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Post COVID-19 Test Score Recovery: Initial Evidence from State Testing Data

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April 2023

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ABSTRACT

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Abstract

The COVID-19 pandemic caused significant disruption in schooling in the U.S., and student test scores showed dramatic declines by the end of the 2020-21 school year. We use state test score data to analyze patterns of test score recovery over the 2021-22 school year. On average, we find that 20% of test score losses are recovered in English language arts (ELA) by 2022, compared to 37% in math. These recovery rates do not significantly vary across demographic characteristics, baseline achievement rates, in-person schooling rates in the pandemic school year, or category-based measures of recovery funding allocations. We observe large state-level variation in recovery rates in ELA – from full recovery to further losses. This evidence suggests state-level factors play an important role in students' academic recovery, but we are unable to isolate particular state factors. Future work should focus on this variation to facilitate a broader recovery effort.

1 Introduction

The COVID-19 pandemic caused a significant disruption in student learning, both within the U.S. and globally. Virtually all U.S. schools closed in March 2020, and school re-opening approaches varied widely throughout the 2020-21 school year. Even students whose schools were open during the 2020-21 school year experienced pandemic-related disruptions.

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Student test scores suffered during this period. In the spring of 2021, both state-administered tests and MAP assessments from NWEA showed large declines in both math and reading compared to prior years (Halloran et al., 2021; Lewis et al., 2021). In the spring of 2022, National Assessment of Educational Progress (NAEP) scores showed historic drops relative to 2019. In these tests, as in the state assessments, we observed the largest declines in math (notably an 8 point decline in Grade 8 math, comparable to scores from 2003) and smaller declines in reading (3 point declines in both Grade 4 and Grade 8, comparable to scores dating to 2005 and 1998, respectively) (NCES 2022a, NCES 2022b).

These large losses have led to crucial questions about recovery. So far, the U.S. Department of Education has allocated a historic $122 billion dollars in relief funds to state education agencies (SEAs) to encourage academic recovery as part of the federal American Rescue Plan Elementary and Secondary School Emergency Relief Fund, or "ARP ESSER." SEAs received ARP ESSER funds in proportion to each state's funding allocation as part of Title I, Part A of the ESEA (U.S. Department of Education, 2021). States, in turn, were required to administer 90% of their allotment to school districts, also in proportion to each district's Title I funding. Notably, ARP ESSER requires that school districts reserve at least 20 percent of their total funding allocation to address learning loss through interventions that respond to students' academic, social, emotional, and mental health needs (U.S. Department of Education, 2021). Understanding what approaches can lead to improved learning outcomes will both be central to recovery from the pandemic learning losses *and* may inform academic interventions more broadly.

In this paper, we provide initial estimates of the extent of test score recovery and its correlates. We use data from states that administered assessments in the Spring of 2021 and the Spring of 2022. First, we evaluate declines in the percentage of students achieving proficiency (as measured by each state's assessment) between Spring 2019 and Spring 2021 to better understand the extent of pandemic learning loss among the states in our sample. Consistent with existing literature (Halloran et al., 2021; Lewis et al., 2021; Kuhfeld et al., 2022), we show large declines in test scores between 2019 and 2021. On average, ELA and math proficiency rates among the states in our sample declined by 6 and 11 percentage points, respectively, over this period. These declines were larger in lower income districts and in districts with less in-person learning during 2020-21. Test score declines were more severe in math than in ELA among the states in our sample, on average.

Second, we evaluate initial recovery rates, which we define as the share of the 2019-2021 test score decline that is recovered by Spring 2022. On average, approximately 20% of the losses in ELA and 37% of the losses in math were recovered among the states in our sample. Initial test score losses are strongly correlated with recovery: that is, the districts in which

student proficiency rates declined the most see the largest absolute recovery. We focus, however, on the *percent* of the losses recovered. Using this approach to recovery, we observe wide variation in recovery across the sample, suggesting the potential for using these data to better understand what factors may play a role in students' academic recovery.

We first estimate the relationship between recovery rates and district demographics, remote learning during the 2020-21 school year, and pre-pandemic test scores. We find limited evidence of correlation with recovery rates. For example, in the tercile of districts with the highest share of Black students, math scores recovered 35% between 2021 and 2022, while the recovery was 39% in districts with the lowest share.

We then estimate the relationship between recovery rates and planned district-level ARP ESSER spending priorities. This is an important test because the goal of this spending was, at least in part, to improve test score performance. We use data that indicates if districts designated using ARP ESSER funding across the following categories: academic interventions, equity and at-risk learners, mental and physical health, professional development, technology, facilities and operations, general staffing needs, transportation, and other (Burbio, 2022). The regressions are weighted by district enrollment, and we again estimate separate regressions for ELA and math scores. We find no evidence that district-level spending priorities correlate with recovery as of Spring 2022. However, we note that current investments may produce longer-term academic outcomes, which may explain, at least in part, a lack of initial findings here.

In contrast to these null results, we find significant variation in academic recovery rates at the state level. Several states *continued to decline* in ELA scores between 2021 and 2022, while others show a full recovery to their 2019 ELA levels. We see much less variation in math across states, and every state in our sample shows at least some recovery in math scores. The state-level variation occurs even across states with similar initial declines in ELA scores. For example, Arkansas experienced an average of a 9 percentage point decline in ELA scores, with a 41% recovery, while Connecticut had an 8 percentage point decline with a 19% recovery. Notably, we observe this state-level variation on either side of state borders, suggesting demographic differences do not drive these findings. Despite our efforts, we were unable to identify particular state-level policies which correlate directly with recovery, though we have an initial indicator that reading legislation may be related to future ELA outcomes. The large state-level variation suggests that there likely *are* better and worse policies for recovery, and we hope future work will be better able to elucidate them.

Broadly, this paper contributes to recent literature on learning loss in the wake of the COVID-19 pandemic (Lewis et al., 2021; West et al., 2021). This includes papers on inequality in access to in-person instruction (Goldhaber et al., 2022; Oster et al., 2021; Parolin &

Lee, 2021) and evidence on the relationship between in-person learning and test score losses (Halloran et al., 2021; West et al., 2021). More specifically, this paper adds to literature studying academic recovery after the pandemic. For example, Kuhfeld and Lewis (2022) explored learning loss and recovery at a national level from the 2021-22 school year based on NWEA MAP Growth data and found that, overall, student achievement continued to lag relative to a typical year and that declines were greater in math compared to reading. In comparing Spring 2019 to Spring 2022 outcomes across districts on state assessments, Fahle and colleagues (2022) found that test score declines were greater among districts with more remote learning during 2020-21, but that this was not the main factor and that substantial variation was observed among districts. We expand on these analyses by using data on changes in academic proficiency relative to the recovery baseline year of 2020-21, and by looking at factors affecting recovery outside of schooling mode in 2020-21.

Finally, we add to the small but growing literature studying variation in recovery levers and student outcomes. In particular, we consider the impact of ARP ESSER funding. As districts are still using these funds, research on this program is limited. However, one recent study compared academic outcomes with recovery interventions that four school districts implemented with ARP ESSER funding during the 2021-22 school year (Carbonari et al., 2022). The specific interventions examined include tutoring, small group interventions, out-of-school-time programs, virtual learning programs, and extended school year approaches. The researchers found that interventions did not meet desired outcomes in terms of scale or impact due to a wide variety of implementation challenges, such as issues engaging the targeted students, and issues related to staffing and scheduling. We expand this work by conducting analyses of district funding decisions using a larger sample and more funding categories to examine the relationship between funding priorities and academic outcomes.

