other districts were classified as *low poverty*.
- We conducted significance testing to assess whether subgroups were statistically different at the $p < 0.05$ level. Specifically, we tested whether the percentage of district leaders in one subgroup reporting a response was statistically different from the balance of district leaders who took the survey (e.g., leaders of urban districts versus the rest of district leaders who took the survey who were not in an urban district). Because of the exploratory nature of this study, we did not apply multiple hypothesis test corrections.

One local teacher specifically spoke to the inequities experienced in their school district, a high-poverty district, noting that the 2021-2022 school year is more challenging than last year. Families are worried about their children coming to school for meals and social services, and academics are not always being pushed at home because they are pandemic fatigued. And there are additional stressors affecting families, with parents who have lost jobs, food insecurity, and many kids do not have the support at home with homework and supporting positive behaviors.

This educator continued to note that they have never seen school behaviors like this, and it seems to be getting worse, and they partially attribute it to the social aspect that was lost throughout COVID. Furthermore, they noted that their guidance office is loaded with kids all day long and with kids who say they have anxiety and are overwhelmed. Additionally, they pointed out that the district still has many parents worried about the pandemic. They live in an area where many people were sick, so kids aren't socializing, including get-togethers, sleepovers, or seeing family.

Furthermore, as a result of all these difficulties, this teacher noted an uptick in violence and fights in the schools, noting that it is at least more than double to prior to COVID. And, now only one bathroom is accessible to the kids because of vandalism, and that there is a "remarkable and noticeable lack of respect for the grounds and for the staff….very defiant…there's no distinction between how they talk to their peers and how they talk to adults" One reason that the teacher attributes to the increase in fights and discipline issues is that there have been a number of retentions, so "you have kids who are now a year or sometimes older than they should be for a certain grade level and that tends to cause a lot of problems, and that's not going to change as they go into high school."

According to Dorn et al. (2020), learning loss will probably be most significant among low-income, black, and Hispanic students. Lower-income students are less likely to have access to high-quality remote learning or to a conducive earning environment, such as a quiet space with minimal distractions, devices they do not need to share, high-speed internet, and parental academic supervision. Data from Curriculum Associates, creators of the i-Ready digital-instruction and -assessment software, suggest that only 60 percent of low-income students regularly log into online instruction; 90 percent of high-income students do. Engagement rates are also lagging behind in schools serving predominantly black and Hispanic students; just 60 to 70 percent are logging in regularly. These variations translate directly into greater learning loss. In the middle epidemiological scenario, the average loss is seven months; black students may fall behind by 10.3 months, Hispanic students by 9.2 months, and low-income students by more than a year. It is estimated that this would exacerbate existing achievement gaps by 15 to 20 percent.

Even more troubling is the context: the persistent achievement disparities across income levels and between white students and students of black and Hispanic heritage. School shutdowns could cause disproportionate learning losses for these students—compounding existing gaps—and lead more of them to drop out. This could have long-term effects on these children's long-term economic well-being and the US economy as a whole. Despite the enormous attention devoted to the achievement gap, it has remained a stubborn feature of the US education system. In 2009, we estimated that the gap between white students and black and Hispanic ones deprived the US economy of $310 billion to $525 billion a year in productivity, equivalent to two to four percent of GDP.1 The achievement gap between high- and low-income students was even larger, at $400 billion to $670 billion, three to five percent of GDP. Although Dorn et al. (2020) calculated these two gaps separately, the authors recognize that black

and Hispanic students are more likely to live in poverty. Yet poverty alone cannot account for the gaps in educational performance. Together, they were the equivalent of a permanent economic recession (Dorn et al., 2020).

The possible long-term damage of COVID-19–related school closures on low-income, black, and Hispanic Americans and the US economy is evident through research. Unfortunately, the past decade has seen little progress in narrowing these disparities. The average black or Hispanic student remains roughly two years behind the average white one, and low-income students continue to be underrepresented among top performers. It is estimated that if the black and Hispanic student-achievement gap had been closed in 2009, today's US GDP would have been $426 billion to $705 billion higher. If the income achievement gap had been closed, it is estimated that US GDP would have been $332 billion to $550 billion higher. These estimates were made before schools closed, and the transition to remote learning began, sometimes chaotically. (Dorn et al., 2020).

In addition to learning loss, COVID-19 closures will probably increase high-school drop-out rates (currently 6.5 percent for Hispanic, 5.5 percent for black, and 3.9 percent for white students, respectively). The virus is disrupting many of the supports that can help vulnerable kids stay in school: academic engagement and achievement, strong relationships with caring adults, and supportive home environments. In normal circumstances, students who miss more than ten days of school are 36 percent more likely to drop out (Dorn et al., 2020)

In the wake of school closures following natural disasters, such as Hurricane Katrina (2005) and Hurricane Maria (2017), 14 to 20 percent of students never returned to school. It is estimated that an additional two to nine percent of high-school students could drop out as a result of the coronavirus and associated school closures—232,000 ninth-to-11th graders (in the mildest scenario) to 1.1 million (in the worst one). In addition to the adverse effects of learning loss and drop-out rates, other, harder to quantify factors could exacerbate the situation. For example, the crisis is likely to cause social and emotional disruption by increasing social isolation and creating anxiety over the possibility that parents may lose jobs and loved ones could fall ill. Milestones such as graduation ceremonies have been canceled, along with sports and other extracurricular events. These challenges can reduce academic motivation and hurt academic performance and general levels of engagement. The loss of learning may also extend beyond the pandemic. Given the economic damage, state budgets are already stressed. Cuts to K–12 education are likely to disproportionately hit low-income and racial and ethnic-minority students, which could further widen the achievement gap (Dorn et al., 2020).

While nearly three in four households report education plan disruption, the forms and reasons are drastically different. Black and Latinx respondents are more likely to report plan cancellation, while Whites are more likely to report taking classes in different formats. Non-White groups are more likely to cancel plans due to health or financial concerns, while Whites are more likely to cancel plans due to concerns about changes to campus life. Results also reveal nuanced intersections of race, type of education plans, and household vulnerability in affecting education disruption, pointing to the necessity of well-targeted initiatives to address long-term consequences and resulting inequality (Liu, 2021).

