EDUCATION RECOVERY SCORECARD

Local Achievement Impacts of the Pandemic

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The Education Recovery Scorecard has estimated achievement losses between Spring 2019 and Spring 2022 for individual public school districts in 29 states. (Additional states will be added as they report their scores in the coming weeks.)
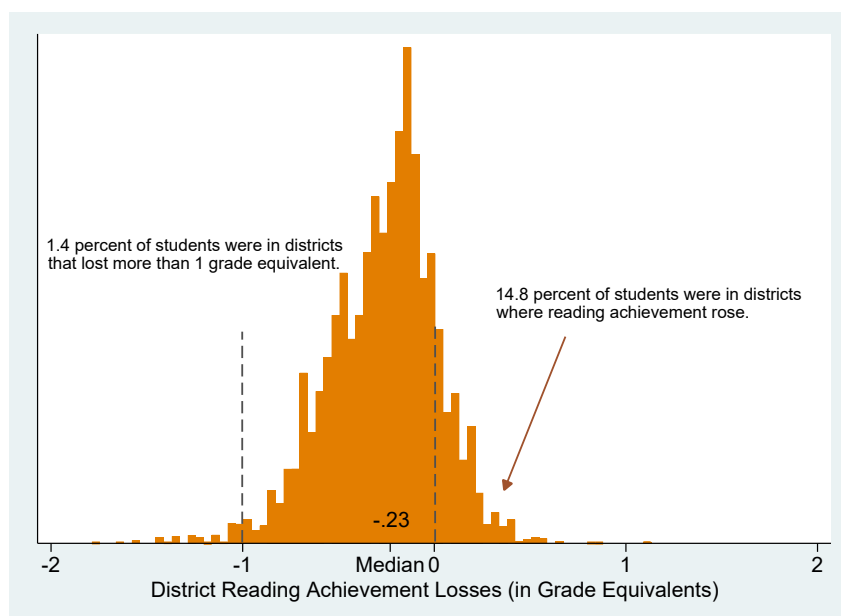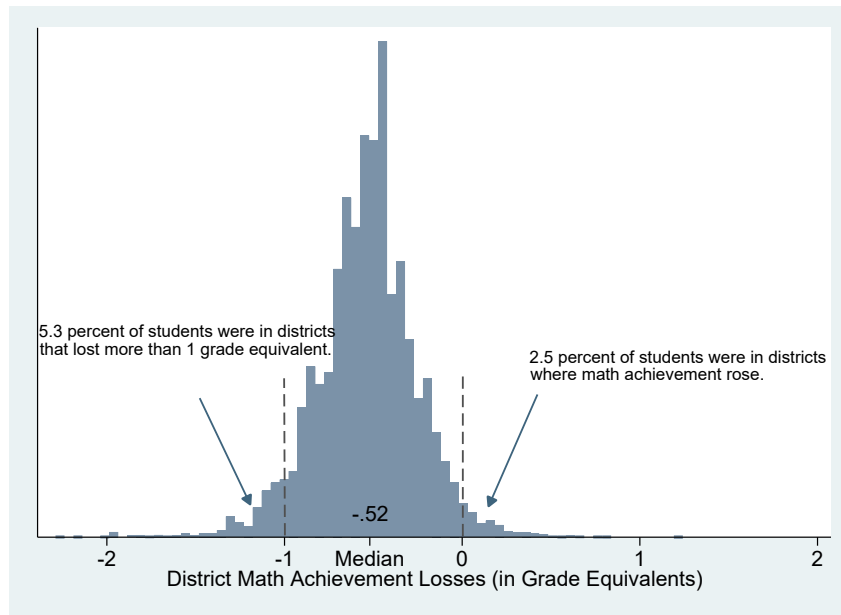
As described here, the estimates are based on state assessment results. However, because each state defines proficiency differently, we used results from the recently released National Assessment of Educational Progress to put the state assessment results on a comparable scale.

We report achievement losses in units of "grade equivalents," based on the typical annual growth in achievement between 4th and 8th grade for pre-pandemic cohorts of students. A one grade equivalent loss in achievement is roughly equivalent to the amount of learning that would typically occur during a single school year.

