RESEARCH BRIEF

Approaches to Remote Instruction:
How District Responses to the Pandemic Differed Across Contexts

Authors: Jordan Rickles | Mike Garet | Samantha Neiman | Sarah Hodgman

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District Response to COVID-19

The COVID-19 pandemic led schools across the country to close their buildings, requiring millions of students to continue learning from home and leading to sudden shifts in how educators provide instruction, leadership, and support.

The American Institutes for Research (AIR) launched a nationally representative survey to better understand how school districts and charter management organizations (CMOs) responded to the pandemic. The National Survey of Public Education's Response to COVID-19 was sent to leaders in 2,500 school districts and 260 CMOs in late May 2020.[1]

In this brief, we present survey responses that highlight how districts approached remote instruction during spring 2020. The brief updates and expands upon the First Look brief, which previewed survey results about districts' approaches to remote instruction during the pandemic. Our hope is that these results inform future practices of educators, policymakers, and researchers.

About This Brief

- This brief presents survey results about how districts approached remote instruction when the COVID-19 pandemic forced schools to close in spring 2020.

- The results are based on responses from 717 school districts that serve elementary grade students.

- Because districts face a variety of challenges, we report results separately across a range of community contexts and districts' pre-existing technology infrastructure.

- Survey responses indicate that districts varied in their approaches to distance learning, with important differences in how high-poverty districts and districts without a learning management system approached distance learning.

- The results highlight discrepancies in learning opportunities and a need for guidance, resources, and research to address any learning gaps these discrepancies may exacerbate.

Serving Students During the Pandemic

As awareness of the pandemic increased across U.S. communities, districts closed their school buildings and sought alternative ways to meet their students' needs, including providing meals, ensuring students' safety and well-being, and continuing instruction in different forms. In this brief, we touch on one aspect of districts' work during the pandemic: the transition to distance, or remote, instruction. To provide an overview of districts' approaches to remote instruction, we focused our analysis on three broad components of instruction: (a) the amount of time districts expected students to engage in instructional activities, (b) whether the instructional content focused primarily on reviewing previously taught content or teaching new content, and (c) the primary ways in which instruction was delivered. To gauge instructional delivery, we look at whether two activities were a primary part of a district's distance learning strategy: delivery of physical learning materials (e.g., paper packets) and live virtual instruction provided by teachers to students. While the survey asked separate questions about distance learning at different grade levels, in this brief we focus on instruction for elementary grade students.

Much of what we currently know about education during the pandemic comes from reporting on selected districts and information posted on district websites (e.g., Gross & Opalka, 2020; Malkus, Christensen, & Schurz, 2020). These sources indicate that when school buildings closed, districts initially focused on meeting critical needs like meal distribution. It took time for districts to develop and implement distance learning approaches. Surveys of teachers and principals raise concerns about limited preparation for delivering remote instruction and unequal access to learning opportunities (Hamilton, Kaufman, & Diliberti, 2020). And surveys of parents raise concerns about the amount of schoolwork students did while at home (Bailey & Shaw, 2020).

The National Survey of Public Education's Response to COVID-19 adds to this picture by providing information collected directly from district leaders about their district's expectations and strategies during the initial months of the pandemic.[2] Because districts face varied challenges (Blagg, Blom, Gallagher, & Rainer, 2020), we present results across different community contexts—poverty, geography, size, and household access to technology—as well as districts' pre-existing technology infrastructure—use of a learning management system (LMS) and computer availability within the schools.[3] Each of these factors is potentially associated with particular challenges that districts may face when providing remote instruction and the educational resources to which districts have access.

