Reopening in the Shadow of COVID-19

BEGINNING THE FIRST FULL CORONAVIRUS SCHOOL YEAR

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Executive Summary

The onset of the coronavirus pandemic in March 2020 closed every public school in the nation and forced districts to retool their operations to provide remote instruction on an emergency footing. AEI's COVID-19 Educational Response Longitudinal Survey (C-ERLS) captured six waves of data throughout the spring to track that transformation. The series of C-ERLS reports has described how the nation's public schools responded, revealed how those responses differed across schools and districts, and provided important context for understanding the potential educational losses during the pandemic. This report focuses on the new school year using the seventh wave of C-ERLS data, gathered from the same sample of school districts, to describe again how public schools have changed operations to reopen this fall during the continuing pandemic.

This report discusses two main sets of findings. The first focuses on how school districts across the nation reopened in fall 2020. I examine which of five modes of instruction, ranging from fully in person to fully remote, districts provided on the first day of school. About two in five schools began the year offering an option for full-time in-person instruction, about one-third were fully remote, and the remaining 25 percent offered either a hybrid model or in-person instruction for select grades. I then present how these reopening models varied across COVID-19 cases, demographics, and community characteristics, finding that COVID-19 cases were weakly related to reopening models. I also examine the percentage of schools that shifted their mode of instruction between the first day of school and October 1 and how these varied across districts.

In the second section, I describe each model of instruction in greater detail by examining their operations and instructional approaches. I find that schools returning with a hybrid model implemented health and safety checks more aggressively compared to schools that returned fully in person. By looking at remote instructional platforms, I find that districts' fall instructional offerings were, indeed, a large improvement from the "emergency learning" remote instruction in the spring.

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This past summer, education leaders across the country had the daunting task of deciding how 62 million students would begin the 2020–21 school year amid an ongoing pandemic. They were all aware that the dramatic disruption brought on by emergency learning in the spring resulted in major educational losses for many students. Limiting in-person instruction, therefore, would be a costly decision paid primarily by students.

A competing pressure to reopening, however, was the uncertainty and threat of the virus. Reopening school buildings could pose a public health risk to students, families, and school personnel. Despite these opposing pressures, not to mention a myriad of others,[1] the fall still came and with it, a new school year.

The first full school year of the coronavirus pandemic started with far more differences across public schools than existed last year. In this report, I describe the landscape of reopening by looking at how many schools opened in person full-time, fully remote, or somewhere in between and the characteristics of schools and districts that were associated with those reopening models. Looking at each model, I describe the policies schools put into place to make each work in this remarkably different school year. I also look at how many districts have shifted toward or away from in-person instruction in the early part of the school year. As we head into a long winter, with climbing COVID-19 cases and hospitalization rates in dozens of states,[2] these data can help us understand the landscape of public schools even as the pandemic promises to bring more changes.

Data

This report uses data from the seventh wave of AEI's COVID-19 Educational Response Longitudinal Survey (C-ERLS) survey program, following the same sample of 250 nationally representative districts that composed the six waves of data collected in spring 2020. C-ERLS is a nationally representative collection of regular US public school districts. For the seventh wave, we departed from our previous practice of capturing data in a two- to three-day window and instead collected data during the week of the school districts' first day of class.

As such, data were gathered between August 3 and September 17. In addition to capturing districts' reopening plans, we collected data specific to each reopening model to characterize specific features of the different plans. Finally, we conducted a brief follow-up survey on all 250 districts in the last week of September to determine whether reopening models had changed between the first day of school and October 1.

Information was gathered exclusively from school district websites (and pages linked to them) on the

assumption that these sites are the centralized communication hubs for all schools in those districts. I report results as percentages of all schools, which can be interpreted as the proportion of all public schools whose districts are offering a given program, platform, or service. Further details on C-ERLS's structure and design are available in Appendix A.

I merged C-ERLS data with additional data sources to make comparisons across districts. First, I examined how school districts' reopening plans are related to the number of COVID-19 cases in the school districts' counties. I drew county-level historical case data from a *New York Times* dataset[3] and then calculated the average number of new COVID-19 cases from the seven days before the districts' first week of school.[4]

In addition, I used district and county-level data employed in previous reports drawn from various files from the National Center for Education Statistics, the US Census Bureau's Small Area Income and Poverty Estimates (SAIPE), and the Stanford Education Data Archive (SEDA). I also used county-level estimates of broadband access drawn from the American Community Survey and states' voting histories in presidential elections from 2000 to 2016 to categorize states as red, purple, and blue and compare the offerings of districts in them. Finally, I used data from previous C-ERLS waves to determine how districts' reopening plans this fall compared to their operations last spring.

Findings

This report documents how public school districts reopened for the 2020–21 school year in light of the ongoing COVID-19 crisis. I present the findings in two sections. The first section provides a snapshot of how school districts across the nation reopened in fall 2020. First, I present which of five modes of instruction districts provided on the first day of school, ranging from fully in person to fully remote.

I found that almost two in five schools (38 percent) began the school year with an option to return fully in person, 34 percent of schools returned fully remote, and the remaining schools fell between these two options. I then look at how those reopening models differed across a number of district characteristics, from COVID-19 case counts to student demographics. Surprisingly, I find no clear pattern between COVID-19 case rates and districts' reopening plans. In this first section, I also examine the percentage of schools that changed their mode of instruction—whether shifting to more in person or more remote—between the first day of school and October 1 and how those changes differed by district characteristics.

The second section looks at each model and describes aspects of their operations and instructional approaches. Specifically, I find that masks and other pandemic mitigation steps are widely used in schools allowing any in-person instruction but are more aggressively applied in hybrid schools. I also find that remote instructional platforms are universally internet-based in remote-only schools, which marks a significant improvement over platform availability in all schools in the spring.

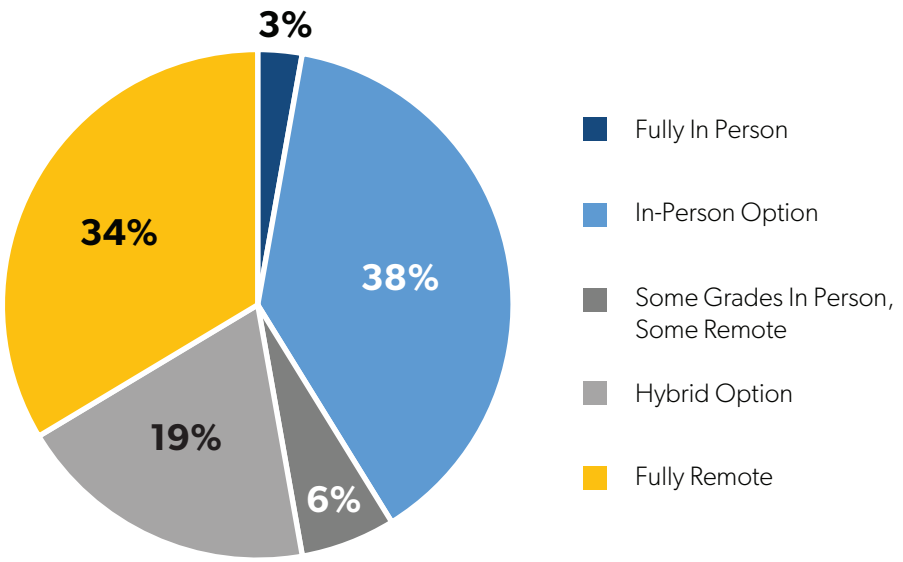
Initial Reopening Status. When the pandemic abruptly closed every public school in the nation last spring, no district had a choice but to shift to remote learning. This fall, by contrast, many had the opportunity to decide how they would provide instruction to students. To categorize the wide range of options for modes of instruction, I divided districts into the following five mutually exclusive reopening statuses.[5]

1. *In-Person Only*. All grade levels attend school in buildings five days per week, with no option for learning in a hybrid or remote model.