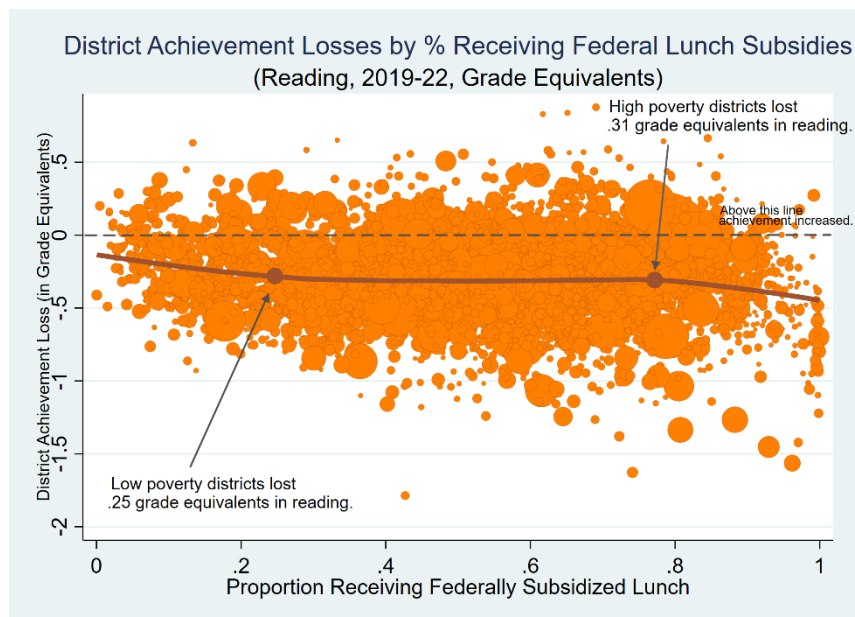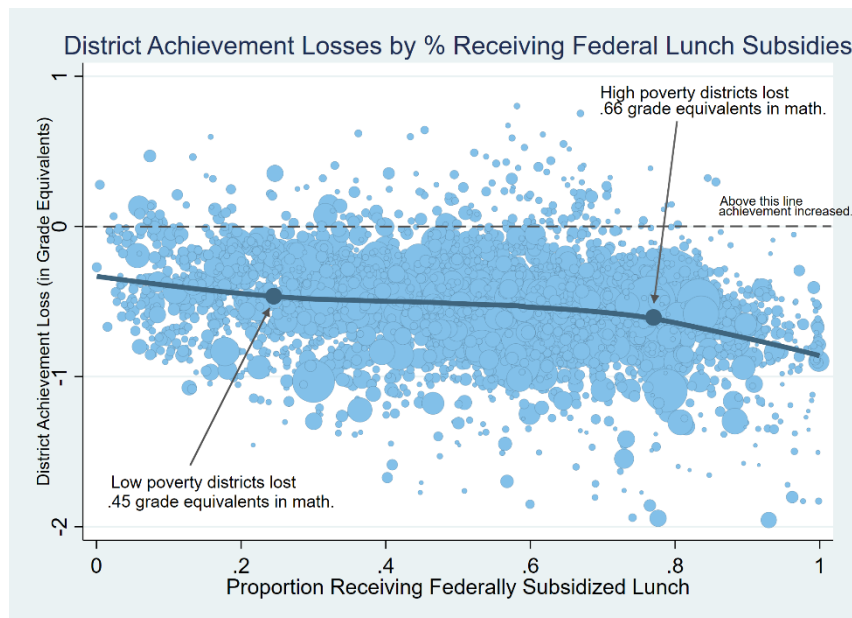Below is a summary of our findings across the current group of states.

Achievement losses varied dramatically among districts in the same state: The median school district lost the equivalent of .52 grade equivalents in math and .23 grade equivalents in reading (approximately 52 percent and 23 percent of a year's worth of achievement growth respectively). However, 2.5 percent of students were in districts where math achievement rose. At the other end of the continuum, 5.3 percent of students were in districts where achievement fell by *more than* one grade level. In reading, 14.8 percent of students were in districts where achievement rose and 1.4 percent were in districts that lost more than one grade level.


5.3 percent of students were in districts that lost more than 1 grade equivalent.

2.5 percent of students were in districts where math achievement rose.

-.52

-2   -1   Median   0   1   2

District Math Achievement Losses (in Grade Equivalents)

1.4 percent of students were in districts that lost more than 1 grade equivalent.

14.8 percent of students were in districts where reading achievement rose.

-.23

-2   -1   Median 0   1   2

District Reading Achievement Losses (in Grade Equivalents)

The losses were larger in higher poverty districts. In math, the quarter of districts with the highest share of students receiving federal lunch subsidies (with more than 69 percent of students receiving lunch subsidies) lost the equivalent of .66 grade levels, while low poverty districts (those with fewer than 39 percent of students receiving federal subsidies) lost .45 grade levels. The same was true in reading, although the differences were smaller: .31 grade levels in high poverty schools versus .25 grade levels in low poverty schools. However, there was considerable variation in the magnitude of losses among districts with similar poverty rates.