Approach to Remote Instruction Differed Across Some Community Characteristics and the Existing District Technology Infrastructure

Overall, districts differed in the amount of time they expected elementary students to engage in instructional activities during remote learning last spring (see Figure 1). For example, 29% of districts expected students to spend less than 2 hours on instructional activities per day, while 15% of districts expected 4 or more hours per day. These time expectations are generally lower than the daily instructional hours required by states under normal circumstances, during which states tend to require,

on average, about 5 hours of instruction per day. Even within the same states, however, districts differed in their expected hours of instructional time.[4]

Community characteristics. Across characteristics of the communities that districts serve (poverty, urban/rural status, district size, and digital access), the survey responses indicate small differences in the average amount of time districts expected students to engage in instructional activities but some larger differences in terms of whether instruction focused on reviewing past content rather than new content (see Figure 2). In addition, community context is related to how remote instruction was delivered (see Figure 3). For example, high-poverty districts were more likely to distribute physical learning materials and less likely to have live virtual classes than low-poverty districts.[5]

Existing technology infrastructure. Districts with pre-existing technology infrastructure tended to take a different approach to remote instruction than districts lacking specific types of technology prior to the pandemic. In particular, districts that widely used an LMS (e.g., Google Classroom, Schoology, or Canvas) before the pandemic expected more hours of instructional activities and were less likely to focus primarily on reviewing prior content in spring 2020 than districts that did not widely use an LMS (see Figure 4), In addition, districts with an LMS were less likely to rely on distributing physical learning materials and were more likely to have live virtual classes (see Figure 5).[6] Differences between districts with and without a computer for every student to use at school were not as pronounced.

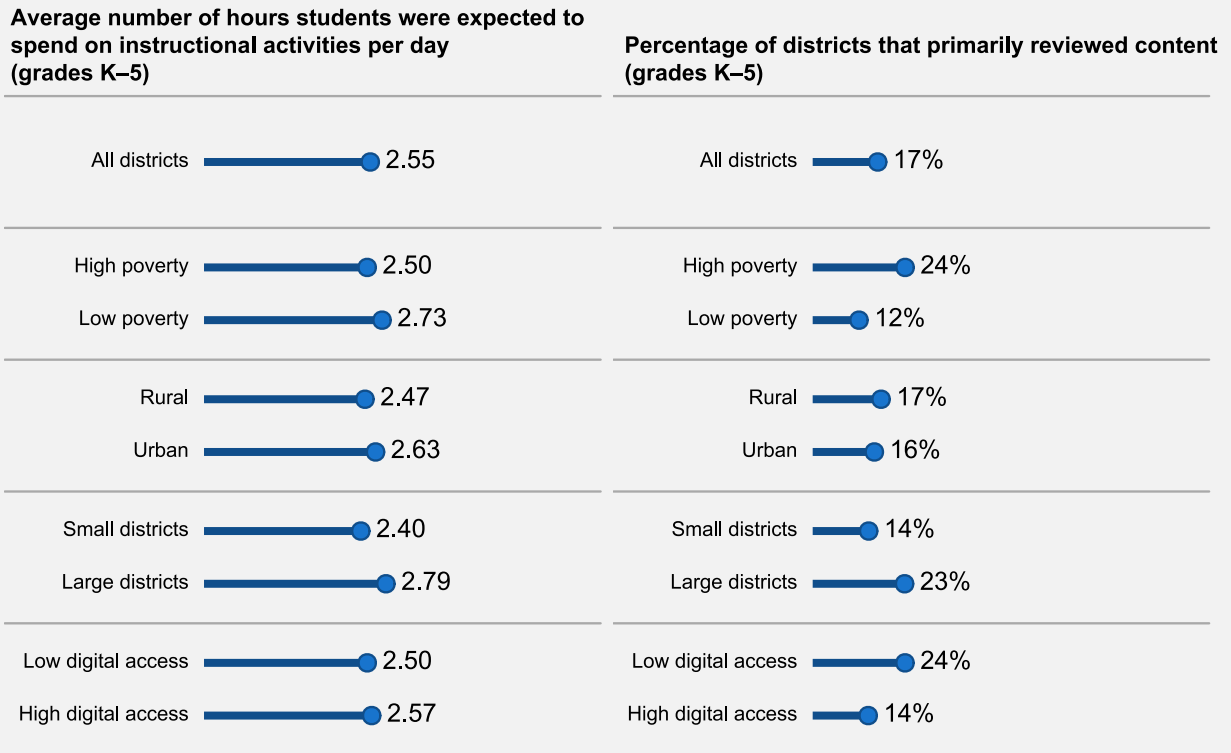### Figure 1. Expectations for the amount of time that students should spend on instructional activities differed across districts