K–12 schools' operational models—fully remote, fully in-person, or hybrid—varied considerably in the 2020–2021 school year. Fully remote schools tended to serve higher percentages of students of color and low-income students. Although teachers in the highest-poverty schools and those with most

students of color reported more student access to free tutoring, they were less likely to report access to reading specialists and one-on-one student-teacher meetings (Kaufman & Diliberti, 2021).

Summary

School systems responded to these challenges in a variety of ways. The most striking pattern thus far is the variation in school system responses, often driven by differences in local contexts and resources (Schweig et al., 2020).

For some schools, the shift to remote learning and assessment was an extension of recent online assessment system adoption difficulties, which resulted in large numbers of missing or invalid tests. In other places where online assessments weren't feasible in spring 2020, school systems used older data to make course recommendations, either from the winter or, in some cases, from the previous year (i.e., 2018-19 school year) (Schweig et al., 2020).

Related to this idea, there are other school systems that relaxed typical practices that relied on annual assessment data to provide more autonomy to individual schools, relying on school staff to exercise local judgment around course placements. Finally, other systems reported using more complex imputation models, projecting student scores based on student assessment histories. While by no means exhaustive, these recorded examples run the gamut of experiences and responses by school systems throughout the country (Schweig et al., 2020).

School systems have concerns about whether data from remotely administered diagnostic or interim assessments can be used for instructional decision-making or to understand the impacts of COVID-19 on student learning (Schweig et al., 2020).

The Pennsylvania Department of Education (PDE) launched a toolkit and professional learning series, "Accelerated Learning through an Integrated System of Support," to help school leaders and educators address students' learning loss caused by the COVID-19 pandemic and prepare for the upcoming school year by addressing academic and emotional well-being of students (The Commonwealth of Pennsylvania, 2021).

Concepts addressed in Accelerated Learning, with a focus on equity for all students, include:

Identifying and planning for a reset of school operations systems including health and safety, instructional models (in-person, virtual) teaching and learning;

Building a welcoming, safe and supportive community for students and teachers in all learning settings;

Identifying where students are entering school academically;

Aligning assessments, curriculum, and instruction to help each student progress; and

Developing teachers to support all students, particularly those most vulnerable.

COVID-19 and Post-Secondary Education

Overview

The COVID-19 pandemic has led to unprecedented shocks to society and household life, including severe disruptions to the supply and demand of postsecondary education. Lockdowns and social distancing strategies forced higher education institutions to close campuses and transit to online delivery or a hybrid model of instruction, leading to dramatic changes to learning and campus life (Smalley, 2021). Disruptions caused by the pandemic also led to uncertainties in financial aid programs and work-study opportunities (Smalley, 2021). These changes, along with income declines during the economic downturn, lockdowns, travel restrictions, and other disruptions during the pandemic, have led to a drastic drop in postsecondary enrollment.

Higher education often means meeting new people, enjoying new experiences, and discovering new places. With lockdowns and pandemic restrictions in place, particularly with uncertainty due to the emergence of COVID variants, much has changed about how students learn (HCI News, 2022)

Students face an increasingly uncertain environment, where financial and health shocks (for example, lack of resources to complete their studies or fear of becoming seriously sick), along with the transition to online learning, may have affected their academic performance, educational plans, current labor market participation, and expectations about future employment (Aucejo et al., 2020).

Estimates show the pandemic affected over 1.2 billion students globally (HCI News, 2022).

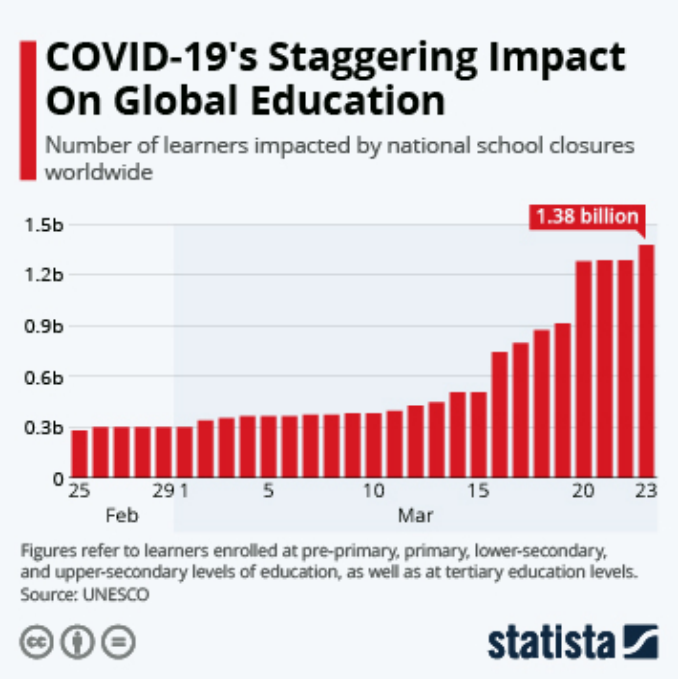


Image Source - Chart: COVID-19's Staggering Impact On Global Education | Statista

For young adults, missing even one semester is a considerable inconvenience, and many plans had to be adjusted in light of the circumstances. This delayed or altered the start of many curriculums—and new careers (HCI News, 2022).

According to the National Student Clearinghouse Research Center, postsecondary freshmen enrollment decreased by an unprecedented 13.1 percent in fall 2020. Most recent data show a 4.2-percent drop in overall postsecondary enrollment in spring 2021 from a year ago, with community colleges seeing the largest decline at 11.3 percent (NSC Research Center 2020; NSC Research Center 2021).