2. *In-Person Option*. All grade levels have an option to attend school in buildings five days per week, though families can opt for fully remote instruction and/or a hybrid model.

3. *Grade Dependent*. Students in some grades can return to buildings in person, while other grades can only return in a hybrid or remote model.

Figure 1. Reopening Status on the First Week of School



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

4. *Hybrid Option*. All students have an option to return to buildings for four days or less each week (or five partial days) while learning remotely from home the remaining time.

5. *Fully Remote*. All grade levels participate in virtual instruction five days per week, with no option for in-person or hybrid learning.[6]

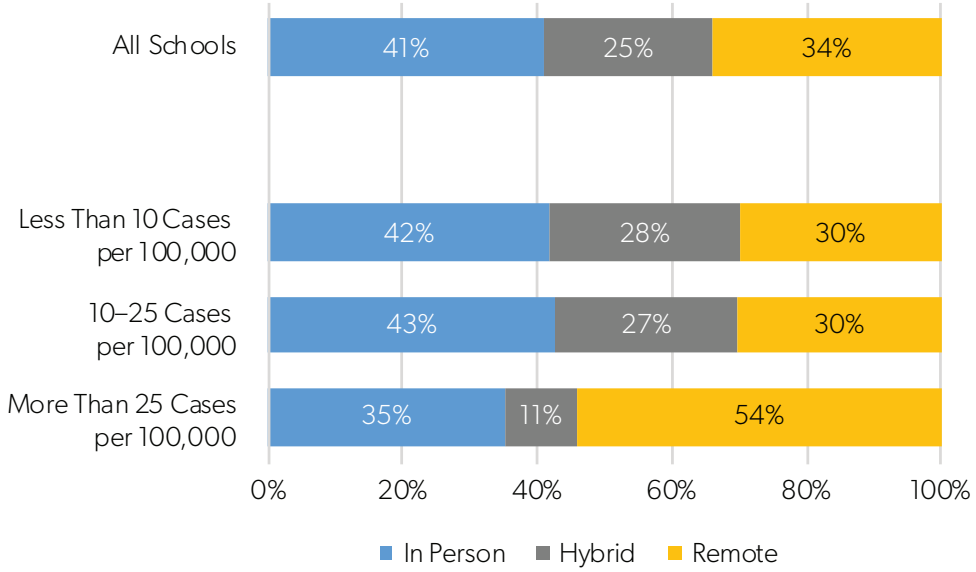
As seen in Figure 1, only 3 percent of schools returned in person without an option for remote instruction, while the modal category was to return with the option for in-person instruction. When families were given the choice between remote and in-person instruction, many chose to keep their students learning from home. Thus, these percentages reflect the students given the option for in-person instruction and not necessarily those actually receiving in-person instruction. C-ERLS did not capture the often significant percentages of students who opted out of in-person instruction.

Just 6 percent of schools were located in districts that offered full-time instruction for some grades and not others. In these schools, it was most common for younger students to have the option of returning for full-time instruction. About one in five schools were in districts that offered a hybrid model. Of the schools that returned hybrid, most provided two days of in-person instruction per week, while some went up to four days of in-person instruction. Just over one-third of schools began the school year with only remote instruction for all students.[7]

To make clear comparisons across districts, I collapsed the five reopening categories into three. For the remainder of the report, "in person" refers to all schools in districts with any fully in person, and "hybrid" refers to those with either a hybrid option or a combination of offerings by grade level.

First, I examined how schools' reopening plans varied by districts' COVID-19 case counts. Before the beginning of the school year, the Centers for Disease Control and Prevention published a document advising school leaders to adjust their reopening plans in response to the number of new cases per 100,000 persons.[8] To examine reopening plans by the threat of the virus, I first identified COVID-19 case counts in

Figure 2. Reopening Status at the First Week of School and COVID-19 Case Concentration, Fall 2020



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; and *New York Times* "Covid in the U.S.," https://github.com/nytimes/covid-19-data.

the county or counties the school district was located in, averaged over the seven days in the week before that districts' first day of school. I then categorized counties into three groups: those having fewer than 10 cases per 100,000 people, having 10–25 cases, and having more than 25 cases.

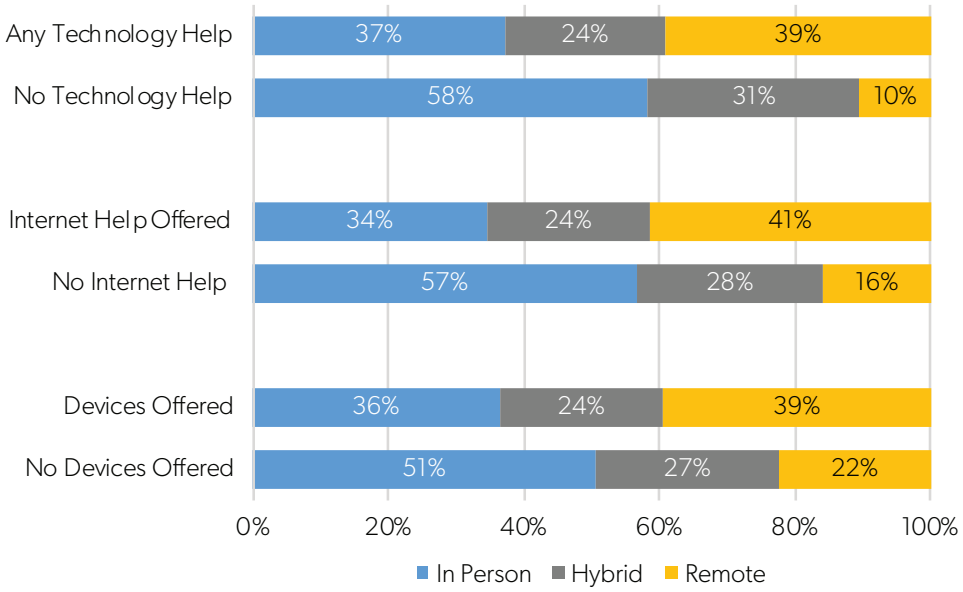
Figure 2 shows that more schools in counties with 25 cases per 100,000 or higher opened fully remote, compared to districts in counties with fewer cases. The bulk of that differential across categories came from the gap in the percentage of hybrid schools—about 27 percent compared to 11 percent. The difference in the percentages of schools going in person—from about 42 percent compared to 35 percent—was not statistically significant.

The lack of a clear pattern of reopening models across all three different levels of COVID-19 case rates is surprising, given that case rates are a primary indicator of the viral threat in the community, which is the very threat school closings are meant to mitigate. If closures were a response to the pandemic threat, one would assume far more schools would return in person in places with the lowest cases per 100,000 population, with lower percentages in areas with moderate case rates, and far lower percentages in areas with high numbers of cases. The same lack of association is evident in the average rates across reopening categories, which are 14 cases per 100,000 for in person, 12 for hybrid schools, and 18 for fully remote schools. (See Table 1.)

What appropriate case rates should be for these reopening scenarios is a public health judgment, but the weak relationships seen here suggest that neither top-down guidance nor an operational consensus carried the day on how schools should start the new year. This pattern's weakness is particularly stark next to numerous other factors that distinguish schools with different reopening platforms.

Initial Reopening Status by District and Community Characteristics. Districts' reopening plans by the first day of school differed across districts by a number of characteristics. In the following section, I compare differences in reopening status across districts using compositional aspects such as student poverty and achievement and community

Figure 3. Reopening Status at the First Week of School, by Technology Assistance During Spring 2020 Pandemic Closures



Source: Author's calculations using data from C-ERLS Waves 6 and 7, October 1, 2020.

characteristics such as broadband access. First, I look at how the districts' fall reopening plans are related to their emergency learning offerings in the spring.