Percentage of districts by number of hours students were expected to spend on instructional activities per day (grades K–5)

Less than 2 hours	2 to < 3 hours	3 to < 4 hours	4 to < 5 hours	5 or more hours
29%	32%	24%	11%	4%
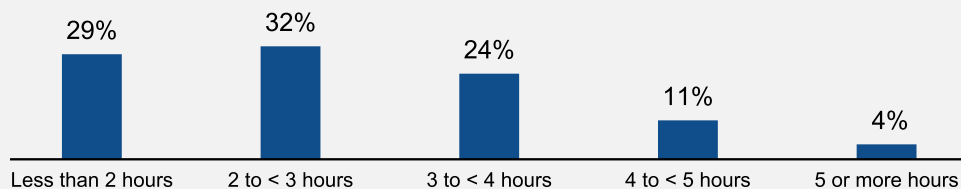
Sample size: 713 districts.

Note. On the survey, districts were asked to report the number of hours per day that students were expected to spend on instructional activities as districts responded to the COVID-19 pandemic in spring 2020, including class time and time working on assignments. The question was asked separately for grades K–2 and grades 3–5. We averaged responses across the two grade ranges to report on expected hours for grades K–5.

Figure 2. Expectations for the amount of time that students should spend on instructional activities and primary content focus, by district community characteristics

Average number of hours students were expected to spend on instructional activities per day (grades K–5)

District	Hours
All districts	2.55
High poverty	2.50
Low poverty	2.73
Rural	2.47
Urban	2.63
Small districts	2.40
Large districts	2.79
Low digital access	2.50
High digital access	2.57

Percentage of districts that primarily reviewed content (grades K–5)

District	Percentage
All districts	17%
High poverty	24%
Low poverty	12%
Rural	17%
Urban	16%
Small districts	14%
Large districts	23%
Low digital access	24%
High digital access	14%

Sample sizes (left panel): All districts = 713, High poverty = 260, Low poverty = 169, Rural = 237, Urban = 476, Small district = 152, Large district = 181, Low digital access = 241, High digital access = 450.
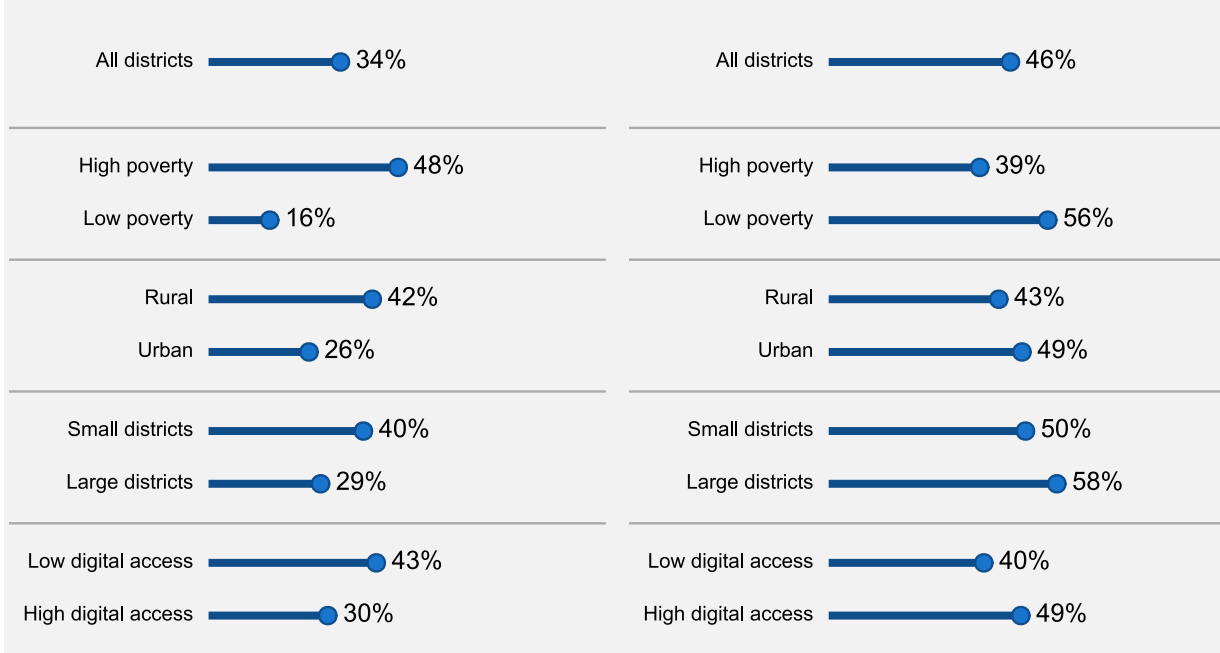
Sample sizes (right panel): All districts = 717, High poverty = 264, Low poverty = 169, Rural = 237, Urban = 480, Small district = 152, Large district = 184, Low digital access = 244, High digital access = 451.