Disruptions to postsecondary education could lead to unconventional education paths such as delayed enrollment and graduation. These paths result in immediate disadvantages and bring further negative consequences in student performance, completion, and postgraduation socioeconomic achievements (Bozick & DeLuca, 2005; Rowan-Kenyon, 2007; Witteveen & Attewell, 2021). Previous research consistently shows varying likelihoods of unconventional education paths based on students' socioeconomic status (SES) (e.g., Bowen et al., 2009; Goldrick-Rab & Han, 2011; Rowan-Kenyon, 2007; Wells & Lynch, 2012). The social vulnerability literature on impacts of disasters also shows differences in vulnerability and resilience based on race, gender, and class (Bolin & Kurtz, 2018; Enarson, 2012; Peacock et al., 1997). The COVID-19 pandemic, therefore, could result in important disparities in postsecondary education disruptions across sociodemographic groups, which may further contribute to the long-standing systemic inequality (Liu, 2021).

When considering how severe the pandemic's impact on higher education, economic, social, and emotional implications must be considered.

In secondary education, school closures mean economic losses, which have become a pressing concern. A vast reduction in the number of international students takes a significant toll on the economy of their host country in revenue loss for accommodation, transportation, retail, telecommunications, insurance, food and beverage industries, and so on. Prolonged restrictions contribute to an economic downturn. The second cost is the learning loss. Researchers can show that each year of secondary education tends to increase lifetime earnings by up to 10 percent, so missed opportunities for learning have consequences later in life. Ultimately, poor skills levels can reflect a poor GDP, equating to a total economic loss of $14.2 trillion within the next 80 years (HCI News, 2022).

University students often suffer from depression and anxiety as they struggle to deal with uncertainty about their future. While a considerable percentage of college students are at a higher risk of developing mental health issues, the pandemic exacerbated their concerns even more. Changes in learning delivery, technological problems, and social isolation cause additional worry about social lives, academic success, and future careers (HCI News, 2022).

The higher education sector has changed dramatically in response to these economic, emotional, and mental health impacts.

Reliance on online learning

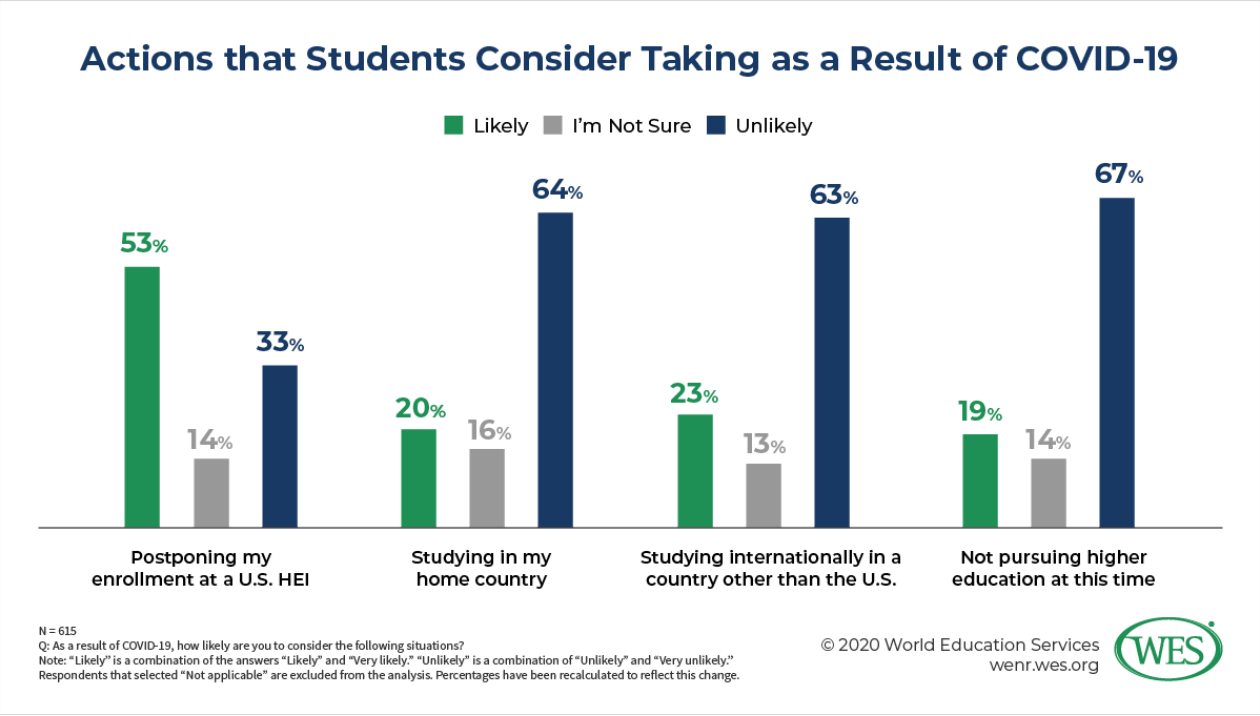
While online learning long existed before COVID-19, the pandemic spurred exponential growth in the number of online courses. A report shows that 51.8 percent of educational institutions are now offering online classes. Even prominent institutions in the US have resorted to online teaching to ensure learning continuity (HCI News, 2022).

While some still offer hybrid learning, it's now a given that online learning will remain a popular choice among college students, particularly for those who have already adapted to this current mode of instruction and learning. It also helps that many robust online learning platforms exist to provide students with various avenues for learning (HCI News, 2022).

Local perspectives indicated that accessibility and affordability affected the equity of online learning and has put an impediment on learning. Educators were faced with the challenges of individuals who did not have the technology. If they did have the technology, they didn't have the broadband width or the Wi-Fi that was strong enough to do video and participate. In a lot of classes, some individuals lacked technology skills. And so, digital literacy emerged as a barrier in some post-secondary education cases, especially for students that excel in face-to-face classes.

Postponement of college education

However, not everyone is willing or can learn online. The digital divide is still a factor in the US as a huge percentage still don't have access to high-speed internet. For international students, 53 percent of students choose to postpone their studies because they don't want to risk traveling to a foreign country during the pandemic. Moreover, some students defer their studies because some programs, such as basic and advanced life support, require special hands-on learning equipment (HCI News, 2022).



Shift to In-demand career options

With less tolerance for risk, students are focusing their choice of studies in fields where their skills will be needed in the future. For instance, enrollments in the medical field, such as nursing, paramedics, and EMT training, have increased considerably. In 2020, nursing program enrollments rose by almost six percent (HCI News, 2022).