In the sections that follow, we describe the data used for our analyses, and present our results related to the correlates of academic recovery. We follow this with a discussion of our finding relating to state-level variation in recovery, and conclude with some promising next steps for future research.

2 Data

We use the following sources of data: 1) district-level state standardized assessment data from Spring 2017–2022; 2) district-level ARP ESSER planned expenditure data; 3) district-level schooling mode data from the 2020-21 school year; and 4) additional data including district-level demographic data from NCES, county-level COVID-19 transmission level data for 2021-2022 from the CDC, and data on states' reading curricula policies from multiple

sources.

2.1 Assessment Data

We base our measure of students' academic proficiency over time on state standardized assessment data during Spring 2017–2022; data for Spring 2020 are not available due to cancelled assessments resulting from the COVID-19 pandemic. States are required to administer assessments in reading/English language arts and mathematics to students in Grades 3–8 and once in high school (as well as science in select grades) as part of the Every Student Succeeds Act (ESSA). These tests therefore provide a comprehensive and critical look at within-state changes over time that NAEP data cannot provide. However, these assessment results cannot be compared across states, as many states administer their own unique tests. We use these assessments to look at changes over time for each state, and discuss these changes relative to each state's own assessment and proficiency criteria. See Appendix A for greater detail of each state's assessment.

We focus our analyses on changes in students' levels of proficiency as measured by each state's assessment in English language arts (ELA) and math within Grades 3–8. We include assessment data in our analyses if a) the state has been using the current assessment since at least 2018 (to be able to look at pre-pandemic trends); b) the state has not changed cut score criteria that would affect the number of students considered proficient; and c) state-level participation rates were at least 70 percent in 2021. Our final sample includes assessment data from the following 21 states: Arkansas, Colorado, Connecticut, Georgia, Idaho, Kansas, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, New Hampshire, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, Virginia, West Virginia, Wisconsin, and Wyoming.

2.2 ARP ESSER Data

We use information on district-level ARP ESSER planned expenditures as a measure of district-level priorities for addressing student learning loss. Our research team accessed data from Burbio's School Budget Tracker Database (2022), which documents approximately 5,000 school district plans for ARP ESSER spending. This database categorizes planned district expenditures into over 100 categories within the topic areas such as academic intervention and learning loss, physical and mental health, facilities and operations, technology, and staffing and retention. Reported expenditure allocations were drawn from district ARP ESSER plans when available from district websites, or state e-grant portals if not. One data limitation is that states had different planned expenditure reporting requirements for

districts. For example, some states only asked districts to designate which categories would receive ARP ESSER funding, while other states required districts to provide specific funding allocation amounts. Moreover, not all states listed the same funding categories. Finally, the database lacks information on smaller and more rural districts with lower student populations. Nonetheless, the database represents the most detailed district-level information available on planned expenditures by category (rather than overall allocations). We do not use measures of current actual expenditures given that districts are currently in different phases of using planned ARP ESSER funds.

2.3 Additional Data Sources

Schooling Mode Data: We draw district-level schooling mode data from the COVID-19 School Data Hub (CSDH, 2023), which is the only public database that centralizes schooling mode data provided directly from state agencies (typically State Education Agencies, or SEAs) for the 2020-21 school year (see Appendix B for more detailed information about data levels and time periods). States are included in our analyses if schooling mode data were available at least monthly during the 2020-21 school year. For each time period in each state's schooling mode data, districts are categorized as either 1) "in-person" (all or most students had access to traditional daily in-person instruction); 2) "virtual" (all or most students received daily instruction online/off campus); and 3) "hybrid" (schooling modes that did not fall into one of these approaches). Similar to our approach in other analyses (Halloran et al., 2021), we determined the share of the school year that students had access to each schooling mode by using each time period's schooling mode classification, the length of the time period, and the school or district's K–12 enrollment. We did not include the week of Thanksgiving 2020 or the last two weeks of December 2020 for any district in this calculation, even when districts reported a schooling mode for those weeks. We acknowledge that even though a school or district may have offered a particular schooling mode during a given month, there were likely variations across grade levels and classrooms due to individual student and family choices, local case rates, district quarantine procedures, and other factors. However, we believe this measure presents the best estimate available regarding district schooling mode data.

Student Demographic Data: To capture student demographic information from the 2020-21 school year, we draw from the National Center for Education Statistics (Urban Institute, 2022). Specifically, we used district-level information on total enrollment and the share of enrolled students by race and ethnicity. Additionally, we use school-level information from the 2019-2020 school year on eligibility for free and reduced price lunch (FRPL) aggregated to the district level (this was the most recent year available).

COVID-19 Community Levels by County: We use data from the Center for Disease Control on county-level COVID-19 transmission for the period from September 2021 to June 2022, or the baseline recovery year (CDC, 2022). We use the four CDC classifications of average community transmission level during the 2021-2022 school year: low, moderate, substantial, and high.

Reading Curricula: We collect data from two sources on states' reading curricula and methods of teaching. Schwartz (2022) provides information about when states adopted laws or policies related to the science of reading; these policies encompass teacher preparation and certification, professional development, assessment, materials, and instruction or intervention. American Public Media provides information on the level of SEA involvement in determining what curricula schools can use to teach reading (Peak, 2022). We use this data to look for patterns in states' reading policies given the variation we find in ELA test score recovery.

3 Results

We begin this section by describing the patterns of test score decline and initial recovery overall. We then turn to the correlates of recovery.

3.1 Descriptive Data

We present basic summary statistics for each of the 21 states included in our sample in Table 1. We include the number of districts within each state included in the sample, the percentage of the school year districts offered each schooling mode (in-person, hybrid, and virtual) for the 2020-21 school year, and district demographic characteristics, including share of enrolled students who are Black, Hispanic, and eligible for free and reduced price lunch. Overall, our sample includes nearly 5,000 school districts. On average, districts offered full in-person instruction for 43% of the 2020-21 school year, compared to 38% hybrid instruction and 19% virtual instruction. Districts in the sample were characterized by student populations that were 18% Black and 15% Hispanic, and 45% of students were eligible for FRPL. However, states in our sample vary across predominant schooling mode, as well as across demographic characteristics.

We next present test score summary statistics by state in Table 2. We observe that all states in our sample experienced declines in ELA and math proficiency levels between 2019 and 2021, with an overall average decline in test score pass rates of 6.4 percentage points in ELA and 12.5 percentage points in math. ELA declines in 2021 ranged from 9

percentage points in Arkansas, Pennsylvania, and Virginia to 2 percentage points or less in Idaho, Kansas, and Wyoming. Math declines in 2021 ranged from 32 percentage points in Massachusetts to 4 percentage points in Idaho and Wyoming.

With regard to academic recovery (i.e., the percent of test score declines in 2021 that were recovered by by 2022), we observe evidence of recovery in both ELA and math, with greater recovery in math (see Table 2). On average, weighted by district enrollment, 20% of test score declines between Spring 2019 and 2021 were recovered in ELA in Spring 2022, compared to 37% in math. Recovery varied widely by state, particularly in ELA. Specifically, in ELA, we observe that six states *continued to decline* in 2022 (most notably Kansas and Massachusetts, among others), while two states fully recovered their pandemic losses (Mississippi and South Carolina). In math, we observe that all states had at least some recovery in the number of students reaching proficiency, but no states reached 2019 levels as of 2022. Mississippi and Rhode Island observed the greatest test score recovery (over 70% of scores recovered), while Arkansas and Minnesota experienced the least recovery (less than 20% of scores recovered).