District Achievement Losses by % Receiving Federal Lunch Subsidies

District Achievement Losses by % Receiving Federal Lunch Subsidies
(Reading, 2019-22, Grade Equivalents)

In math, losses were larger in urban districts than in rural, suburban or town districts. In math, urban districts lost .65 grade equivalents on average versus .50 grade equivalents in rural districts (and .54 grade equivalents in suburban districts.) In reading, urban districts lost .29 grade equivalents, compared to .33, .24, .31 grade equivalents in rural, suburban and town districts respectively.
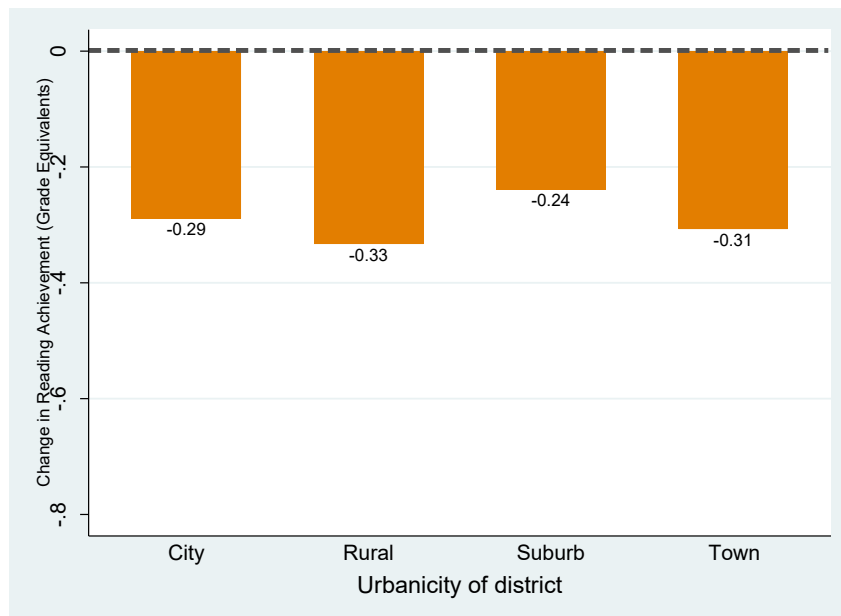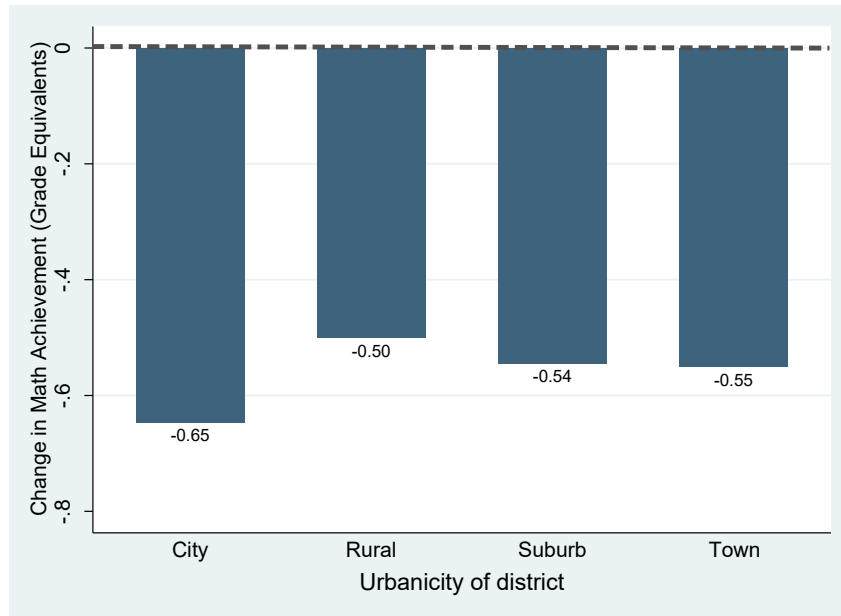
Within states, achievement losses were larger in districts that spent more time in remote instruction during 2020-21. In the first figure for each subject below, we report the change in a state's mean achievement on the 4th and 8th grade NAEP against the percent of the 2020-21 school year that the average district in the state was operating remotely. We report for all states, even if we do not have data in our district-level data set. In math, the fitted regression line implies a negative relationship. However, it is far from a perfect fit. California, the state with the highest average closure rates, for instance, had smaller losses in math than most other states. In reading, there was little relationship between a state's losses and the loss in mean achievement.