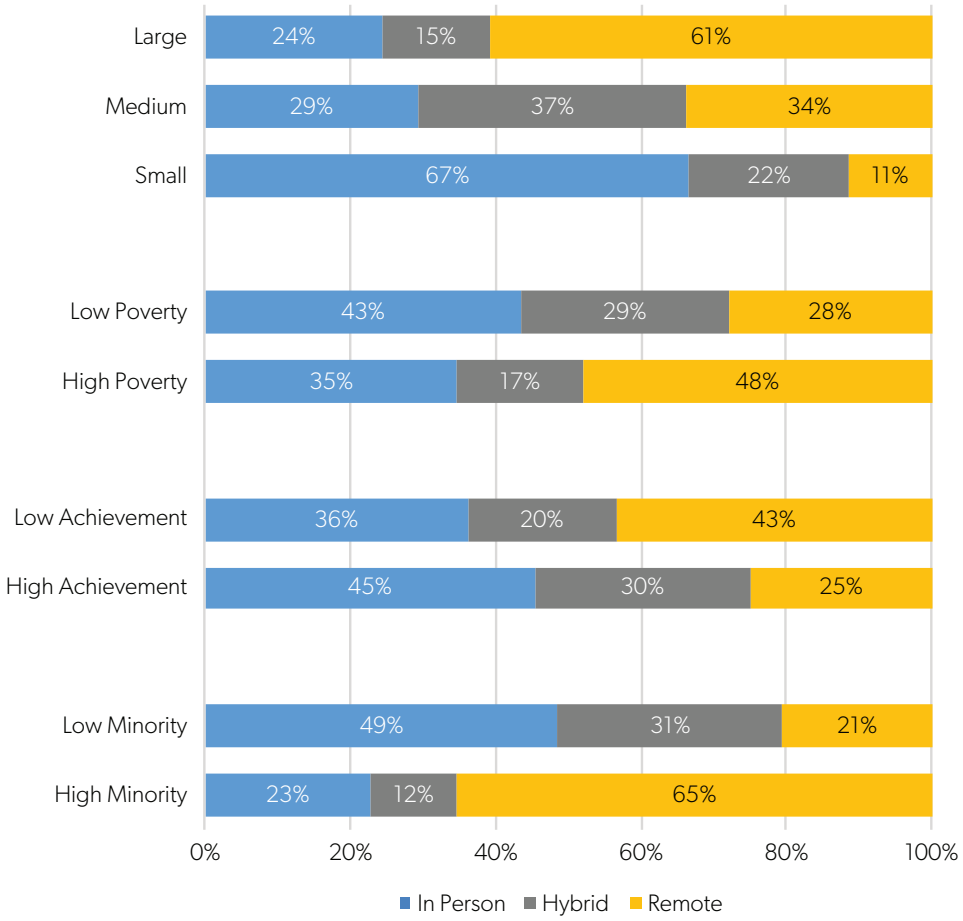
Reopening Status by District Spring Responses. The longitudinal C-ERLS data are uniquely suited to measure the relationship between how schools responded in the spring and how they reopened in the fall. Although numerous aspects of schools' operations in the spring might have influenced decisions to reopen in the fall, the only one that showed a significant relationship with fall reopening was technology supports, including technology help, internet help, and providing devices. As shown in Figure 3, the schools in districts that provided technology assistance in the spring were more likely to reopen in person in the fall. One explanation for this could be that schools with the ability to offer assistance in the spring could reflect a larger digital divide among districts. Relatively few schools in the spring were in districts that did not provide technology assistance to give internet access and devices to students without them. Those that did not offer it in the spring, however, were much more likely to return in person this fall.

Reopening Status by District Characteristics. Reopening models also differed among districts across a number of district characteristics. As shown in Figure 4, large districts (those with 25 or more schools) had much higher percentages of schools returning remotely (61 percent) than did small districts (those with six or fewer schools; 11 percent) and were much less likely to return in person. Medium-sized districts (those with seven to 24 schools) returned in a hybrid model more often than either small or large districts did.

There were also differences in reopening plans by student characteristics. Schools in higher-poverty and low-achieving districts were more likely to reopen this fall fully remote. Schools in high-minority districts were remote three times more often than schools in low-minority districts were, with the differential made up both from schools offering in-person and remote platforms.

Reopening Status by Community Characteristics. Reopening plans also differed across various community characteristics. As shown in Figure 5, schools reopened with remote instruction far more often in

Figure 4. Reopening Status at the First Week of School, by District Characteristics



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; Common Core of Data, 2017–18; and Educational Opportunity Project at Stanford University, 2009–16, https://edopportunity.org/.

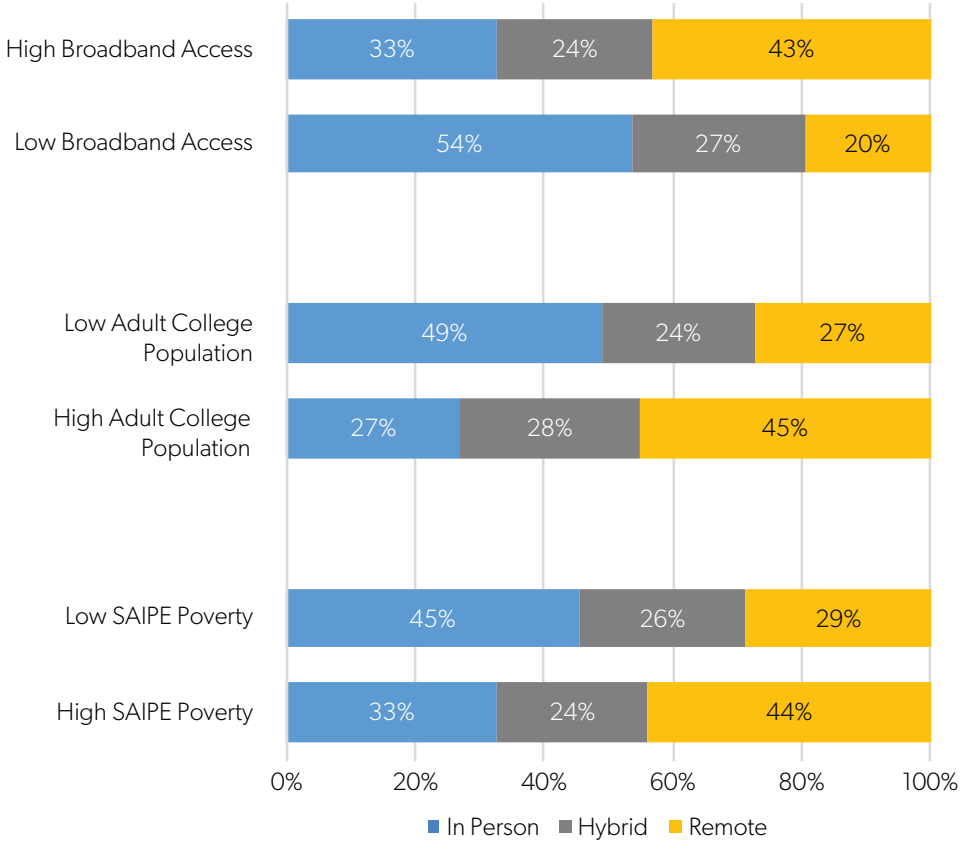
areas with high broadband access and returned in person more often where broadband was scarce. This indicates once again—alongside the likelihood of districts offering technology assistance in the spring—that the disparities brought on by the digital divide likely affected students in both the spring and the fall.