In Figure 1, we illustrate the distribution of changes in test score proficiency rates by school district compared to the prior assessment year, between Spring 2017 and Spring 2022. Pre-pandemic, looking at changes from Spring 2017 to 2018 or from Spring 2018 to 2019, we observe these changes fairly tightly centered near zero. Thus, while test scores appear to increase in some locations and decrease in others, consistent with noise and possibly other factors, we do not observe systematic increases or decreases in scores. However, between Spring 2019 and 2021, we observe large declines in test score pass rates, as has been documented elsewhere (Halloran et al., 2021; Lewis et al., 2021). This is shown in the leftward shift of the distribution. Although some school districts in our sample showed test score increases, this share was small: 13% of districts demonstrated gains in ELA, compared to 9% in math.

3.2 Correlates of Recovery

It is clear from Figure 1 that there is variation in recovery across school districts. A key policy question is what determines that recovery rate. In Figure 2, we present a binscatter of the relationship between district-level test score percentage point changes between 2019–2021 and between 2021–2022 for both ELA and math. There is a negative relationship in both cases, indicating that districts with the largest test score declines in 2021 had the largest score increases by 2022. We again see a larger decrease in math scores during the pandemic, and a subsequent larger increase post-pandemic as compared to ELA scores.

In Figure 3, we show variation in math and ELA recovery overall (among all states in our

sample) and by state, share of in-person instruction during the 2020-21 school year, district demographics, test score declines in 2019–2021, and baseline achievement. As a measure of district baseline achievement, we calculate each districts' average proficiency rate across Spring 2017, 2018, and 2019 separately for ELA and math and then we regress these averages on the following district demographic characteristics: the share of Black students enrolled, the share Hispanic students enrolled, and the share of students enrolled who are eligible for free and reduced-price lunch (FRPL). The regression is weighted by district enrollment and we estimate separate regressions for ELA and math scores. We use the residuals from this regression as the measure of baseline achievement.

Figure 3 helps to demonstrate two findings. First, there we observe significantly more variation in recovery in ELA than in math. Second, for the most part, there is relatively little systematic variation in recovery by schooling mode in 2020-21, demographic groups, or test score groups. This is especially true in math, but even in ELA the variation is small across in-person shares, race/ethnicity shares, baseline pre-pandemic test scores, and test score declines during the pandemic. Where we do see systematic variation is across states, as observed in Table 2, especially in ELA. Here, we can see the full recovery in ELA scores in Mississippi and South Carolina, compared to continued declines in 2022 in states such as Massachusetts and Kansas. We return to this state-level variation below.

Next, we estimate a regression for the outcome district proficiency rate in 2022 to assess the correlates of recovery:

$$Y_i = \alpha + \beta_1 * prof2021_i + \beta_2 * prof2019_i + \beta_3 * achieve_i + \beta_4 * X_i + \beta_5 * covid_i + \gamma_s + \epsilon_i$$

where $prof2021$ and $prof2019$ are districts' proficiency rates in the respective years, $achieve_i$ is the district baseline achievement described above, X_i are the demographic characteristics (the share of students who are Black, Hispanic, and eligible for FRPL), $covid_i$ is the average county-level COVID-19 transmission level as defined by the CDC, and γ_s is a state fixed effect. We also estimate this regression with the addition of indicators for each of the main ARP ESSER funding categories (academic intervention, equity and at-risk learners, mental and physical health, professional development, technology, facilities and operations, and general staffing needs), with the transportation and other categories combined as the comparison group. The regressions are weighted by district enrollment, and we again estimate separate regressions for ELA and math scores.

In Table 3, we show the results of the above regressions, with ELA results in Column (1) and math results in Column (3), both without the funding variables. For both subjects,

the state fixed effects are jointly significant. This aligns with our earlier plot highlighting the variation in test score recovery by state (Figure 3). Districts' past performance also has a significant relationship with their 2022 proficiency rate: both proficiency coefficients are statistically significant at the 1% level and the coefficients are of similar magnitude in each year for both ELA and math. However, baseline achievement, which measures the amount that mean pre-COVID scores vary from the expected mean score level based on district demographics, matters little. The demographic characteristics also do not seem to have a significant relationship with 2022 proficiency rate for either subject. Likewise, the coefficient for community COVID-19 transmission is not significant in either regression. For math scores, the share of hybrid class time is significant at the 5% level, but the coefficient is very small, showing very little impact on proficiency rates.

We add results of the regression in Table 3 to include indicators for each ARP ESSER funding category in Column (2) for ELA and Column (4) for math. Again, the state fixed effects are jointly highly significant for both subjects, as are the previous years' proficiency rates. For math, none of the coefficients for the funding categories reach statistical significance, and they are all small in magnitude. Similarly for ELA, the coefficients are all negligible, and only two are statistically significant at the 5% level: funding for technology and for facilities and operations.

4 Unpacking State-Level Variation

Our analyses indicate that of the correlates that we were able to explore, the state where the district is located is the most important factor in a district's post-pandemic recovery. We can further illustrate this with a border design. We consider two sets of states in our sample – South Carolina/Georgia and Massachusetts/New Hampshire – that share borders. This provides an opportunity to look at whether the variation appears even in areas geographically close and similar.

In Figure 4, we illustrate an example of this cross-state variation in score recovery. Panel A shows district-level ELA recovery in Georgia and South Carolina. It is clear that districts in South Carolina have a larger percentage of ELA scores recovered than those in Georgia along the border. On average, border districts in Georgia actually experienced a loss of test scores in 2022 – they lost an additional 45% of their original decline in test scores. In South Carolina, on the other hand, many border districts fully recovered their ELA pandemic losses – the average percentage of the score decline recovered was 134%. Panel C similarly shows the border of Massachusetts and New Hampshire. Again, we see that New Hampshire's border districts experienced a better recovery, with an average of 10% of scores recovered.

Massachusetts border districts' average percent recovery was -189%, indicating a loss in 2022 that was even greater than the 2019–2021 decline in scores.

We repeat these maps for math scores in Panels B and D of Figure 4, but we do not see stark differences in recovery along either border. Mean percent recovery in Georgia and South Carolina for border districts was 32% and 31%, respectively. Similarly, Massachusetts' average recovery in math for border districts was 43%, and in New Hampshire's border districts, average recovery was 44%.

Given the large amount of cross-state variation, it seems worthwhile to try to understand whether there are state-level characteristics or policies that correlate with this variation. To do so, we first collected information on states' educational priorities and interventions from their ARP ESSER plans. We coded plans according to what the states identified as their top strategies that have been effective in supporting the needs of students during the pandemic, and by how states reported they would use their funding to address the impact of lost instructional time during the pandemic. State plans highlighted a wide range of priority areas, including investments in remote learning, tutoring, health and wellness, capacity-building efforts, and data use and management, among many other topics. We ranked states by the percentage of score recovery in 2022 in both ELA and math and compared plans of the top one-third to those from the bottom two-thirds. No clear patterns of recovery interventions or supports emerged between the high recovery or low recovery states. A limitation here is that some state plans focused on a few key priority areas, while other state plans focused more on breadth. In this way, we could not always identify which areas were the greatest priority for a given state.