Note: The left panel displays the mean number of hours per day that students in grades K–5 were expected to spend on instructional activities as districts responded to the COVID-19 pandemic in spring 2020, including class time and time working on assignments. The right panel displays the percentage of districts in which instruction consisted primarily of reviewing content taught earlier in the year. Other response options included a combination of past content and new content or primarily learning new content. We defined districts serving a community with low digital access as those in which more than 10% of children live in a household without a computer or more than 15% of children live in a household without broadband internet access.

Figure 3. The instructional activities emphasized in a district's strategy for delivering distance learning, by district community characteristics

Percentage of districts in which physical learning materials (e.g., paper packets) were a primary part of the distance learning strategy (grades K–5)

All districts	34%
High poverty	48%
Low poverty	16%
Rural	42%
Urban	26%
Small districts	40%
Large districts	29%
Low digital access	43%
High digital access	30%

Percentage of districts in which live virtual classes taught by the student's teacher were a primary part of the distance learning strategy (grades K–5)
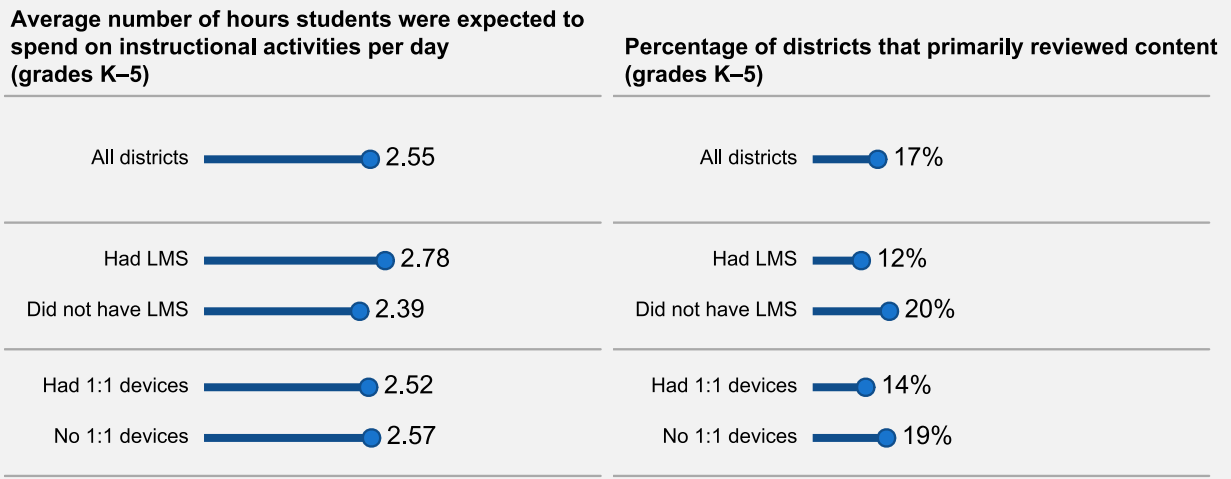
All districts	46%
High poverty	39%
Low poverty	56%
Rural	43%
Urban	49%
Small districts	50%
Large districts	58%
Low digital access	40%
High digital access	49%