"In the pandemic, we saw an increased visibility of nurses, and I think that's been inspirational to many people," shares Deb Trautman, American Association of Colleges of Nursing (AACN) president and CEO. "It's a profession where you can make a difference."

Enrollment in technical schools

Due to the pandemic, many students are turning to technical schools to get their education because technical schools offer several advantages. One is the access to quality and accredited education at a fraction of the cost of some colleges. With many families affected by the economic downturn due to the pandemic, many couldn't afford massive student loan debts. Another reason technical schools have become a popular option among students is because it allows them to complete their education faster while targeting skills and knowledge to help them start a career sooner (HCI News, 2022).

The International Association of Universities (IAU) ran a survey from March 25th through April 17th, 2020, to help identify specific impacts of COVID-19. Almost all the schools who responded said the pandemic impacted them. Over half of schools shut down all campus activities and completely closed the campus. Nearly half of the Universities answered that the pandemic would affect enrollment numbers for the next academic year. Fewer students enrolling means less graduates and therefore fewer people ready to enter full-time jobs. These projected enrollment numbers can have a major impact on the long-term talent pipeline in the future (Marinoni, Van't Land, & Jensen, 2020).

How has COVID-19 pandemic affected your institution?

Our institution is open as usual, no special measures in place for COVID-19 - 1 percent

Our institution is open as usual, but containment measures have been put in place to avoid spread of COVID-19 – 10 percent

Our institution is partially open, but there are major disruptions – 30 percent

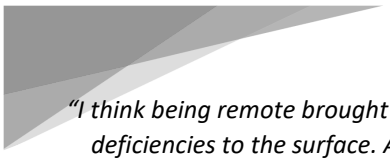
All campus activities have stopped, and the institution is completely closed – 59 percent

Aucejo et al. (2020) surveyed about 1500 undergraduate students at Arizona State University (ASU), one of the largest public universities in the United States, in late April 2020. The survey was explicitly designed to collect student outcomes and expectations after the onset of the pandemic and recover counterfactual outcomes in the absence of the outbreak. Specifically, the survey asked students about their current experiences/expectations and what those experiences/expectations would have been had it not been for the pandemic.

Local post-secondary and workforce development professionals generally attribute the postponement of college education to the level at which students struggled with the switch to remote schooling, which revealed deficiencies across the college population.

In order to understand the impact of the COVID-19 pandemic on higher education, Aucejo et al. (2020) deployed the survey using an instrument designed to recover the causal impact of the pandemic on students' current and expected outcomes. Results show large negative effects across many dimensions. Due to COVID-19: 13 percent of students have delayed graduation, 40 percent have lost a job, internship, or job offer, and 29 percent expect to earn less at age 35. Moreover, these effects have been highly heterogeneous. One-quarter of students increased their study time by more than four hours per

week due to COVID-19, while another quarter decreased their study time by more than five hours per week. This heterogeneity often followed existing socio-economic divides. Lower-income students are 55 percent likelier than their higher-income peers to have delayed graduation due to COVID-19. Finally, we show that the economic and health-related shocks induced by COVID-19 vary systematically by socioeconomic factors and constitute key mediators in explaining the pandemic's large (and heterogeneous) effects (Aucejo et al., 2020).



"I think being remote brought a lot of those deficiencies to the surface. And we had students that really struggled because they they just weren't equipped academically to manage that transition. So, we really, we saw a lot of students struggle."

The findings on academic outcomes indicate that COVID-19 has led to a large number of students delaying graduation (13 percent), withdrawing from classes (11 percent), and intending to change majors (12 percent). Moreover, approximately 50 percent of our sample separately reported a decrease in study hours and academic performance. Predicting the longer-term impact of the pandemic on student achievement is more difficult. Still, students reported that they expect to take a break from college in the fall 2020 semester at more than twice the rate in previous years. Historically, 28 percent of students who fail to re-enroll do not return to ASU or another university after five years (authors' calculations from ASU first-time freshmen transcript data for the 2012–2014 spring semesters), suggesting that the pandemic may have a lasting impact on the educational achievement of current students. Students also reported a decreased preference for online instruction as a result of their recent experiences (Aucejo et al., 2020).

Local administrators and workforce development professionals noted that there are problems regarding the population of higher education students who are going to school and now struggling. They have to choose between one or the other, especially women. And educators spoke to giving passes and not being as strict with their grading policies during the transition to virtual instruction, which led to deficiencies in actual learning. As a result, educators are seeing lower levels of academic success…which is one of the lingering impacts of COVID.

One administrator specifically noted that they believe they are going to see a lot more students going to test into developmental classes because they're not going to come with the same preparation into college that students usually would. This higher education institution has added student support staff to assist students and has added additional student success coaches and tutoring services.

Furthermore, locally, it was indicated that enrollments are down, partly due to the uncertainties of the time. Students who have children or are single parents, for example, have difficulty enrolling because of their own childrens' erratic school schedules. While enrollment is a current short-term issue, some worry about students pursuing higher education for the right reasons and pursuing their educational goals based on their interests and where their skillsets lie. The current workforce was indicated as having an impact on enrollment because a student can go to a retail store, for example, and earn $18 an hour, which leads students to question why they should get any type of training. But, one local administrator noted that they are anticipating to see enrollment start to creep up again, particularly for those that want to focus on a field where it's not just a labor industry.

Post-College Labor Outcomes

As expected, the COVID-19 outbreak also had large negative effects on students' current labor market participation and expectations about post-college labor outcomes. On average, working students suffered a 31 percent decrease in their wages and a 37 percent drop in weekly hours worked. Moreover, around 40 percent of students lost a job, internship, or job offer, and 61percent reported having a family member who experienced a reduction in income. The pandemic also substantially impacted students' expectations about their labor market prospects post-college. For example, their perceived probability of finding a job before graduation decreased by almost 20 percent, and their expected earnings when 35 years old (around 15 years from the outbreak) declined by approximately 2.5 percent. This last finding suggests that students expect the pandemic to have a long-lasting impact on their labor market prospects, which is qualitatively consistent with the literature on graduating during a recession (Aucejo et al., 2020).