Other community characteristics do not align with reopening in the same ways they aligned with differences in remote instructional offerings in the spring. For instance, last spring, districts with lower poverty and higher college attainment rates in the community had more sophisticated and capable remote-learning options in their schools. In the fall, however, schools reopened fully remote more often in both areas.

Reopening Status by State Voting History. Schools' reopening plans also varied by state voting history. In red and purple states, as shown in Figure 6, more than triple the percentage of schools opened in person compared to blue states. Along the same lines, blue states had double the number of districts return remote compared to red and purple states. This pattern is consistent with the educational offerings in the spring, when red states had less sophisticated remote offerings.[9]

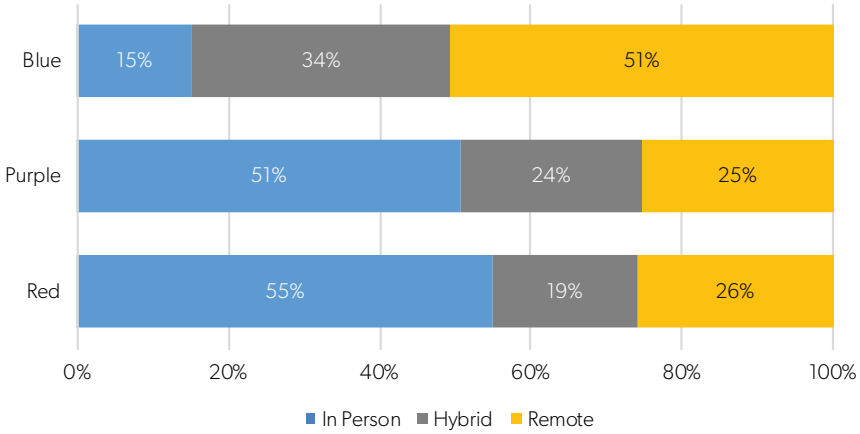
Examining reopening plans against COVID-19 case counts reveals that many districts returned in person despite higher COVID-19 rates. Table 1 displays COVID-19 case counts in the week leading up to the

Figure 5. Reopening Status at the First Week of School, by Community Characteristics



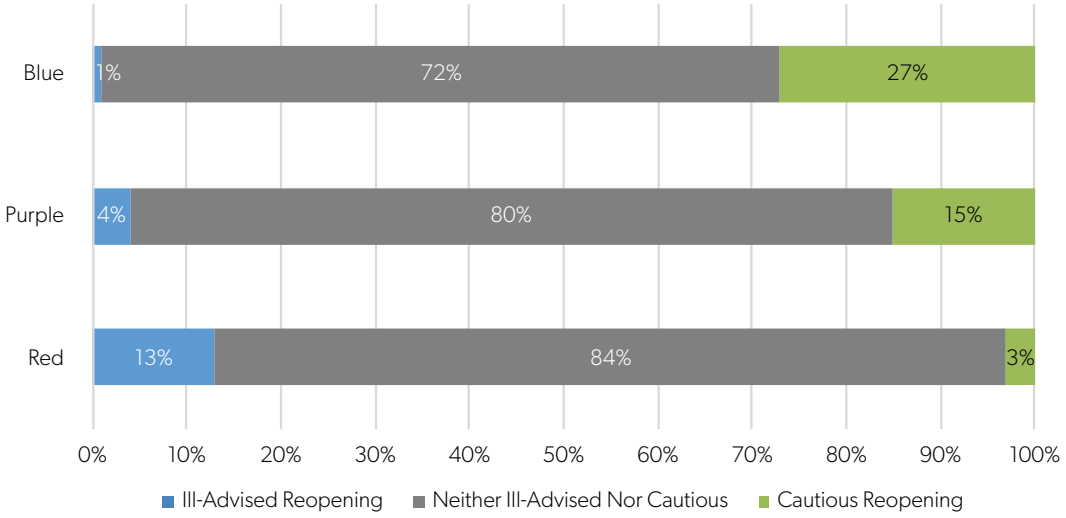
Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; US Census Bureau, "Small Area Income and Poverty Estimates (SAIPE) Program," https://www.census.gov/programs-surveys/saipe.html; Educational Opportunity Project at Stanford University, 2009–16, https://edopportunity.org/; US Census Bureau, American Community Survey, 2015–18; and states' voting histories in presidential elections from 2000 to 2016.

Figure 6. Reopening Status at the First Week of School, by State Voting History



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; and states' voting histories in presidential elections from 2000 to 2016.

Figure 7. Cautious and Risky Reopenings, by State Voting History



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; and *New York Times*, "Covid in the U.S.," https://github.com/nytimes/covid-19-data.

first day of school across districts in red, purple, and blue states. In red states, estimated COVID-19 cases are higher than in purple and blue states. Yet, despite higher COVID-19 rates, red states had higher percentages of schools reopening in person.

Purple and blue state reopening patterns also show questionable patterns. For instance, as one might expect, for schools in red states, case counts are lowest for those returning in person and highest for those returning fully remote. In contrast, estimated case counts for schools in purple states are highest in schools that returned *in person*, and in blue states, they are higher than counts for schools returning with hybrid instruction.

Another startling finding is just how risk-averse blue states were with their reopening plans. Blue states' average COVID-19 case per 100,000 was 13.5 for schools returning remotely, while the average rate for all schools was 14.5, and the average for red states reopening in person was 15.9 cases. In other words, the case rate for blue states opening remote was close to the average case rate nationwide and the case rate for red states opening in person.

Similarly concerning results are found when examining risky and cautious reopening. Borrowing an approach used by the Center on Reinventing Public Education (CRPE), I categorized districts as having "ill-advised" reopenings if they returned with in-person instruction with case counts of 25 or more per 100,000, which the Harvard Global Health Institute (HGHI) defines as highest or "red" risk level for reopening in person.[10] I categorized districts as having "cautious" reopening plans if they remained remote despite having case counts below 10 per 100,000, which the HGHI defines as "yellow" or "green" risk categories.[11] Overall, 7 percent of schools were in districts with ill-advised reopenings, while 14 percent had cautious reopenings.

In red states, as seen in Figure 7, 13 percent of schools had ill-advised reopenings, which is almost twice the average percentage. In contrast, almost no schools in blue states had ill-advised reopenings (1 percent). More than one in four schools, however, had cautious reopenings in blue states, meaning that many students who likely could have returned to in-person instruction safely did not have that option.

In the interest of full disclosure, I believe more schools should have reopened with an in-person option than did. I also believe that substantive reasons beyond rank politics might account for significant portions

Table 1. COVID-19 Cases per 100,000 Population in the Week Before Reopening by Reopening Status

		State Voting History		
	Total	**Red**	**Purple**	**Blue**
All Schools	14.5	19.7	11.4	10.7
In Person	13.9	15.9	12.6	8.6
Hybrid	11.5	19.8	8.4	7.6
Remote	17.5	27.4	12.0	13.5
Ill-Advised Reopening	7%	13%	4%	1%
Neither Ill-Advised Nor Cautious	79%	84%	80%	72%
Cautious Reopening	14%	3%	15%	27%

Note: "Ill-advised" reopening is defined as opening with some in-person instruction with more than 25 cases per 100,000, and "cautious" reopening is defined as opening remote with less than 10 cases per 100,000.
Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; and *New York Times*, "Covid in the U.S.," https://github.com/nytimes/covid-19-data.