To further explore the variation in state-level ELA recovery, we collected information on how long states have had legislation related to the science of reading (SOR) (Schwartz, 2022). The science of reading refers to research findings that reading comprehension is a product of students' ability to sound out the letters of a word (decoding) and knowledge of what the words mean (language comprehension (Hanford, 2019). Schwartz (2022) categorized state reading policies according to how many of the following six areas were addressed: teacher preparation, teacher certification or license renewal, professional development/coaching, assessment, materials, and instruction/intervention. Four states in our sample adopted reading policies relating to at least one of these categories prior to 2019 (Arkansas, Mississippi, Missouri, South Carolina), while nine states did so between 2019–2022 (Arkansas, Colorado, Connecticut, Kansas, Louisiana, Minnesota, Pennsylvania, Rhode Island, Virginia, West Virginia). The remaining eight states in our sample had not yet adopted such legislation as of 2022.[1]

1. Kansas was not included in documentation by Schwartz (2022) but passed the Every Child Can Read

Most notably, we find that the two states in our sample with the earliest adoption of SOR legislation (Mississippi in 2013 and South Carolina in 2014) are the only two states to fully recover their pandemic learning losses by 2022. Legislation from both states addressed, at a minimum, teacher preparation, professional development, and instruction. While we cannot identify science of reading legislation as the only lever here, or even the extent to which legislation has impacted scores, the correlation may indicate that such legislation could be an important component in academic recovery.

That said, we do not observe additional patterns in ELA recovery by whether or not states have enacted SOR-related legislation. For example, Arkansas is a state with relatively early legislation (2017; updated in 2021), and experienced a 9 percentage point decline in 2021 with a 41% recovery. Meanwhile, Ohio has no legislation and had a similar 8 percentage point decline and 44% recovery.

It is possible that a simple measure of adoption is not enough to uncover the effect of reading curricula on test score recovery. Many of these policies have only been enacted in the past few years, meaning that the full effects of the legislation may not yet have had sufficient time to fully or even partially reach districts and students. Some policies may be significantly less comprehensive than others, or may only affect teacher licensure programs, for example, meaning that the impacts on student learning would not apparent until these teachers enter the classroom. In addition, a lack of legislation does not mean that states or individual districts do not have programs related to the science of reading, only that they are not necessarily enacted in legislation. Nonetheless, this can provide an initial look at state approaches to addressing student progress related to English language arts.

We also consider a measure of state involvement in district reading curricula (Peak, 2022). There are four categories: minimal state involvement, some state guidance, state advisory list, and state mandated list of reading curricula. We again find no systematic patterns between level of state involvement and ELA recovery, though there are some hints toward trends. For example, as noted, Arkansas recovered 41% of their pandemic score loss in ELA (with a 9 pp decline) and has the highest level of state involvement in reading curricula. However, Wisconsin recovered a similar 45% of their loss (with a 7 pp decline), with minimal state involvement in curricula. Both high and low levels of ELA recovery were experienced by states of minimal levels of involvement *and* states with mandated lists of curricula. However, we note, again, that many of SOR-related policies and approaches to ELA curricula are relatively new and may not be fully implemented by districts at this time. We might expect to see more clear findings in the future.

Act in May 2022, which will go into effect for the 2023-24 school year; we include Kansas here as having adopted SOR legislation

5 Conclusion

Post-pandemic learning recovery remains an important concern for education leaders. This paper documents both the decline in test scores between Spring 2019 and 2021 as well as the subsequent recovery in 2022. We find that scores have recovered more in math than in ELA, but in both cases, many districts have not fully regained their pre-pandemic scores. We also show substantially more variation in ELA score recovery as compared to math.

In assessing the correlates of recovery, a district's state appears to be the most significant factor. District demographic characteristics, schooling mode from 2020-21, and community COVID-19 transmission levels from 2021-22 do no not seem to impact recovery, nor do districts show meaningful variation in recovery across these categories.

While we highlight the importance of states in students' ELA academic recovery, we are not able to pinpoint which specific factors may be responsible for some states experiencing stronger recoveries. Investigating state funding decisions has not yet revealed clear patterns in effectiveness, though we did observe that the two states with the longest legislation in place related to the science of reading have also experienced there strongest recovery in ELA scores. Moreover, state and districts are still in the process of using ARP ESSER funding, and many states are in the midst of responding to state-level legislation related to evidence-based reading curricula, meaning that impacts on student achievement may not yet be evident. Thus, this paper serves as a starting point for future research into potential determinants of test score recovery, particularly at the state level. Knowing which interventions and policies are most effective in combating learning loss would provide critical information for policymakers and education leaders as they seek to ensure that students across the country recover after a significant educational disruption.

6 Exhibits

Table 1: **Summary Statistics by State**

	Districts	% In-Person	% Hybrid	% Virtual	% Black	% Hispanic	% FRPL
AR	247	87.0	12.4	0.6	19.5	13.7	64.7
CO	140	27.3	42.7	29.9	4.6	34.3	42.3
CT	171	50.1	39.4	10.5	12.7	27.7	42.1
GA	202	48.3	19.1	32.7	36.5	17.2	62.1
ID	139	62.8	32.8	4.4	1.1	19.1	40.2
KS	274	64.7	23.2	12.2	6.8	20.7	47.7
LA	69	72.0	19.1	8.9	39.3	8.7	53.9
MA	352	27.5	52.3	20.2	9.5	22.5	0.0
MN	439	14.6	65.5	19.9	11.4	10.1	36.8
MO	510	52.6	34.1	13.4	15.3	7.3	51.5
MS	127	67.8	18.7	13.5	47.3	4.4	78.3
NH	169	44.6	42.7	12.7	2.2	6.6	29.1
OH	606	50.0	32.3	17.7	14.6	6.5	26.4
PA	596	17.4	54.8	27.7	14.4	12.9	52.4
RI	49	48.2	43.0	8.8	8.4	26.5	46.5
SC	75	44.5	50.4	5.2	32.1	11.7	63.5
SD	144	98.8	1.1	0.1	3.5	7.3	34.7
VA	131	14.4	61.7	23.9	22.1	17.5	45.5
WI	413	54.8	23.7	21.5	9.0	12.9	41.6
WV	55	37.1	41.6	21.3	4.1	2.0	53.3
WY	48	92.7	6.4	0.9	0.9	14.4	36.7
Overall	4956	42.5	38.2	19.3	18.3	14.7	45.4

Notes: This table shows summary statistics for the 21 states included in the sample. "Districts" presents the number of districts included in the sample. Schooling mode variables ("% In-Person", "% Hybrid", "% Virtual") are drawn from the COVID-19 School Data Hub and represent the average percent of the school year that the state's school districts offered each schooling mode. Demographic variables are from the NCES data and include: the share of enrolled students who are Black, the share of enrolled students who are Hispanic, and the share of students who are eligible for free and reduced-price lunch (FRPL). Massachusetts does not report FRPL, so it is not included here.

Table 2: **Test Score Summary Statistics by State**

	ELA				Math			
	2019 % Pass	2021 % Pass	2022 % Pass	2022 % Recovery	2019 % Pass	2021 % Pass	2022 % Pass	2022 % Recovery
AR	45.6	36.7	40.3	40.8	52.7	40.2	42.4	17.8
CO	46.1	43.0	43.7	24.1	35.0	27.4	32.1	62.0
CT	55.8	47.4	49.0	18.8	48.2	36.2	40.0	31.9
GA	43.8	38.0	38.3	4.5	43.9	34.2	37.5	34.3
ID	55.5	53.5	54.3	37.8	45.3	41.5	44.1	69.3
KS	38.1	36.6	33.4	-208.9	34.2	29.2	31.1	36.3
LA	45.0	40.6	42.0	31.3	35.0	27.9	30.7	39.7
MA	52.0	45.7	41.0	-76.8	48.6	33.1	38.7	36.6
MN	59.1	51.0	50.3	-8.6	56.6	43.5	45.7	16.8
MO	47.1	43.5	41.4	-61.0	41.1	34.9	38.4	57.0
MS	42.1	35.5	42.4	104.7	47.9	36.1	44.9	74.4
NH	55.1	48.3	48.7	5.8	48.8	35.5	40.6	38.2
OH	66.3	58.0	61.6	43.7	66.1	51.4	55.2	26.1
PA	62.0	53.4	55.0	18.9	43.2	31.0	34.7	30.0
RI	38.8	32.8	31.1	-28.3	32.2	21.4	29.0	70.5
SC	45.8	42.2	46.9	130.7	45.6	36.8	39.3	28.6
SD	53.7	49.7	50.1	11.7	47.4	42.0	44.1	38.3
VA	76.0	67.0	70.7	41.1	79.2	47.2	60.4	41.2
WI	41.1	33.7	37.0	44.5	43.7	33.6	39.3	56.0
WV	45.4	38.6	40.6	29.1	41.1	28.9	34.5	46.2
WY	56.7	54.5	53.9	-28.8	54.1	49.9	50.9	23.8
Overall	53.3	46.9	48.2	19.8	49.5	37.0	41.6	37.2