The data also show that while all subgroups of the population have experienced adverse effects due to the outbreak, the size of the effects is heterogeneous. For example, compared to their more affluent peers, lower-income students are 55 percent more likely to delay graduation due to COVID-19 and are 41 percent more likely to report that COVID-19 impacted their major choice. Further, COVID-19 nearly doubled the gap between higher- and lower-income students' expected GPA.[4] There also is substantial variation in the pandemic's effect on preference for online learning, with Honors students and males revising their preferences down more than 2.5 times as much as their peers. However, despite appearing to be more disrupted by the switch to online learning, the impact of COVID-19 on Honors students' academic outcomes is consistently smaller than the impact on non-Honors students (Aucejo et al., 2020).

Local higher education administrators and workforce development professionals indicated that students are no longer focused on workforce readiness. They're just working and focused on going to work, and they don't value the skill. One administrator stated they “just don't think that there's much motivation for students to pursue education for the work as a part of workforce readiness.”

Moreover, several local professionals indicated that soft skills are lacking in Generation Z, to begin with. “Now we are bringing up Alpha Gen and removing that everyday interaction with humans was a disservice to students. We are going to have to acknowledge that the way these generations communicate because of COVID and otherwise is going to be different. We are going to have to adjust to that structure.” According to several local perspectives, soft skills will be the most significant challenge and disadvantage, along with social anxiety.

“I think there's just a disconnect between the individual and the job that they want to do, and what kind of skill set they need to do that job.”

Additionally, there will be a desire for flexibility from now on that many organizations are not ready to give. As such, “until leadership among businesses starts to change and accept that level of flexibility, we're going to struggle with that readiness to be here from 9 to 5.”

Potentially, locally, there will be a lot of challenges as to why organizations are working a certain way or not becoming more flexible. And, “as we start to see high school graduates go into college, graduate college, and enter the workforce after their entire their life was blown up,” we will see questioning because this generation has “been taught to question tomorrow” and so “they’re not going to want to

commit in the same way for employers." The biggest issue that local employers have to be prepared for is if they don't adjust and learn to adapt to this generation of students. "How can you engage a generation of people that have been taught that they can make their own time?"

And as organizations ponder the issues of flexibility, there are other long-term problems due to a generation of students facing unprecedented events associated with the COVID-19 pandemic. Over 15 million of our nation's most healthy individuals, namely college/university students, are unwittingly positioned to experience an infinite number of immediate and long-lasting consequences to their health, mental health, academic and post-graduate careers (McReynolds, 2022). As such, it is imperative to document the immediate and long-term impact of this pandemic as students navigate these uncertain times.

There was a local consensus among higher education and workforce development professionals that there is a lot of fear and mental health issues that have emerged. Local higher education professionals would like to address this piece consistently and regularly and bring mental health support to campuses to avoid the wait in the community for mental health support.

Columbia University's national "COVID-19 Higher Ed Student Impact Study" will conduct a series of online surveys with students enrolled in a geographically, institutionally, and ethnically diverse set of US colleges/universities. The survey will inquire about behavioral and physical health and salient academic and economic circumstances and concerns related to the COVID-19 pandemic that are shaping students' lives now and in the future. College/university leadership will be asked to immediately send a school-wide email notification informing students about the study. It will include a weblink for students to complete the online survey. To obtain a proper understanding, over time, of consequences to their lives, students will be asked to participate in a series of follow-up surveys (six and 12-months post-pandemic onset in the US). To provide immediate feedback regarding students' responses to inquiries about their substance use, mental health, academic and financial needs, and concerns, they plan to generate monthly school-specific and aggregate descriptive reports of survey responses. Study findings are certain to inform ongoing health services and academic responses to student needs and identify ways that service providers and educational institutions can better respond to these needs now and in the event of another global pandemic such as we are currently experiencing (McReynolds, 2022).

> "We we've seen the government give out a boatload of money to give directly to students. And I think that's great. I wish that we could be using that money to address the underlying issue, the mental health impact."

Summary, Conclusions & Recommendations

COVID-19 has changed education for learners of all ages. Preliminary data project educational losses at many levels and verify the increased anxiety and depression associated with the changes, but there is not yet data on long-term outcomes. Guidance from oversight organizations regarding the safety and efficacy of new delivery modalities for education has been quickly forged. It is no surprise that special learners' socioeconomic gaps have widened. The medical profession and other professions that teach by incrementally graduated internships are also severely affected and have had to make drastic changes (Hoofman & Secord, 2021).

The transition to an online education during the coronavirus disease 2019 (COVID-19) pandemic may bring about adverse educational changes and adverse health consequences for children and young adult learners in grade school, middle school, high school, college, and professional schools. The effects may differ by age, maturity, and socioeconomic class. There is little data on outcomes at this time, but many oversight organizations have tried to establish guidelines, express concerns, and extrapolated from previous experiences (Hoofman & Secord, 2021).

The COVID-19 pandemic has affected and will continue to affect the delivery of knowledge and skills at all levels of education. Although many children and adult learners will likely compensate for this interruption of traditional educational services and adapt to new modalities, some will struggle. The gap widening for those whose families cannot absorb the teaching and supervision of education required for in-home education because they lack the time and skills necessary are not currently addressed. The gap for those already at a disadvantage because of socioeconomic class, language, and special needs is most severely affected by the COVID-19 pandemic school closures. They will have the most challenging time compensating. Pediatricians must continue to check in with their young patients about how they are coping and what assistance they can provide in their communities (Hoofman & Secord, 2021).

K-12

A Call to action - These numbers are sobering—but they are not inevitable. If the United States acts quickly and effectively, it may avoid the worst possible outcomes. But if there is a delay or a lack of commitment, COVID-19 could end up worsening existing inequities. It is therefore urgent to intervene immediately to support vulnerable students. Many students will continue to take advantage of free learning resources, but school systems must also think creatively about how to encourage ongoing (Dorn et al., 2020).