The grey shaded markers identify the states for whom we are missing district-level data. As it happens, we are missing district-level data from several states with large declines in achievement and with high rates of school closure (such as Maryland, New Jersey and New Mexico). Thus, if we were to report the relationship only for those states for whom we have data, we would be understating any negative relationship between school closures and achievement.
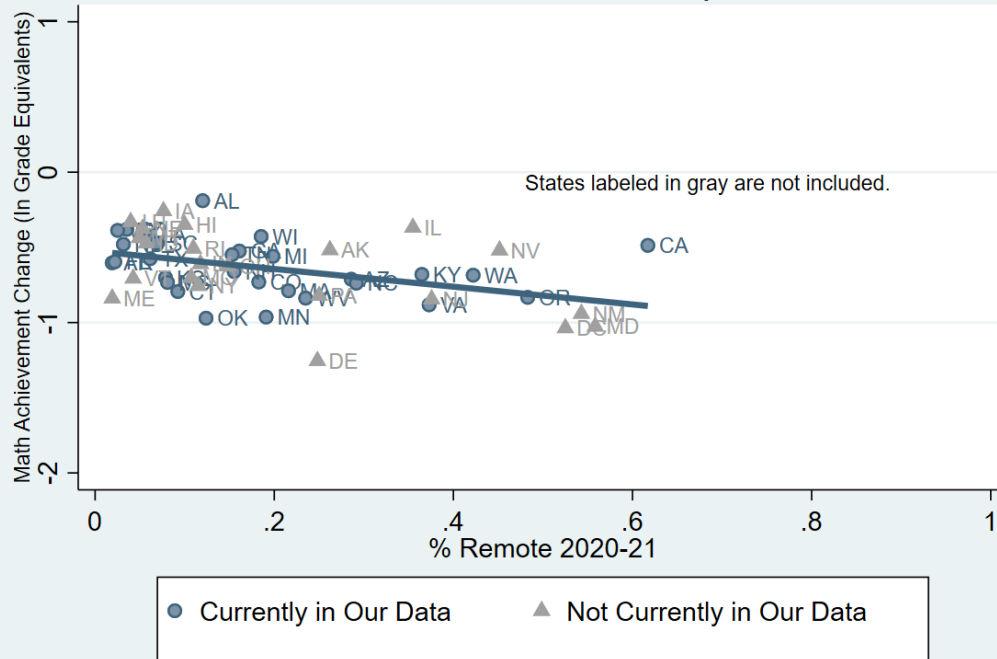
As a result, in the second graph below, we first calculate the difference between a district's achievement loss and the state average. We do the same for the percent of the year a district was remote and plot the within-state difference in achievement loss against the within-state difference in remote instruction. Effectively, we are comparing differences in achievement losses against differences in percent of the year remote for districts within the same state. The fitted line implies that the average district that was remote all year during 2020-21 had an achievement loss .41 grade equivalents greater in math and .20 grade equivalents greater in reading than the average district in the same state that was in-person all year. It is important to note that these are descriptive patterns: we cannot disentangle in this simple analysis the effects of remote learning from the effects of other correlated factors, such as socioeconomic conditions, COVID infection and death rates, unemployment and economic factors, and broadband access, for example.