Notes: This table shows summary statistics of ELA and math proficiency rates between 2019 and 2022 for the 21 states included in the sample. "% Pass" represents the percent of students reaching proficiency on the state assessment in the given year. "% Recovery" represents the percent recovery defined as the percentage of the decline in test scores between Spring 2019 and Spring 2021 that was recovered by 2022. Columns 2-5 show ELA scores and recovery, and columns 6-9 show math scores and recovery.

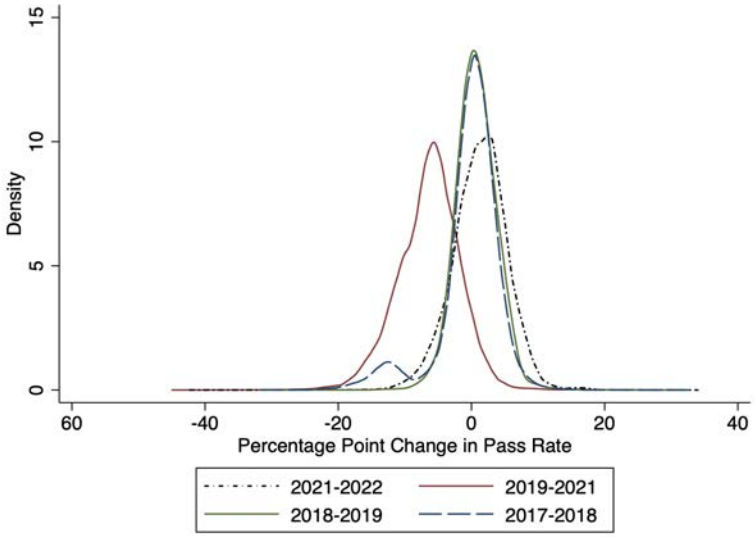
Table 3: **Determinants of 2022 Proficiency Rates**

	ELA		Math	
	(1)	(2)	(3)	(4)
Proficiency rate 2021	0.684	0.674	0.661	0.648
	(0.020)	(0.027)	(0.018)	(0.024)
Proficiency rate 2019	0.289	0.311	0.370	0.452
	(0.033)	(0.051)	(0.035)	(0.054)
Baseline achievement	0.008	-0.001	-0.037	-0.104
	(0.036)	(0.057)	(0.034)	(0.056)
% in-person, 2020-2021	-0.003	0.002	-0.005	-0.000
	(0.005)	(0.005)	(0.006)	(0.006)
% hybrid, 2020-2021	0.003	0.006	0.014	0.019
	(0.005)	(0.005)	(0.005)	(0.006)
% Black	0.004	0.007	-0.010	0.008
	(0.008)	(0.011)	(0.009)	(0.014)
% Hispanic	0.006	0.010	-0.007	0.012
	(0.008)	(0.013)	(0.009)	(0.014)
% FRPL	-0.011	-0.006	0.007	0.034
	(0.011)	(0.018)	(0.011)	(0.017)
COVID levels, 2021-2022	0.006	0.005	0.004	0.002
	(0.005)	(0.005)	(0.005)	(0.007)
Fund academic intervention		0.001		-0.001
		(0.003)		(0.003)
Fund equity and at-risk learners		0.001		-0.000
		(0.002)		(0.002)
Fund mental and physical health		0.003		0.003
		(0.002)		(0.002)
Fund professional development		-0.001		0.000
		(0.002)		(0.002)
Fund technology		-0.004		0.000
		(0.002)		(0.002)
Fund facilities		0.004		-0.002
		(0.002)		(0.003)
Fund staffing		0.005		-0.001
		(0.003)		(0.003)
Observations	4913	1794	4910	1787
State FE joint F-test	0.000	0.000	0.000	0.000

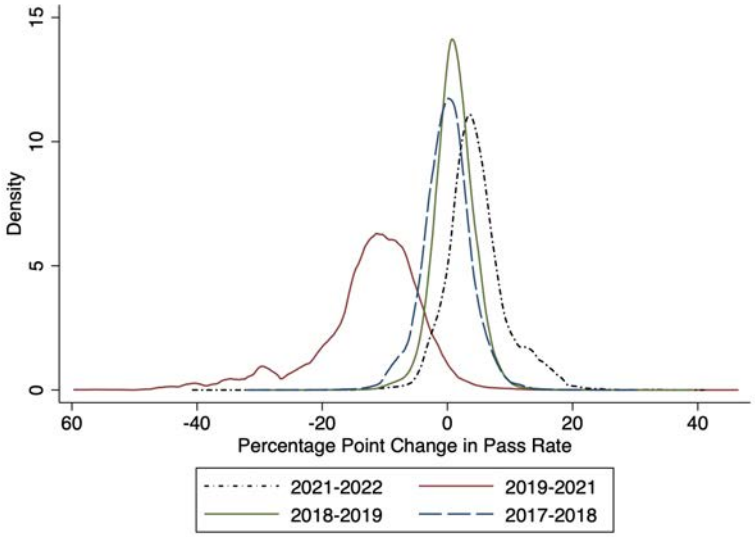
Notes: This table shows the relationship between state test score proficiency rates in 2021 and 2019 on state test score proficiency rates in 2022 at the district level separately for ELA and math. We control for district baseline achievement (the residual from regressing the average pre-COVID pass rate from 2017-2019 on district demographics), the share of time spent in-person and in hybrid learning during the 2020-2021 school year, district race/ethnicity shares, district share of students eligible for free and reduced-price lunch (FRPL), and community COVID-19 transmission levels in 2021-2022. FRPL counts are not available in MA so we code districts missing FRPL as 0 and include a missing FRPL binary variable. Regressions in columns (2) and (4) only include districts in the Burbio ARP ESSER dataset (2022) and we include binary variables for the seven main categories of funding. All regressions include state fixed effects, which are jointly highly significant for all regressions.