The necessity of continued remote learning cannot be an excuse for inaction or indifference. There are examples of high-quality online education, and reaching this level should be the general expectation. While no one knows precisely what level of in-class learning will be possible for the 2020–21 school year, many students will probably need to stay home for at least part of it. Educators need to use the summer to learn how to make instruction more effective, whatever the scenario. Achieving this goal will make it necessary to provide teachers with resources that show them how to make virtual engagement and instruction effective and train them in remote-learning best practices. It will also be essential to work with parents to help create a good learning environment at home, call upon social and mental-health services so that students can cope with the pandemic's stresses, and ensure that all students learn over the summer. Initiatives might include expanding existing summer-school programs, working

with agencies that run summer camps and youth programs so that they add academics to their activities, and enlisting corporations to identify and train volunteer tutors (Dorn et al., 2020).

Tennessee, for example, is recruiting 1,000 college students to tutor kids falling behind. New York will be conducting remote summer school for 177,700 students (compared with 44,000 in 2019). Some districts are making digital summer learning available (though optional) to all students. The necessity of continued remote learning cannot be an excuse for inaction or indifference. There are examples of high-quality online education, and reaching this level should be the general expectation. While no one knows exactly what level of in-class learning will be possible for the 2020–21 school year, many students will probably need to stay home for at least part of it. Educators need to use the summer to learn how to make instruction more effective, whatever the scenario. Achieving this goal will make it necessary to provide teachers with resources that show them how to effectively create virtual engagement and instruction and train them in remote-learning best practices.

It will also be necessary to work with parents to help create a good learning environment at home, to call upon social and mental health services so that students can cope with the pandemic's stresses, and to ensure that all students have the infrastructure (such as laptops, tablets, and good broadband) needed for remote learning. As a blend of remote and in-classroom learning becomes possible, more flexible staffing models will be required, along with a clear understanding of which activities to prioritize for in-classroom instruction, identification of the students who most need it, and the flexibility to switch between different teaching methods. And all this must be done while school systems keep the most vulnerable students top of mind. That may require investment—something that cannot be taken for granted if state and local government budgets are cut (Dorn et al., 2020).

The US academic-achievement gap was first identified in 1966. Its persistence is troubling. The possibility that COVID-19 could make it worse deserves focused attention. The achievement gap costs the United States hundreds of billions of dollars and exacts a long-term cost in social cohesion. This is a moment—and a challenge—that calls for urgency and energy (Dorn et al., 2020).

When deciding how to spend federal funds, district and school leaders should rely on multiple data points collected now and in the following school year, including those related to absenteeism, performance on formative assessments, and students' potential non-academic needs (Kaufman & Diliberti, 2021).

Researchers and policymakers should keep a close eye on instruction over the next school year to ensure that districts and schools have access to the right set of expertise and supports. Researchers, policymakers, and district leaders should consider the extent to which any educators have switched to technologies over the pandemic—and plan to continue using in a post-pandemic era—support teaching and learning. School districts and policymakers should reflect on the variety of regulatory decisions that could support or obstruct remote learning. Federal and state policymakers should provide clear and consistent health and safety guidance to support school system decision-making (Kaufman & Diliberti, 2021).

Some findings indicate an optimistic picture: In reading, on average, the achievement percentiles of students in fall 2020 were similar to those of same-grade students in fall 2019, and in almost all grades, most students made some learning gains since the COVID-19 pandemic started. In math, however, the results tell a different story: Student achievement was lower than the pre-COVID-19 performance by

same-grade students in fall 2019, and students showed lower growth in math across grades 3 to 8 relative to peers in the previous, more typical year. (Kuhfeld et al., 2020).

Schools will need clear local data to understand if these national trends are reflective of their students. Additional resources and supports should be deployed in math specifically to get students back on track. Yet, research indicates that the long-term ramifications of COVID-19 for student learning – especially among underserved communities – remain unknown (Kuhfeld et al., 2020).

The government has a role to play in terms of creating the right enabling conditions and making the budgets available. Then, beyond that, the private sector can play a vital role. There are a number of companies in India where there's a mandate to set aside two percent of profits for corporate social responsibility. About $2 billion annually is set aside, and 40 percent of that goes to education—about $800 million. Business people are also allocating a lot of private philanthropy money (HBS, 2021)

Additionally, the funding mechanisms for K–12 education create "have and have not" communities in terms of spending. When you get gross spending disparities per capita for students, that shows up in everything from extracurriculars, to the depth of a curriculum, to the salaries paid to teachers. And those disparities also have a significant impact on the career readiness of many young Americans, perpetuating intergenerational income inequality (HBS, 2021).

Companies should reflect on what their roles should be. There are numerous instances of local activism by companies, particularly those in the infrastructure business, addressing things like the digital divide. A good example is in Chattanooga, Tennessee, where the local electric utility came together with foundations and educators to ensure digital access for all citizens. They addressed a specific issue, connectivity. They did not take the stance that, "We're going to solve all the problems in the Chattanooga K–12 system." Companies should emulate that posture: "Let us provide you backbone financial and other needed resources, rather than tell you how to educate kids" (HBS, 2021).

In the future—especially post-COVID-19—companies should place particular focus on creating work-based learning opportunities for young people, engaging school districts and community colleges, and creating apprenticeships, which can take the form of compensated work to gain work experience and earn credentials. Such programs are the absolute gold standard in terms of getting young people on a pathway to prosperity (HBS, 2021). In addition, school districts should emphasize their current after-school enrichment programs and survey whether or not these programs are addressing current academic deficits. If an after-school enrichment program is not in place, steps should be taken to implement them.

Post-Secondary

Many others believe the pandemic has increased the awareness that we need to change the way of education. The question being asked is how can we reimagine education to support the workforce? There are three things we need to develop an effective workforce. The first is foundational knowledge which is the content of STEM disciplines. Foundational knowledge is based on a real-world perspective, not a theoretical perspective. The second is meta-knowledge which is the skills and mindset that allows the future workers to apply the foundational knowledge. The third is humanistic knowledge which guides us to decisions aligned with human-centered values (August, 2021).