Sample sizes (left panel): All districts = 716, High poverty = 264, Low poverty = 168, Rural = 236, Urban = 480, Small district = 151, Large district = 184, Low digital access = 244, High digital access = 450.

Sample sizes (right panel): All districts = 717, High poverty = 264, Low poverty = 169, Rural = 237, Urban = 480, Small district = 152, Large district = 184, Low digital access = 244, High digital access = 451.

Note: We defined districts serving a community with low digital access as those in which more than 10% of children live in a household without a computer or more than 15% of children live in a household without broadband internet access.

Figure 4. Expectations for the amount of time that students should spend on instructional activities and primary content focus, by district technology infrastructure
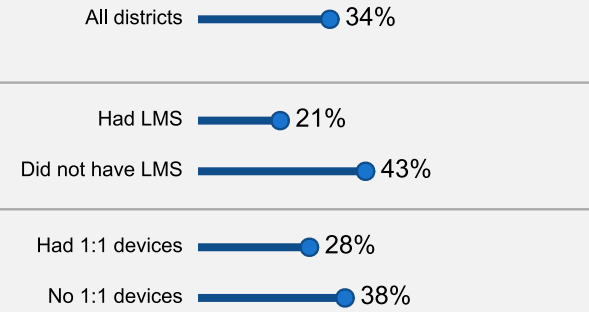
Average number of hours students were expected to spend on instructional activities per day (grades K–5)

All districts	2.55
Had LMS	2.78
Did not have LMS	2.39
Had 1:1 devices	2.52
No 1:1 devices	2.57

Percentage of districts that primarily reviewed content (grades K–5)

All districts	17%
Had LMS	12%
Did not have LMS	20%
Had 1:1 devices	14%
No 1:1 devices	19%

Sample sizes (left panel): All districts = 713, Had LMS = 326, Did not have LMS = 387, Had 1:1 devices = 289, No 1:1 devices = 424.

Sample sizes (right panel): All districts = 717, Had LMS = 327, Did not have LMS = 390, Had 1:1 devices = 289, No 1:1 devices = 428.

Note. The left panel displays the mean number of hours per day that students in grades K–5 were expected to spend on instructional activities as districts responded to the COVID-19 pandemic in spring 2020, including class time and time working on assignments. The right panel displays the percentage of districts in which instruction consisted primarily of reviewing content taught earlier in the year. Other response options included a combination of past content and new content or primarily learning new content. The classification of district technology infrastructure is based on survey questions about what the district had widely available before the COVID-19 pandemic emerged. LMS = learning management system. 1:1 = one device per student to use at school (e.g., laptops, tablets).

Figure 5. The instructional activities emphasized in a district's strategy for delivering distance learning, by district technology infrastructure

Percentage of districts in which physical learning materials (e.g., paper packets) were a primary part of the distance learning strategy (grades K–5)

All districts — 34%

Had LMS — 21%
Did not have LMS — 43%

Had 1:1 devices — 28%
No 1:1 devices — 38%

Percentage of districts in which live virtual classes taught by the student's teacher were a primary part of the distance learning strategy (grades K–5)

All districts — 46%

Had LMS — 57%
Did not have LMS — 39%

Had 1:1 devices — 52%
No 1:1 devices — 43%
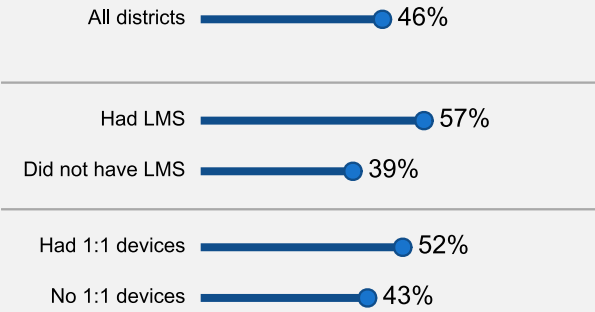
Sample sizes (left panel): All districts = 716, Had LMS = 327, Did not have LMS = 389, Had 1:1 devices = 289, No 1:1 devices = 427.