Figure 1: Distribution of Changes in ELA and Math Test Score Pass Rates Compared to Prior Year, 2017-2022

(a) Distribution of Changes in ELA Test Score Pass Rates by Year



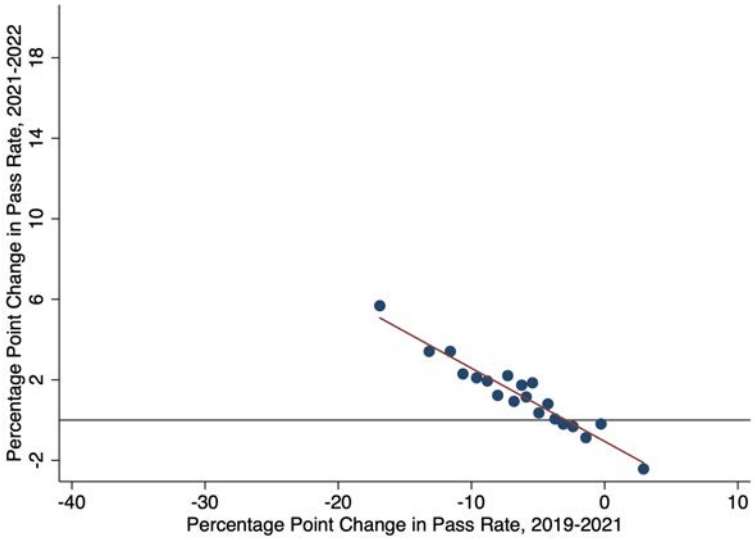
(b) Distribution of Changes in Math Test Score Pass Rates by Year



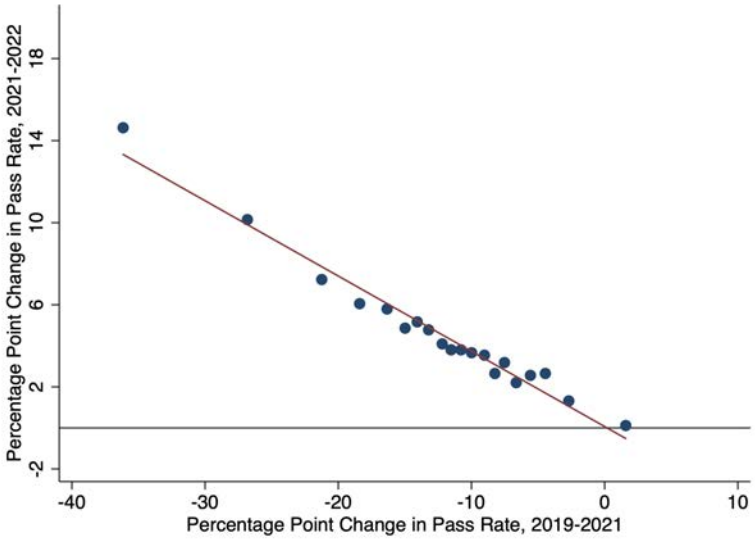
Notes: This figure shows the distribution of test score changes in pass rates across districts compared to the prior year for Spring of 2018, 2019, 2021, and 2022 in percentage point changes. Pass rates represent the percent of students reaching proficiency on state assessment in a given school year. Spring 2021 is compared to Spring 2019, as assessments were not administered in Spring 2020 due to the pandemic. Panel (a) (top) shows the distributions for ELA pass rate changes and Panel (b) (bottom) shows the distributions for math pass rate changes.

Figure 2: Changes in ELA and Math Pass Rates from Spring 2021 to 2022, Relative to Changes from Spring 2019 to 2021

(a) ELA Test Score Changes

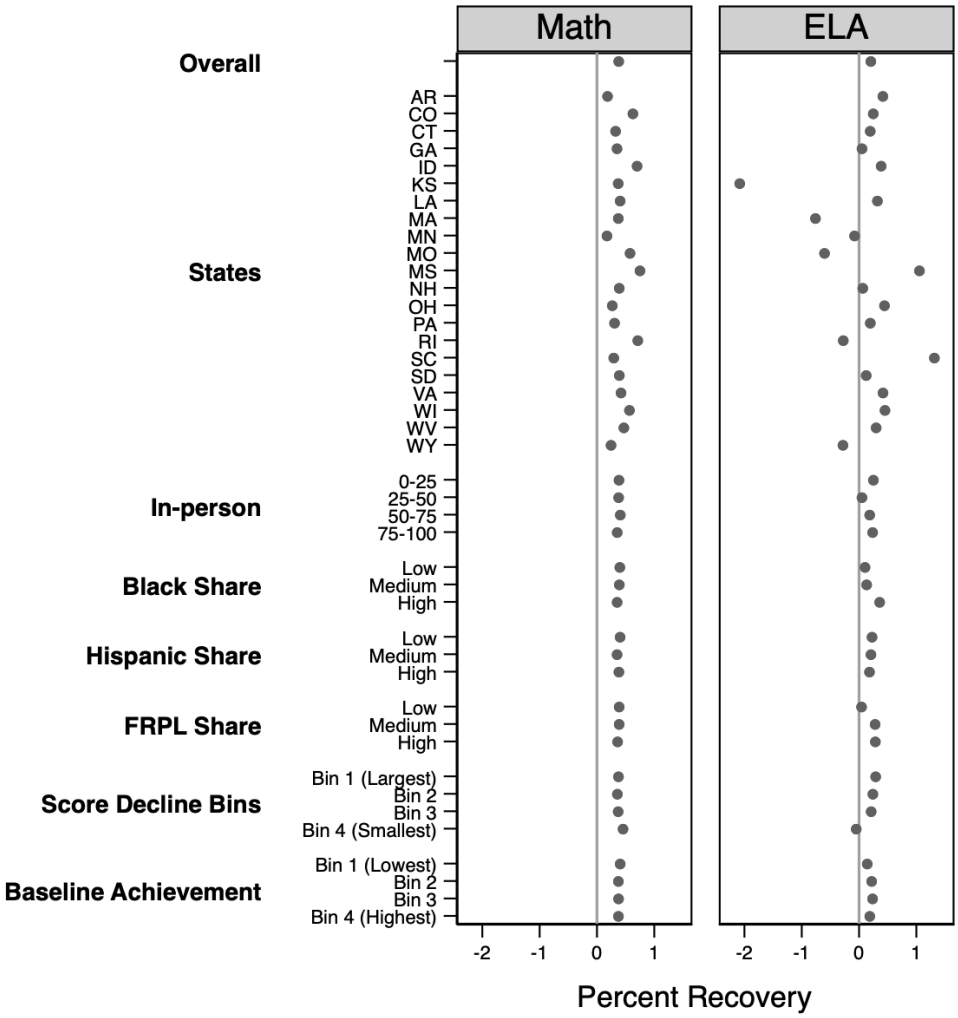


(b) Math Test Score Changes



Notes: This figure shows binscatters of changes in test score pass rates from Spring 2021 to Spring 2022, relative to test score pass rate declines in between Spring 2019 and 2021. Panel (a) (top) shows the binscatter for ELA score changes and Panel (b) (bottom) shows the binscatter for math score changes. Pass rates represent the percent of students reaching proficiency on state assessment in a given school year. Changes are shown in percentage points. Each bin represents districts within the relevant 20 quantiles of change between 2019 and 2021 (n=4913).