The COVID-19 pandemic has caused schools and institutions to change how they teach; employers have also changed how they hire. Employers are shifting their focus from education to job skills. One study believes half of all employers will need reskilling by the year 2025. Organizations need to look ahead and assess how technologies, data science, and AI will take over, etc. Replace the three R's (Reading, Writing, Arithmetic) with the five C's (critical thinking, creativity, collaboration, communication, and coding). There is a great need to move fast with changes to technology (World Economic Forum, 2021).

Local post-secondary educators, administrators, and workforce development professionals believe that post-secondary institutions need to be proactive instead of reactive regarding digital literacy help, especially to older and non-traditional students. Higher education institutions need to recognize the need to provide individuals with laptops, access to the internet, and preparation to learn remotely.

There are many things companies learned about employees over the pandemic. Since 2020 was a period of virtual hiring and virtual work, there was an increase in daily stress and anxiety. Younger workers typically saw higher daily stress compared to older workers. Over half of workers under age forty said they experienced stress a lot from their job (Pendell, 2021).

Many authors and studies are projecting lower numbers for enrollment and a downtrend for the long-term talent pipeline. Lowe (2021) believes that the United States has a skill problem that does not stem from education level. Companies are not sharing responsibility for skill development. They are not putting in the time, money, and resources for the necessary skill development of their employees. This became apparent at the start of the pandemic when unemployment rates were low. Some companies got rid of many jobs to compensate for this. Now that hiring is picking back up, more jobs are available. If one has the needed skills, they have an advantage in the hiring process (Lowe, 2021).

There is a clear consensus that COVID-19 had an impact on education. But, there is not a clear consensus on how to handle education in the post-pandemic world. The two sides are pro-in-person learning, and the other is pro-online learning. Those who are pro-in-person learning tend to be more against online education. They state problems with internet connection, lack of set schedule, and difficulty teaching online. The pro-online learning people say that online learning is the future in a post-pandemic world, and we need to accept this reality now. It seems there will not be a clear consensus on the best way to continue with education for the time being. This will be an ongoing topic of discussion for years to come.

Furthermore, research indicates that the COVID-19 pandemic negatively affected the long-term talent pipeline. The main reasons listed were the campus shutdowns, delayed graduations, and lower enrollment numbers. The difficulty of teaching effectively online does not prepare students for their future jobs. The lack of enrollment means the students are not even applying to these jobs. If institutes can better adapt to the online learning methods, they can better prepare students for their future and get students to stay enrolled throughout the COVID-19 pandemic. Such efforts include maximizing educational and employment opportunities and increasing access for residents.

Recently, counties have led and supported their post-secondary education institutions in mitigating local challenges related to the coronavirus (COVID-19) pandemic.

According to NACo's survey, about **41 percent of counties have a career readiness and/or educational attainment initiative that includes partnership with higher education**. Many of these initiatives are driven by WIOA state and local efforts and help prepare students for in-demand jobs.

Hennepin County, Minn., has a research-sharing program and opportunities for student internships.

DeKalb County, Ga. also has a summer jobs program in partnership with local universities and colleges and supports institutions by providing public land and authorizing use (NACO)

Regular communication is key for creating strong partnerships across multiple departments and sectors. Workforce development boards, businesses, county departments of health and human services, and post-secondary education institutions are coming together to share data on workforce needs, develop training and curriculum and reach high schoolers and the adult workforce with programs and services (NACO.

In response to NACO's survey, county leaders told NACo that having access to data across multiple systems is critical for informing local decisions affecting higher education institutions and improving community outcomes.

Hamilton County, Tenn. county health department coordinates with the county community college to provide educational opportunities for high-demand trade jobs and careers such as nurses and medical technicians. The county also works with local high schools in promoting its local community colleges at job fairs to enhance college enrollment for residents.

In **Dakota County, Minn.**, and **Shelby County, Ohio**, local workforce boards and post-secondary education institutions work together to offer training for local careers in great demand and engage disconnected workers in employment. This strategy helps improve the local economy by working to reduce employment barriers and retain jobs for skilled workers who live in the county (NACO)

County leaders are partnering with post-secondary education institutions, local businesses and major corporations, chambers of commerce, and workforce development boards to identify and develop programming designed to maximize the skills needed for local industry jobs. They are using promising practices and leading collective impact approaches to support the human capital needs of residents and the workforce needs of local employers working for major corporations and small businesses (NACO)

Data sharing among intergovernmental and private industry partners can be used to increase transparency and solve community problems such as unemployment, lack of job growth, and limited post-secondary education programming and curriculum that matches the small business and local industry jobs in counties (NACO).

For example, **Wilson County, N.C.'s** NCWorks has a data dashboard where job seekers and employers can gain access to local labor market data and post-secondary education matriculation rates. Employers and job seekers can also learn more information about the occupations in high demand and the educational, job, and salary requirements necessary for being a competitor in today's job market. Holding regular meetings with cross-sector partners that include post-secondary education institution leaders, employers, and workforce development directors can also support collaboration on higher-education programming, curriculum and coursework, and training and credential programs designed to promote the skillsets needed for job seekers to be prepared for local industry jobs (NACO)

Cross-sector partners can also create opportunities and collaborate on programming for internships and apprenticeships that create a pipeline for career readiness, upward mobility, and job success (NACO).

Recognizing the tremendous growth in health care innovation, research, and technology, **Tarrant County, Texas** government, post-secondary education institutions, and hospitals partner with medical centers to hire directly from the county's university and college medical and nursing programs. Local officials work with the North Texas Health Science Center at Fort Worth to offer internship opportunities, hands-on training, and part-time employment for future medical workers and technicians. Leveraging these approaches can help build a highly qualified, well-trained workforce, create job opportunities in small businesses, and support growing and emerging industries that drive the local economy (NACO)

Counties also coordinate with state and city governments to improve policy, increase funding, streamline services and systems building efforts and share data to promote career readiness opportunities for residents. About half (49 percent) of counties partner with state or city government on issues affecting post-secondary education, according to the leaders who responded to NACO's survey.

Cities and counties have been coming together to create regional approaches for strengthening educational and career pathways and partnering with local community colleges. They share data and information on student enrollment and basic needs and identify and assess local industries' educational and work preparedness needs. In many counties, WDBs are the lead partners that bring together multiple municipalities and coordinate local efforts with the state (NACO).