Sample sizes (right panel): All districts = 717, Had LMS = 327, Did not have LMS = 390, Had 1:1 devices = 289, No 1:1 devices = 428.

Note. The classification of district technology infrastructure is based on survey questions about what the district had widely available before the COVID-19 pandemic emerged. LMS = learning management system. 1:1 = one device per student to use at school (e.g., laptops, tablets).

References

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Endnotes

[1] AIR funded and led the survey development, which was administered by our partner NORC at the University of Chicago. We sent the survey to school districts in every U.S. state and Washington, DC, as well as to charter management organizations (CMOs) across the country. The sample contained 2,536 districts, stratified by state (for districts in 12 focal states) or region (for districts in the remaining states) and locale (urban, suburban, town, and rural). Within these strata, districts were drawn with probability proportional to the square root of enrollment. Large districts were drawn with certainty. The survey was open between May 20 and September 1, with 753 public school districts and 91 CMOs responding. The results reported in this brief use design weights adjusted for nonresponse in the 64 state- or region-by-locale strata. More information about the survey methodology is available in a [technical supplement](#).

[2] We sent the survey to district superintendents and suggested that they could ask other administrators to respond. Administrators were encouraged to ask colleagues for information if they could not respond to a question. Survey responses reflect the beliefs and expectations of district administrators, which may differ from the experiences of school personnel, teachers, parents, and students.

[3] We used U.S. Census data and the U.S. Department of Education's Common Core of Data to characterize the community context of each district. We defined low-poverty districts as those with less than 10% of school-age children living in poverty and high-poverty districts as those with at least 20% of school-age children in poverty. We defined rural and urban based on locale classifications provided by the National Center for Education Statistics (Geverdt, 2015), where rural districts are located within a Census-defined rural territory and urban districts are located within a Census-defined urbanized area or cluster (encompassing cities, suburbs, and towns). We defined small districts as those with total student enrollment less than 1,000 students and large districts as those with 10,000 or more students. We defined districts serving a community with low digital access as those in which more than 10% of children live in a household without a computer or more than 15% of children live in a household without broadband internet access, which roughly represent the national averages for each indicator. We characterized each district's pre-existing technology infrastructure based on responses to questions on the National Survey of Public Education's Response to COVID-19 that asked districts about what kind of technology they had in place before the COVID-19 pandemic emerged. We classified districts as having a learning management system if they reported that it was widely used in the district, and we classified districts as having one device per student for use at school (e.g., laptops, tablets) if they reported that devices were widely provided for elementary grade students.

[4] Because states have different requirements and guidelines for instructional time, we examined the extent to which variation in district-reported expectations for instructional time was a function of differences across states. The analysis suggests that about 15% of the variation in the expected hours reported by districts is attributable to differences across states.

[5] The differences between high- and low-poverty districts discussed in the brief are statistically significant ($p < .05$). Differences may also be significant for other variables in the figures but are not discussed. Information on tests of statistical significance is available on request. District characteristics are multifaceted, and reported differences across one characteristic may be driven by multiple interrelated factors. For example, there is a strong association between poverty and whether the community has a digital deficit, with 64% of high-poverty districts identified as having a digital deficit compared to 10% of low-poverty districts.

[6] The differences between districts with and without an LMS discussed in the brief are statistically significant ($p < .05$). Differences may also be significant for other variables in the figures but are not discussed.

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1000 Thomas Jefferson Street NW
Washington, DC 20007-3835
202.403.5000