Table 2. Percentage of Schools Basing Shifts in Reopening Status on Health Data Sources

	Schools
State Health Authorities	54%
Local Health Authorities	49%
Test Positivity Rates	18%
Federal Health Authorities	16%
Hospitalizations	3%
COVID-19 Deaths	<1%

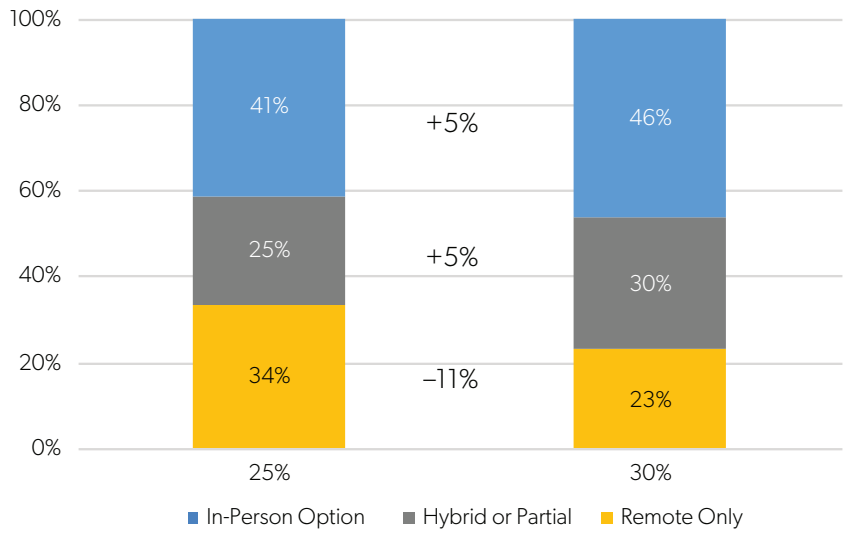
Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

of these differences. For instance, red state districts' broadband access, urbanicity, and experiences in the spring might provide a compelling rationale for their tendency to return in person, despite substantial COVID-19 case rates. Similarly, the difficulty that large districts, more common in blue states, may face safely returning with some form of in-person instruction could account for the outsized caution in those districts. The normative aspects of these patterns are up for debate, but the most common aspect across all these measures is their general inconsistency.

Shift in Reopening Status. Several districts changed their reopening status by October 1. About half of districts reported that decisions to shift either toward more remote or more in-person instruction would be based on the advice of state health authorities or local health authorities. As outlined in Table 2, less than one in five specifically cited test positivity rates as a data source for decisions to shift instruction—about the same percentage that cited guidance from federal health authorities as a basis for shifting. Districts rarely cited hospitalization or death rates as indicators. Many schools, however, cited cases (which would include hospitalizations) in their community as a reason to shut down schools for a period of time.

Ostensibly based on these criteria, a small percentage of schools moved toward more remote instruction, but the majority of changes were toward more in-person instruction by October 1, the net effects of which can be seen in Figure 8. While remote-only options decreased by about a third, from 34 to 23 percent, the percentage of schools offering full-time in-person options for students increased by an estimated 5 percentage points, with a similar-sized increase for hybrid options.

Figure 8. Reopening Status at Opening and Status at October 1



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; and states' voting histories in presidential elections from 2000 to 2016.

Changes in reopening statuses also differed across districts. Figure 9 shows most of the shifts took place in red states, where remote-only schools decreased from 26 to 9 percent and in-person options grew from 55 to 67 percent. Blue states also saw moves toward hybrid instruction, but no growth was evident in full-time in-person options. There were almost no net changes in purple states.

These differential changes could be due to several factors, but one structural factor is the length of the school year before our October 1 cutoff date for these changes. Table 3 shows that schools in red states began the school year earlier than schools in purple states did and much earlier than schools in blue states did. On October 1, almost 80 percent of schools had six or more weeks of instruction, compared to 58 percent of schools in purple states and 33 percent of schools in blue states. During data collection, several districts announced plans to shift toward either hybrid or in-person instruction and a few toward more remote instruction, but they could not be counted because those plans had not yet occurred. Were status changes measured over the first six or eight weeks of school, we might see more changes in purple and blue states than are evident by this fixed date.

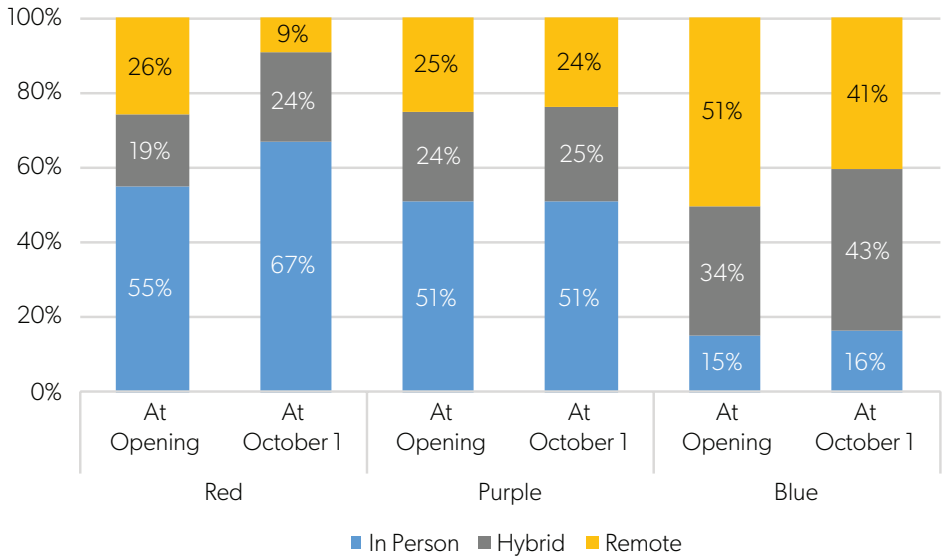
Policies and Platforms Across Reopening Models

In the next section, I shift to outline what each of the three reopening models looked like as described in the first week schools reopened.

Different questions apply to what approaches are followed in each of the three reopening models—remote only, hybrid, and in person. C-ERLS collects data from district websites, so it can reliably capture only certain kinds of data. For instance, districts returning with an in-person option provide little description of the formats or types of instruction students should expect because they are returning to familiar instructional territory. For these districts, the measures to mitigate the pandemic threat in their schools are discussed at more length and are actually in place.

In contrast, remote-only districts may or may not discuss their plans for mitigating virus transmission when buildings open, but they should have basic information about the platforms and expectation for remote instruction. Hybrid districts would be expected to have information on both areas, but even here, the information may not apply equally, as some

Figure 9. Reopening Status at Opening and Status at October 1, by State Voting History



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

Table 3. Percentage of Schools Open as of October 1, 2020

	State Voting History		
	Red	**Purple**	**Blue**
Less Than Four Weeks	1%	0%	24%
Four to Five Weeks	20%	41%	43%
Six to Seven Weeks	64%	51%	32%
Eight Weeks or More	15%	8%	1%

Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020; and states' voting histories in presidential elections from 2000 to 2016.

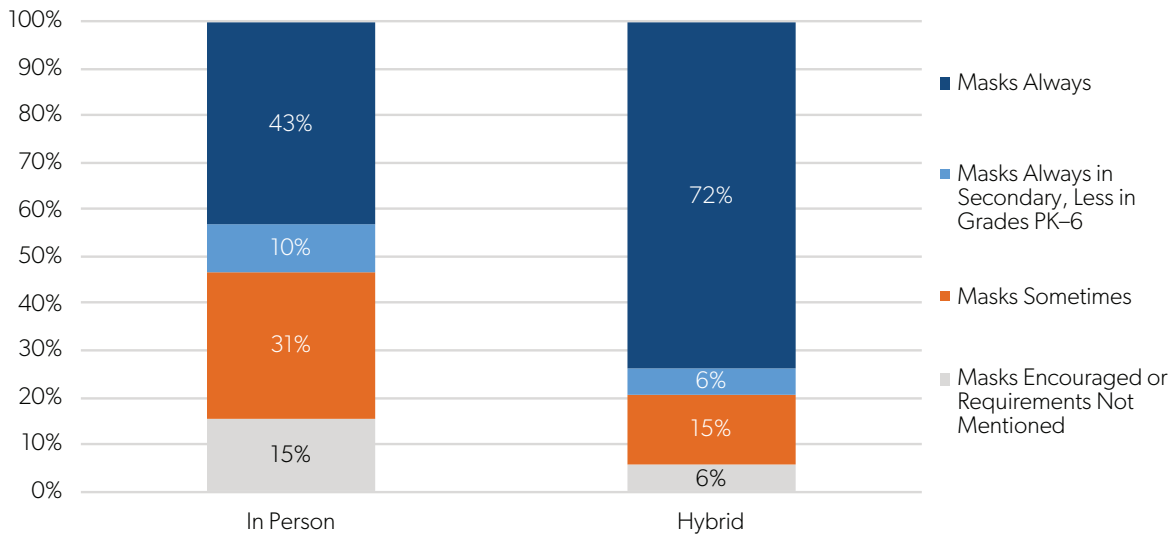
hybrid districts have rotating schedules while others are included in the category because some grades are in person while others are remote.