In **Allegheny County, Pa**., for example, one WDB represents both the city of Pittsburgh and the county of Allegheny on their workforce efforts. Additionally, **Erie County, Pa**.'s workforce development board is regional and brings together elected officials from five counties. Several Arizona counties participate in a statewide education improvement initiative. For example, **Santa Cruz, Ariz**., is a member of its local higher education consortium, and **Coconino County, Ariz**., is part of the Arizona Tri-Universities for Indian Education to improve educational attainment and opportunities for Native American residents (NACO).

While there are benefits in collaborating with multiple sectors and systems, there are also some challenges and barriers. NACO asked counties about the barriers in coordinating higher education with other systems such as human services, workforce, and employment. Thirty-seven (37) percent of county leaders reported that staff capacity is a significant barrier. Other challenges include turf wars, restrictive requirements (mostly from the state), and challenges with data sharing. Moreover, lack of clarifying roles when leading cross-systems collaboration efforts and misalignment of interests across systems were also key barriers (NACO)

There are several key considerations for county leaders seeking to partner with post-secondary education institutions, according to NACO.

Work with the county board and executive officials in providing funding for post-secondary education institutions within your county, especially for technology applications and technical solutions supporting distance learning for students during COVID-19 and beyond and in areas with wide digital divides.

Facilitate and maintain regular communication among higher education institutions and public sector leaders to identify students' needs and find ways to address educational and service access barriers.

Promote cross-sector collaboration by sharing data and staff resources, providing thought leadership, identifying approaches to help fill systemic gaps, and offering solutions to local challenges through government and community-based programs.

Actively participate in statewide and regional efforts to expand, align and scale career readiness efforts.

Bring private sector employers to the table to explore the needs of local industries and identify where to expand post-secondary education and job skills training programs that work to improve skillsets and address shortages in high-demand positions.

Include higher education leaders in the Workforce Innovation and Opportunity Act (WIOA) state and local planning efforts to increase career pathways opportunities for residents.

Enhance coordination among county Workforce Development Boards (WDBs) and human services agencies to help meet the basic needs of low-income residents and address underlying issues and community challenges that negatively affect their educational attainment and employment outcomes.

References

Aucejo, E., French, J. Araya, M. and Zafar, B. (2020). The impact of COVID-19 on student experiences and expectations: Evidence from a survey. 10.1016/j.jpubeco.2020.104271

Carnevale, A. (2021). Virtual learning is not child's play for K-12 students. Virtual Learning Is Not Child's Play for K–12 Students | by Anthony P. Carnevale | Georgetown CEW | Medium

Commonwealth of Pennsylvania (2021). Department of Education Launches Program to Help Schools Address Learning Loss Due to the Pandemic

Dorn, Hancock, Sarakatsannis, & Viruleg (2021). COVID-19 and education: The lingering effects of unfinished learning. Curriculum Associates, 2021.

Dorn, Hancock, Sarakatsannis, & Viruleg (2020). COVID-19 and student learning in the United States: The hurt could last a lifetime.

HCI News (2022). The impact of the pandemic on higher education. The Impact of the Pandemic on Higher Education - HCI College.

Harvard Business School (HBS) (2021). Addressing education inequities exacerbated by the pandemic. Addressing Education Inequities Exacerbated by the Pandemic - Alumni - Harvard Business School (hbs.edu)

The International Association of Universities (IAU) (2021). The impact of COVID-19 on higher education around the world. IAU global survey report. iau_covid19_and_he_survey_report_final_may_2020.pdf (iau-aiu.net)

Kaufman, J. & Diliberti, M. (2021). Divergent and inequitable teaching and learning pathways during (and perhaps beyond) the pandemic. Key findings from the American Educator Panels Spring 2021 COVID-19 surveys. Divergent and Inequitable Teaching and Learning Pathways During (and Perhaps Beyond) the Pandemic: Key Findings from the American Educator Panels Spring 2021 COVID-19 Surveys | RAND

Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., & Lewis, K. (2020). How is COVID-19 affecting student learning? *Brookings.* How is COVID-19 affecting student learning? (brookings.edu)lo

Lowe, N. (2021). Reimagining skill. Reimagining Skill - Metropolitics

Liu, R. (2021). Disparities in disruptions to postsecondary education plans during the COVID-19 pandemic. https://doi.org/10.1177/23328584211045400

McReynolds, L. (2022). COVID-19 higher ed student impact study. COVID-19 Higher Ed Student Impact Study | Columbia | Research

Middleton, K. (2020). The longer-term impact of COVID-19 on K-12 student learning and assessment. *Educational Measurement Issues and Practice, 39.* https://doi.org/10.1111/emip.12368

National Student Clearinghouse Research Center. (2020). Current term enrollment estimates, Fall 2020. https://nscresearchcenter.org/?s=Current+term+enrollment+estimates%2C+Fall+2020s

National Student Clearinghouse Research Center. (2021). COVID19: Stay informed with the latest enrollment information. https://nscresearchcenter.org/stay-informed/

Pendell, R. (2021). 7 Gallup workplace insights: What we learned in 2021. 7 Gallup Workplace Insights: What We Learned in 2021

Schwartz, H. & Diliberti, M. (2021) School districts have expanded their nonacademic services for 2021–2022, while academic offerings remain much the Same: Selected findings from the third American school district panel survey. Santa Monica, CA: RAND Corporation, 2021. https://www.rand.org/pubs/research_reports/RRA956-4.html.

Smalley, A. (2021). Higher education responses to coronavirus (COVID-19). https://www.ncsl.org/research/education/highereducation-responses-to-coronavirus-covid-19.aspx Spiegelman, 2020

Schweig, J., McEachin, A., & Kuhfeld, M. (2020). Unpacking COVID-19's long-term effects on students. Unpacking COVID-19's Long-Term Effects on Students | RAND

World Economic Forum (2021). The COVID-19 pandemic has changed education forever. This is how. The rise of online learning during the COVID-19 pandemic | World Economic Forum (weforum.org)

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