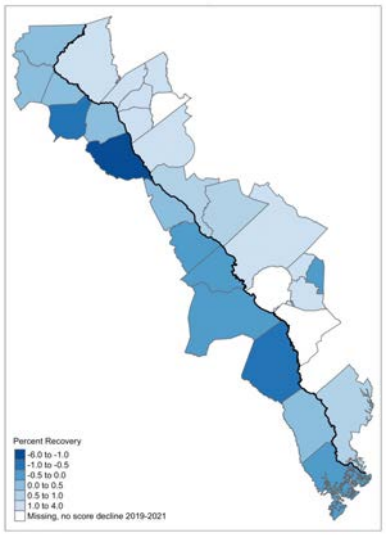
Figure 3: District Characteristics and Percent Recovery in ELA and Math



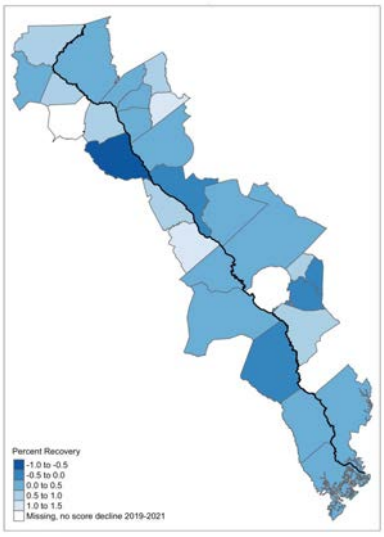
Notes: This figure shows the average percent recovery in math (left panel) and ELA (right panel) for students in Grades 3–8 on state standardized assessments, weighted by enrollment. Percent recovery is defined by the percentage of the test score decline in proficiency rates from 2019 to 2021 recovered by 2022. Comparisons are presented: a) for all students in the sample (overall); b) by state; c) by the percent of in-person instruction offered by districts over the 2020-21 school year; d) by the share of students who are Black or Hispanic (based on NCES 2020-21 data); e) by the share of students who are eligible for free and reduced price lunch (FRPL) (based on NCES 2019-20 data due to changes in reporting requirements in 2020-21; MA does not report FRPL and is excluded here); f) by the test score decline quartiles between Spring 2019 and 2021; and g) district baseline achievement as defined as the residuals from a regression of districts' pre-pandemic test scores on district demographics characteristics. Ranges for % In-person groups include the lower bound of each range.

Figure 4: State Border Maps of Variation in Percent Recovery in ELA and Math

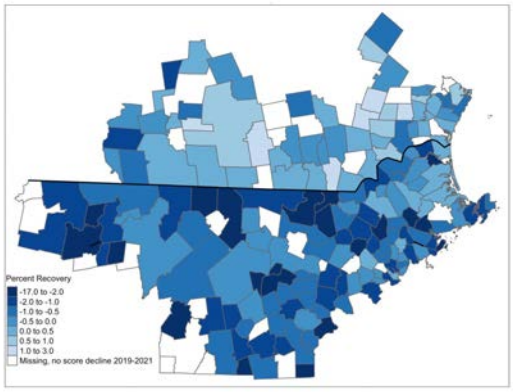
(a) ELA Recovery in GA and SC



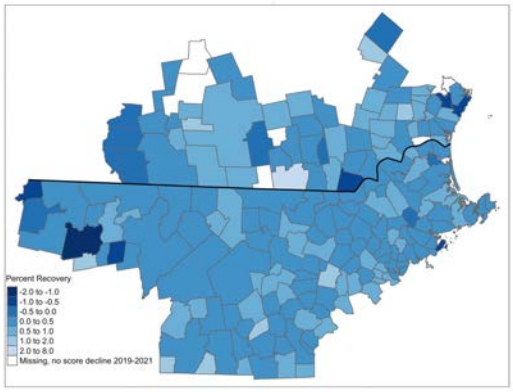
(b) Math Recovery in GA and SC



(c) ELA Recovery in MA and NH



(d) Math Recovery in MA and NH



Notes: This figure shows percent recovery in ELA and math pass rates for districts along the border of selected states. For the states of Georgia and South Carolina, we present the percent recovery in ELA in Panel (a) (top left) and in math in Panel (b) (top right). For the states of Massachusetts and New Hampshire, we present the percent recovery in ELA in Panel (c) (bottom left) and in math in Panel (d) (bottom right).

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Appendix A: State Assessment Data

AR (ARKANSAS)

Assessment Name:	ACT Aspire
Source:	Arkansas Division of Elementary & Secondary Education (2022)
Years Included in Analysis:	2018–2022 (2020 not administered)
Proficiency Levels:	• Proficient: Ready / Exceeding • Not proficient: In Need of Support / Close
2021 Participation Rate:	97%
Additional Information:	In 2021, tests were administered in person. The 2022 data used for this report reflect preliminary scores released in August 2022.

CO (COLORADO)

Assessment Name:	Colorado Measures of Academic Success (CMAS)
Source:	Colorado Department of Education (CDE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	71.6%
Proficiency Levels:	• Proficient: Met / Exceeded Expectations • Not proficient: Did Not Yet Meet / Partially Met Expectations
Additional Information:	In 2021, instead of all students testing in all subjects as in prior years, Grades 3, 5, and 7 were tested in ELA, and Grades 4, 6, and 8 were tested in math (parents could choose to have their children take both tests). In 2021, tests were administered in person. Data in this report reflect all grades tested in other school years.

CT (CONNECTICUT)

Assessment Name:	Smarter Balanced Assessment Consortium (SBAC)
Source:	Connecticut State Department of Education (CSDE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	88.3%
Proficiency Levels:	• Proficient: Meets / Exceeds the Achievement Standard (Standards 3 & 4) • Not proficient: Does Not Meet / Approaching the Achievement Standard (Standards 1 & 2)
Additional Information:	In 2021, in-person testing and remote testing options were available for students to take the state assessments and approximately 12% of students completed the assessment remotely (of these students, over 90% also used a fully or mostly remote schooling mode during the school year (CSDE, 2021). Data in this report reflect outcomes for both in-person and virtual test-taking approaches.

GA (GEORGIA)

Assessment Name:	Georgia Milestones End-of-Grade (EOG) Assessments
Source:	Governor's Office of Student Achievement (GOSA, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	71.4%
Proficiency Levels:	• Proficient: Proficient/Distinguished Learners • Not proficient: Beginning/Developing Learners
Additional Information:	In 2021, tests were administered in person.

ID (IDAHO)

Assessment Name:	Idaho Standards Achievement Test (ISAT)
Source:	Idaho State Department of Education (2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	98%
Proficiency Levels:	• Proficient: Proficient / Advanced • Not proficient: Below Basic / Basic
Additional Information:	In 2021, tests were administered in person.

KS (KANSAS)

Assessment Name:	Kansas Assessment Program (KAP) General Education Assessments
Source:	Kansas State Department of Education (2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	93.3%
Proficiency Levels:	• Proficient: Effective Ability / Excellent Ability • Not proficient: Limited Ability / Basic Ability
Additional Information:	In 2021, tests were administered in person.

LA (LOUISIANA)

Assessment Name:	LEAP 2025 (Louisiana Educational Assessment Program)
Source:	Louisiana Department of Education (2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	98.5%
Proficiency Levels:	• Proficient: Mastery / Advanced • Not proficient: Unsatisfactory / Approaching Basic / Basic
Additional Information:	In 2021, tests were administered in person.

MA (MASSACHUSETTS)

Assessment Name:	Massachusetts Comprehensive Assessment System (MCAS)
Source:	Massachusetts Department of Elementary and Secondary Education (MA DESE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	95%
Proficiency Levels:	• Proficient: Meeting / Exceeding Expectations • Not proficient: Not Meeting / Partially Meeting Expectations
Additional Information:	In 2021, students took one session of each subject area test instead of two (DESE, 2021a). Additionally, in-person testing and remote testing options were available for students to take the state assessments in 2021, and approximately 20% of students completed the assessment remotely (DESE, 2021).

MN (MINNESOTA)

Assessment Name:	Minnesota Comprehensive Assessments (MCA)
Source:	Minnesota Department of Education (MDE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	78.2% (MDE, 2021)
Proficiency Levels:	• Proficient: Meets / Exceeds Standards • Not proficient: Does Not Meet / Partially Meets Standards
Additional Information:	In 2021, tests were administered in person.

MS (MISSISSIPPI)

Assessment Name:	Mississippi Academic Assessment Program (MAAP)
Source:	Mississippi Department of Education (2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	96.9%
Proficiency Levels:	• Proficient: Proficient /Advanced (Levels 4-5) • Not proficient: Minimal / Basic / Passing (Levels 1-3)
Additional Information:	In 2021, tests were administered in person.