I present information on applicable questions by reopening status, first for districts with any in-person instruction, which can apply to both in-person and hybrid districts, and second for remote instruction, which similarly may apply to both hybrid and remote schools.

Overview of In-Person Instruction. Any in-person instruction, whether full-time or in a hybrid program, is tasked with implementing strategies to mitigate the spread of the virus in schools. I examine the most common of these—mask usage—and other health and safety precautions in buildings, in the organization of classes, and on busses. By looking at a number of indicators, schools that returned in a hybrid model had more extensive health and safety precautions compared to schools in districts that returned in person.

Mask Requirements. Compared to schools in districts that opened in person, schools with hybrid models had stronger mask requirements, as seen in Figure 10. Forty-three percent of in-person schools required masks be worn indoors at all times except for meals, compared to 72 percent of hybrid schools.

Figure 10. Mask Requirements in Schools with In-Person and Hybrid Instructional Options



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

Table 4. Percentage of In-Person or Hybrid Schools Using Various Health and Safety Accommodations

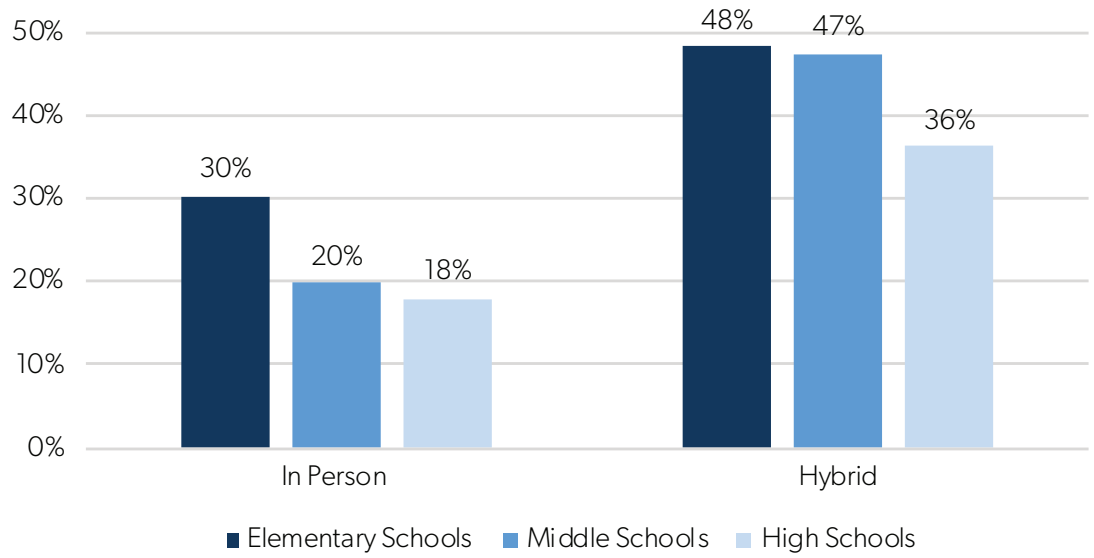
	In Person	Hybrid
Any Safety Measures Outlined	86%	92%
Sanitizing Facilities	79%	92%
Handwashing	67%	65%
Temperature Checks	43%	41%
Testing Program	3%	0%
Other Procedures	7%	17%

Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

Roughly similar percentages held full-time mask requirements for secondary students but looser requirements for lower grades. An estimated 30 percent of in-person schools required mask usage for part of the school day, often exempting situations in which students were seated and socially distanced. A smaller percentage of hybrid schools required masks part of the day, but that lower percentage was on top of the far higher percentage requiring masks full-time.

Other Health and Safety Accommodations. Outside of mask requirements, the health and safety measures looked similar across schools with hybrid and in-person options. Table 4 shows that roughly nine in 10 of these schools had explicit health and safety measures on their district websites. The only statistically significant difference among groups of schools was for sanitizing facilities; that may be attributable to a higher percentage of hybrid schools that mentioned sanitizing on days when students were not at school

Figure 11. Cohorting Students to Prevent Transmission in Schools with In-Person Instruction



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

Table 5. Percentage of In-Person or Hybrid Schools Using Various Bussing Accommodations

	In Person	Hybrid
Any Bus Operational Changes	89%	94%
Masks Required	72%	86%
Limit Capacity	38%	71%
Screening Students	12%	13%
Limited Service	9%	17%
Other Accommodations	34%	38%

Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

and thus may not actually denote differential sanitizing rates. About two-thirds of schools that had any in-person option required or encouraged frequent handwashing during school, and about four in 10 used temperature checks. Few schools were in districts that made testing available for students.

Another means of mitigating pandemic risks was cohorting students, in which "bubbles" or groups of students are organized to have minimal contact with students in other classes or grades. About 36 percent of schools with any in-person instruction used cohorting to mitigate the risk of transmission, which is lower than the 49 percent of schools that reopened with a hybrid model. Figure 11 shows that cohorting was used more often in lower grades in both in-person and hybrid schools.

The majority of schools with any in-person instructional options had policies in place to mitigate pandemic risks on buses, as seen in Table 5. Eighty-six percent of schools with a hybrid model required masks on busses, which was higher than the percentage of in-person schools. Higher percentages of hybrid

Table 6. Instructional Platforms in Hybrid and Fully Remote Schools

	Available Platforms		
	Packet	**Asynchronous**	**Synchronous**
Spring 2020	83%	86%	44%
All Hybrid Districts	23%	88%	90%
Elementary Schools	24%	86%	88%
Middle Schools	24%	90%	84%
High Schools	24%	88%	86%
All Remote Districts	22%	95%	99%
Elementary Schools	22%	94%	99%
Middle Schools	22%	94%	99%
High Schools	22%	95%	99%

Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

schools also limited capacity on buses or limited bus service. However, these differences are part and parcel of the decision to return with a hybrid schedule and half or less of the population of students and thus may not reflect bus specific policies.

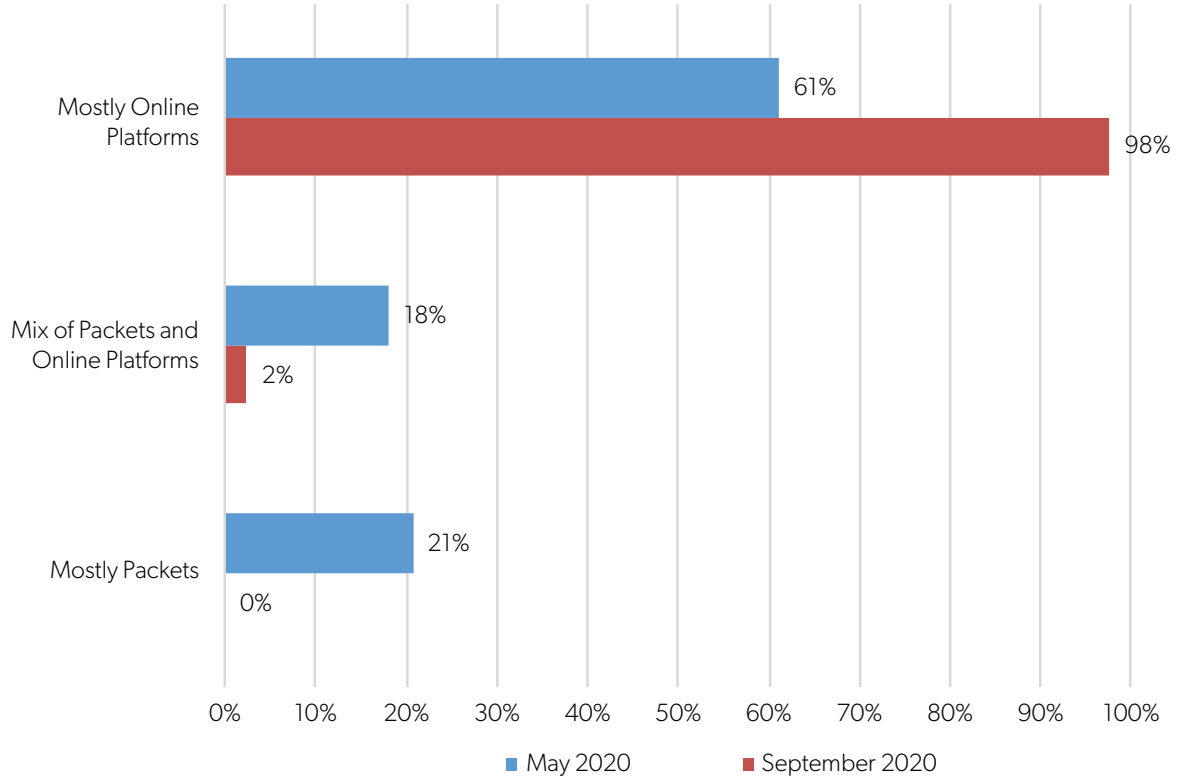
I classified instructional platforms into three nonexclusive categories, defined by the increasing level of directed instruction they entail. The first is instructional packets, in which districts or schools provide static, grade-appropriate worksheets or bundles of materials that students can complete at home. The second and third categories include programs that use web-based platforms to enable asynchronous or synchronous directed instruction. Asynchronous instruction uses web-based platforms such as Google Classroom that allow schools or teachers to push out updated resources and assignments to students who are logged in to the platform and allow students to return completed work. Synchronous instruction allows "live" (but not in-person) instruction to occur over the internet, using platforms such as Zoom or Google Hangouts.

Overview of Remote Instruction. Schools that reopened in either a hybrid or fully remote format provide remote or virtual instruction to students at home. I examined these schools for the remote instructional platforms using the same measures C-ERLS gathered on all schools in the spring.

Educational Offerings. In the spring, most schools offered both packets and asynchronous platforms, while 44 percent were in districts that had synchronous platforms available (Table 6). At reopening, that pattern flipped, with a relatively small portion of districts using instructional packets, and these were often work given to them by teachers on days they were in buildings, and the vast majority provided instruction using asynchronous and synchronous platforms. These percentages should be interpreted with the liberal definition of hybrid districts, which includes those with less than five days of remote instruction. Those with more days of in-person instruction, up to four days per week, may not need online platforms for remote days.

A similar pattern is evident in remote districts, which had even more complete online platforms for remote instruction. Nearly all schools had asynchronous or synchronous instruction available at fall reopening.

Figure 12. Share of Remote Schools Relying on Packets Compared to Online Platforms, by Spring 2020 and Fall 2020



Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

Categories of Remote Instruction. In the spring, C-ERLS measured the platforms that schools relied on principally for remote education, and Figure 12 shows that 61 percent relied mostly or wholly on online programs, while 18 percent relied on a mix of online platforms and instructional packets and another 21 percent principally relied on packets. At fall reopening, schools that opened remotely overwhelmingly relied on online platforms, and none relied on packets principally. This is encouraging evidence that the fall remote instruction is an improvement on the emergency learning from the spring.

However, it should not be taken as a positive indicator of instructional quality. The capacity to deliver live instruction was a conspicuous shortcoming for remote learning last spring, and student progress undoubtedly suffered because of it. Its universal availability in remote schools this fall only proves that a minimum benchmark for instruction has been met, which may be cause for relief, but not celebration.

Overview of Remote-Only Instruction. Finally, I examined educational offerings for schools that opened remote only with no option for in-person instruction.

Expected Instructional Time. We gathered data on the number of hours teachers and students were expected to invest in remote instruction in schools that only offered remote learning this fall. This information was noticeably absent from most websites, even in the most general forms. Table 7 presents the percentages of schools that had information on the instructional time and the total work hours expected of students and teachers. About one in four schools were in districts that listed instructional time expected for

Table 7. Percentage of Remote Schools with Information on Student and Teacher Expectations for Live Instruction and Total Work Invested

Website Had Information on Expected Instructional Time	
For Students	26%
For Teachers	18%
Website Had Information on Expected Total Work Hours	
For Students	13%
For Teachers	7%

Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

Table 8. Remote Schools Offering Internet Access, Devices, Contact, and Social-Emotional Supports

	Spring 2020	Fall 2020
Any Internet Assistance	70%	94%
Internet General Assistance	54%	80%
Offer Wi-Fi Hot Spots	26%	48%
Offer Corporate Discounts	39%	12%
Offer Wi-Fi Via Buses	5%	5%
Offer Multiple Access Options	12%	14%
Any Devices	66%	92%
Chromebooks	40%	52%
Generic Laptops	20%	29%
IPads	11%	23%
Other Devices	6%	7%
Offer Multiple Device Options	10%	23%
Any One-on-One Contact Strategies	74%	71%
Asynchronous Web Platforms	38%	51%
Online Office Hours	31%	27%
Phone Calls	25%	27%
Email	52%	24%

Source: Author's calculations using C-ERLS data from Waves 6 and 7, October 1, 2020.

students, even in a rough estimation, and time expected of teachers was available in even fewer. Time estimates for non-instructional time were available about half as often as the meager percentages for instructional time were.

Technology Assistance and Social and Emotional Support. Tables 8 and 9 display percentages of remote schools offering various supports that are particularly important for remote instruction this fall. Help with internet access and devices is obviously important when the primary means of instruction requires access, but less obvious perhaps is the need for one-on-one contact between teachers and students and social-emotional supports while schools are shut down. These latter needs of students were important in the spring when we first measured them, but this fall, students in remote schools have quite possibly been out of regular contact with their peers and teachers for more than half a year, making their needs for personal interaction and support through school as important as they ever have been.

Nearly all remote schools listed some means of help getting internet access or devices. The most common form of help with internet access was generalized offers for help, and nearly half of schools offered Wi-Fi hot spots to families that requested them. More than 90 percent of schools explicitly offered students devices, with Chromebooks being the most common option.

Seven in 10 remote-only schools describe some form of expected one-on-one contact between students and teachers. The most frequent option was through online platforms, mentioned in more than half of schools. About one in four schools had teachers designate

Table 9. Remote Schools Offering Social-Emotional Supports

	Schools
Any Social-Emotional Support Mentioned	79%
District Staff or Programs	69%
School Counselors	40%
Externally Run Support Programs	12%
Targeted for At-Risk Students	8%
Other Social and Emotional Learning Supports	1%

Source: Author's calculations using data from C-ERLS Wave 7, October 1, 2020.

online office hours for one-on-one contacts, make phone calls to students, or reach out regularly through email.