MO (MISSOURI)

Assessment Name:	Missouri Assessment Program (MAP)
Source:	Missouri Department of Elementary & Secondary Education (2023)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	91%
Proficiency Levels:	• Proficient: Proficient / Advanced • Not proficient: Below Basic / Basic
Additional Information:	In 2021, tests were administered in person.

NH (NEW HAMPSHIRE)

Assessment Name:	NH Statewide Assessment System (NH SAS)
Source:	New Hampshire Department of Education (2023)
Years Included in Analysis:	2018–2022 (2020 not administered)
2021 Participation Rate:	80% in ELA; 81% in math
Proficiency Levels:	• Proficient: Levels 3-4 • Not proficient: Levels 1-2
Additional Information:	In 2021, tests were administered in person.

OH (OHIO)

Assessment Name:	Ohio Achievement Assessment (OAA)
Source:	Ohio Department of Education (ODE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	94%
Proficiency Levels:	• Proficient: Proficient / Accelerated / Advanced / Advanced Plus • Not proficient: Limited / Basic
Additional Information:	In 2021, tests were administered in person.

PA (PENNSYLVANIA)

Assessment Name:	Pennsylvania System of School Assessment (PSSA)
Source:	Pennsylvania Department of Education (PDE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	71%
Proficiency Levels:	• Proficient: Proficient / Advanced • Not proficient: Below Basic / Basic
Additional Information:	In 2021, tests were administered in person.

RI (RHODE ISLAND)

Assessment Name:	Rhode Island Comprehensive Assessment System (RICAS)
Source:	Rhode Island Department of Education (RIDE, 2022)
Years Included in Analysis:	2018–2022 (2020 not administered). The state first administered the RICAS assessment in 2018.
2021 Participation Rate:	88.9%
Proficiency Levels:	• Proficient: Meeting / Exceeding Expectations • Not proficient: Not Meeting / Partially Meeting Expectations
Additional Information:	In 2021, tests were administered in person.

SC (SOUTH CAROLINA)

Assessment Name:	South Carolina College-and Career-Ready Assessments (SC READY)
Source:	South Carolina Department of Education (2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	87.9%
Proficiency Levels:	• Proficient: Meets / Exceeds Expectations

	• Not proficient: Does Not Meet / Approaches Expectations
Additional Information:	In 2021, tests were administered in person only.

SD (SOUTH DAKOTA)

Assessment Name:	Smarter Balanced Assessment Consortium (SBAC)
Source:	South Dakota Department of Education (2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	95%
Proficiency Levels:	• Proficient: Levels 3 / 4 • Not proficient: Levels 1 / 2
Additional Information:	In 2021, tests were administered in person only.

VA (VIRGINIA)

Assessment Name:	Standards of Learning (SOL)
Source:	Virginia Department of Education (VDOE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	78.7% (VDOE, 2021)
Proficiency Levels:	• Proficient: Measured by VA's "Pass Rate"
Additional Information:	In 2019, the state updated its math cut scores to reflect the 2016 mathematics content standards. In 2021, the state updated its reading cut scores to reflect the 2017 English content standards. In 2021, tests were administered in person.

WI (WISCONSIN)

Assessment Name:	Forward Exam
Source:	Wisconsin Department of Public Instruction (WI DPI, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	87.0%
Proficiency Levels:	• Proficient: Proficient / Advanced • Not proficient: Below Basic / Basic
Additional Information:	In 2021, tests were administered in person.

WV (WEST VIRGINIA)

Assessment Name:	West Virginia General Summative Assessment (WVGSA)
Source:	West Virginia Department of Public Instruction (WVDE, 2022)
Years Included in Analysis:	2017–2022 (2020 not administered)
2021 Participation Rate:	83.9%
Proficiency Levels:	• Proficient: Meets / Exceeds Standard • Not proficient: Does Not Meet / Partially Meets Standard
Additional Information:	In 2021, tests were administered in person.

WY (WYOMING)

Assessment Name:	Wyoming Test of Proficiency and Progress (WY-TOPP)
Source:	Wyoming Department of Education (WDE, 2022)
Years Included in Analysis:	2018–2022 (2020 not administered). The state first administered the WY-TOPP in 2018 to replace the state's former PAWS assessment
2021 Participation Rate:	97.0%
Proficiency Levels:	• Proficient: Proficient / Advanced • Not proficient: Below Basic / Basic
Additional Information:	In 2021, tests were administered in person.

Note. Participation rates reflect the districts included in the states in our sample, but align with state-reported participation rates as well.

Appendix B: Schooling Mode Data

Table B1. COVID-19 School Data Hub Schooling Mode Data for States Included in Analyses

#	State	Original Data Source	Data Level	Time Period Interval
1	AR	Arkansas Department of Education (ADE)	School	Monthly, 10/1/20- 5/31/21
2	CO	Colorado Department of Education (CDE)*	District	Monthly, 8/1/20- 6/31/21
3	CT	Connecticut State Department of Education (CSDE)	District	Weekly, 8/30/20- 6/5/21
4	GA	Georgia Policy Labs (GPL)*	School	Monthly, 8/1/20- 6/31/21
5	ID	Idaho State Department of Education (SDE)*	District	Weekly, 8/9/20- 6/19/21
6	KS	Kansas Department of Education (KSDE)	District	Weekly, 8/16/20 - 5/29/21
7	LA	Louisiana Department of Children and Family Services (DCFS)*	School	Monthly, 8/1/20- 6/31/21
8	MA	Massachusetts Department of Elementary and Secondary Education (MA DESE)	District	Bi-weekly, 10/1/20 - 5/26/21
9	MN	Minnesota Department of Education (MDE)	District	Weekly, 9/1/20 - 5/31/21
10	MS	Mississippi Department of Human Services (MDHS)*	School	Monthly, 8/1/20- 5/31/21
11	MO	Missouri Department of Elementary and Secondary Education (MO DESE)	District	Monthly, 9/1/20 - 5/31/21
12	NH	New Hampshire Department of Health and Human Services (NH DHHS)*	School	Monthly, 9/1/20 – 6/30/21
13	OH	Ohio Department of Education (ODE)	District	Weekly, 8/2/20- 5/22/21
14	PA	Pennsylvania Department of Human Services (DHS)*	District	Monthly, 9/1/20 - 5/31/21
15	RI	RI Department of Elementary & Secondary Education (RIDE)	School	Weekly, 9/13/20- 6/19/21
16	SC	South Carolina Department of Education (SCDE)	District	Monthly, 9/1/20 - 5/31/21
17	SD	South Dakota Department of Education (SDDOE)*	District	Monthly, 9/1/20 - 5/31/21
18	VA	Virginia Department of Education (VDOE)	District	Monthly/Weekly, 9/8/20-5/9/21
19	WI	Wisconsin Department of Public Instruction (DPI)*	School	Monthly, 8/1/20- 6/30/21
20	WV	West Virginia Department of Education (WVDE)	District	Weekly, 9/6/20-6/12/21
21	WY	Wyoming Department of Education (WDE)	District	Weekly, 8/16/20-6/12/21

Note. All data files were sourced from the COVID-19 School Data Hub, a central database for state schooling model data. Schooling mode information provided by state agencies designated with an (*) was collected as part of the state's plan to determine and disburse benefits as part of the Pandemic Electronic Benefit Transfer (P-EBT) program through the U.S. Department of Agriculture. This program was designed to offer temporary emergency nutrition benefits to eligible students who were not able to receive meals at school (that they would have otherwise received from the National School Lunch Program) due to school closures or schools operating with reduced hours.