As seen in Table 9, about four in five schools were in districts that described explicit social-emotional supports for students. The most frequent form of support came from district staff or programs other than school counselors, while 40 percent of schools had counselors available to support students. Smaller portions of schools had programs offered through entities outside the school district or targeted programs specifically for the social-emotional needs of at-risk students.

Conclusion

As the first full school year begins under the shadow of the COVID-19 pandemic, there is a far more varied school landscape. In spring 2020, all schools nationwide were more or less in the same boat. All buildings were closed, and all students were learning remotely on what was essentially an emergency footing. This fall, schools reopened under various models, shaped primarily by the most basic of education technologies: open school buildings. Many schools' reopening models have already shifted early in this new school year, and with COVID-19 cases rising as winter approaches, we can only expect more changes to come.

Across the nation, the most common reopening model was offering an option for students to return to schools in person. We found that about two in five schools across the nation began the year with an option for students to return for full-time in-person instruction, one-third returned fully remote, and the remaining 25 percent offered either a hybrid model or in person for select grades.

Schools' reopening models varied greatly across district composition and their larger community contexts. I found more schools returned in person this fall when districts had lower percentages of minority students, high achievement, and low poverty. Likewise, reopening plans varied depending on community characteristics, with more schools returning in person when in districts that have a low adult college population, low single-parent rate, lower rates of poverty, and low broadband access. Factors from both within the school and outside the schools, working together in tandem, influenced districts' reopening plans. Finally, red, purple, and blue states have different reopening patterns, though it will be important for additional research to disentangle political influences from other factors that drive these differences.

What do schools' reopening plans mean for the year ahead? There is some fuel for optimism in these findings. Across many measures, fall reopening plans indicate a clear improvement from the "emergency learning" offered in the spring. The improved instructional platforms in remote-only schools, however, may be more of return to a minimum baseline rather than reason for substantial optimism. Examining the health and safety precautions for schools returning with some kind of in-person instruction may indicate some of the ways districts can allow students to safely return in person. Furthermore, districts are making an even greater effort to address students' social and emotional needs and engage parents in students' learning. In short, this school year looks to be a big improvement from the spring.

Looking at districts' reopening plans in light of COVID-19 case counts, however, shows reasons for concern. The relationship between COVID-19 cases

and school closures appears weaker than it should be. More schools in red states had ill-advised reopenings, based on measures offered by HGHI, but blue states may have been overly cautious, with more than one in four schools that could likely return to some in-person instruction but instead opened remotely. For most students, remote instructional quality pales in comparison to in-person learning, raising the question of what long-term ramifications remote learning might pose to student outcomes and whether some of those ramifications might have been avoided.

By October 1, about one in 10 schools had shifted from remote-only instruction to some option for in-person learning. That trend is likely to continue for some time, but cases are already rising across the country, and winter is coming, which threatens to bring a surge in COVID-19 cases that has been widely predicted. Those countervailing trends promise to introduce more change as strained school systems continue to adapt and navigate an entire school year during a pandemic.

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Appendix A. Overview of AEI's COVID-19 Educational Response Longitudinal Survey

AEI's COVID-19 Educational Response Longitudinal Survey (C-ERLS) was developed quickly amid the pandemic with the intention of being rapid, reliable, representative, and repetitive. The design allows us to gather data that paint a current picture of school and district efforts.

Information was gathered exclusively from school district websites (and pages linked to them) on the assumption that these sites are the centralized communication hub for most districts and that they yield current information with an assuredly high response rate.

I selected a nationally representative sample of 250 public school districts so the data would reflect the broader population of districts.[12] In total, this is under just 2 percent of all regular school districts in the country, providing information for 10,289 schools (roughly 11 percent of all public schools).[13]

Although the C-ERLS sample is at the district level, I gathered information about what those districts are offering across all their schools. Thus, I present results as percentages of all schools, which can be interpreted as the proportion of public schools[14] whose districts are offering a given program, platform, or service. The results in this report are presented as percentages of schools and will differ from percentages at different units of analysis. For example, in the breakdown of reopening plans, larger districts are both more often remote and have more students per school. Both would yield different percentages for students than for schools. As such, the percentages in this report would be different if reporting for students rather than schools.

Some districts I sampled contain charter schools, many of which will not extend the programs and platforms presented on district websites. Our survey method does not account for these charter schools, which may bias the school-level estimates by small amounts.

Note the variance for this survey, with a margin of error of 6.1 percent, is relatively large, and even modest differences in estimates may not be statistically significant. Each wave of C-ERLS data will be publicly available on the AEI website in a modified spreadsheet that masks the identity of small districts (those with six schools or fewer). Additional details about the survey instrument, sampling design, and variable definitions are available on the AEI website.[15]

Notes

1. Nat Malkus, "Too Little, Too Late: A Hard Look at Spring 2020 Remote Learning," American Enterprise Institute, October 6, 2020, https://www.aei.org/research-products/report/too-little-too-late-a-hard-look-at-spring-2020-remote-learning/.
2. Will Stone, "Coronavirus Cases Rise to Highest Level Since Late July," NPR, October 19, 2020, https://www.npr.org/sections/health-shots/2020/10/19/924972322/coronavirus-cases-rise-to-highest-level-since-late-july.
3. *New York Times*, "Covid in the U.S.," https://github.com/nytimes/covid-19-data.
4. Specifically, the statistic is the seven-day average new case count per 100,000 population in the county or counties the school district was located in. Population data for counties were gathered from the US Census Bureau for 2019.
5. Districts that offered both hybrid and fully in-person options were characterized as having an in-person option. At least 12 percent of schools were in districts that began the year with a "soft start" or short phase-in period. These periods were used to establish new routines for the first days and up to two weeks of the year, but districts had a firm plan to reach the reopening status, as reflected in Figure 1 at or before two weeks. Concern over complete data capture for this measure preclude a more exact estimate.
6. A few school districts provided in-person instruction for pre-kindergarteners, kindergarteners, or first-graders, but we counted these as fully remote, as that was the only option for the vast majority of students.
7. Some districts that were counted in the fully remote category described efforts of varying specificity to bring certain groups of students to school buildings for supplemental instruction, but these were only for subsets of populations and were thus retained in the fully remote category.
8. Centers for Disease Control and Prevention, "Indicators for Dynamic School Decision-Making," September 15, 2020, https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/indicators.html.
9. Malkus, "Too Little, Too Late."
10. See Pandemics Explained, "How Severe Is the Pandemic Where You Live?," Brown University, School of Public Health, https://globalepidemics.org/key-metrics-for-covid-suppression/.
11. Robin Lake, "Politics, Not Science, Driving Many School Opening Plans," Center on Reinventing Public Education, August 27, 2020, https://www.crpe.org/thelens/politics-not-science-driving-many-school-opening-plans.
12. We selected 250 school districts randomly and proportional to size, with size defined as the number of operational schools in the district. The sampling frame consisted of regular school districts in all 50 states and Washington, DC, with at least one operational school, as listed in the universe district file from the National Center for Education Statistics' Common Core of Data from the 2017–18 school year.
13. Percentages for school districts can be calculated with the weights available on the complete dataset but not from the single-wave spreadsheets. Raw percentages computed from the single-wave spreadsheet do yield estimates on the percentage for schools. Variance estimates require additional analysis using the complete dataset, which is available upon request.
14. Even more specifically, public schools in the sample reflect all schools in regular school districts in all 50 states and Washington, DC, that had operational schools as reported in the universe district file from the National Center for Education Statistics' Common Core of Data from the 2017–18 school year.
15. American Enterprise Institute, "COVID-19 Education Response Longitudinal Survey (C-ERLS)," https://www.aei.org/covid-19-education-response-longitudinal-survey-c-erls/.