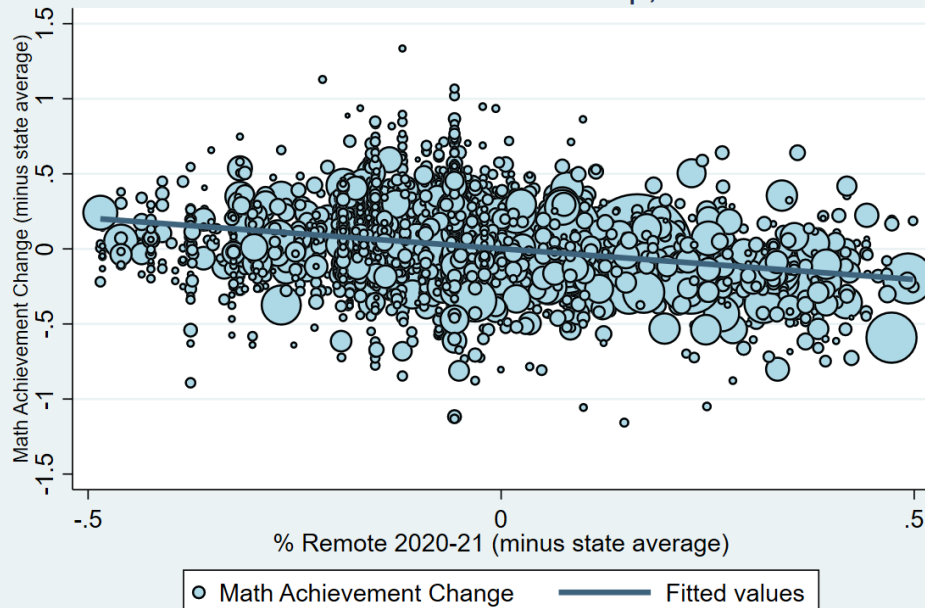**However, school closures do not appear to be the primary factor driving achievement losses**. Achievement losses varied widely among districts that spent the same share of 2020-21 in remote learning. Just as California, a state with long school closures, had losses smaller than Maine (a state with low rates of school closures), many districts which spent much of the year in remote learning had smaller losses than districts which were in person. Moreover, even in districts which were not remote for any of the year, scores in math and reading declined substantially (by one-third and one-fifth of a grade level, on average). In future research, we will be investigating the role of other factors—such as COVID death rates, broadband connectivity, the predominant industries of employment and occupations for parents in the school district—that might be contributing to the disparate impacts of the pandemic.

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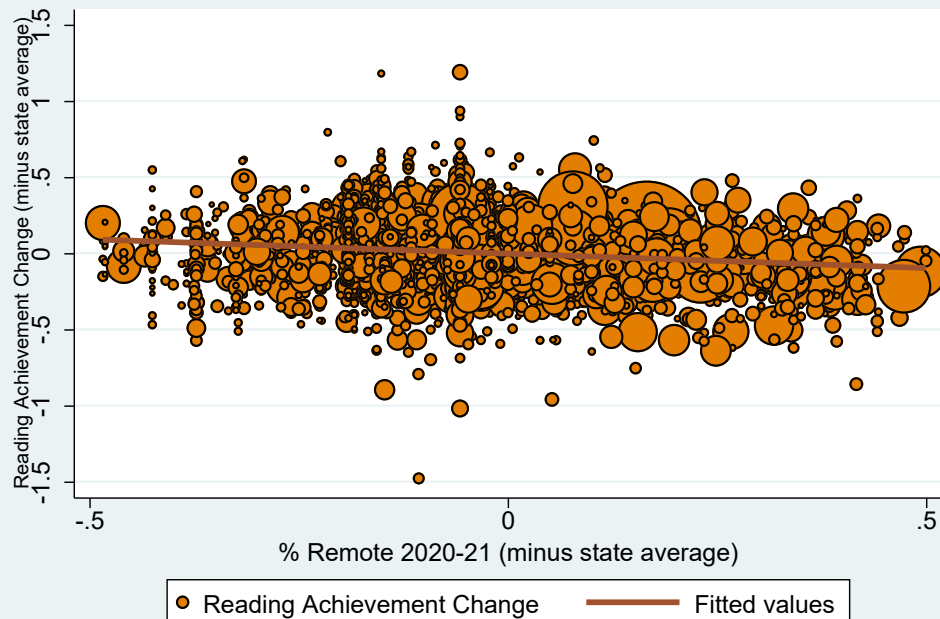
Between-State Relationship, Math

States labeled in gray are not included.

- Currently in Our Data
- Not Currently in Our Data

Within-State Relationship, Math

- Math Achievement Change
- Fitted values

Between-State Relationship, Reading

States labeled in gray are not included.

● Currently in Our Data   ▲ Not Currently in Our Data

Within-State Relationship, Reading

● Reading Achievement Change   ── Fitted values

In many districts, the share of annual instructional budget corresponding to lost achievement is greater than the share received in federal ARP ESSER funding. One approach to estimating cost of recovery is to calculate the share of each districts' pre-pandemic instructional budget corresponding to the grade equivalent loss. In other words, if a district lost .45 grade equivalents in math, one might expect that it would cost at least as much as 45 percent of the district's pre-pandemic instructional budget to catch-up. (It is unlikely to be cheaper to produce 45 percent of typical year's learning on top of typical annual learning gains with supplemental interventions such as tutoring or after school or extending the school year.) For districts representing 65 percent of the students in our data, the losses in grade equivalents exceeded the share of pre-pandemic annual instructional budget provided by the American Rescue Plan.

65% of enrollment in districts where likely cost of recovery exceeds ARP funds.

ARP Funding-Estimated Cost
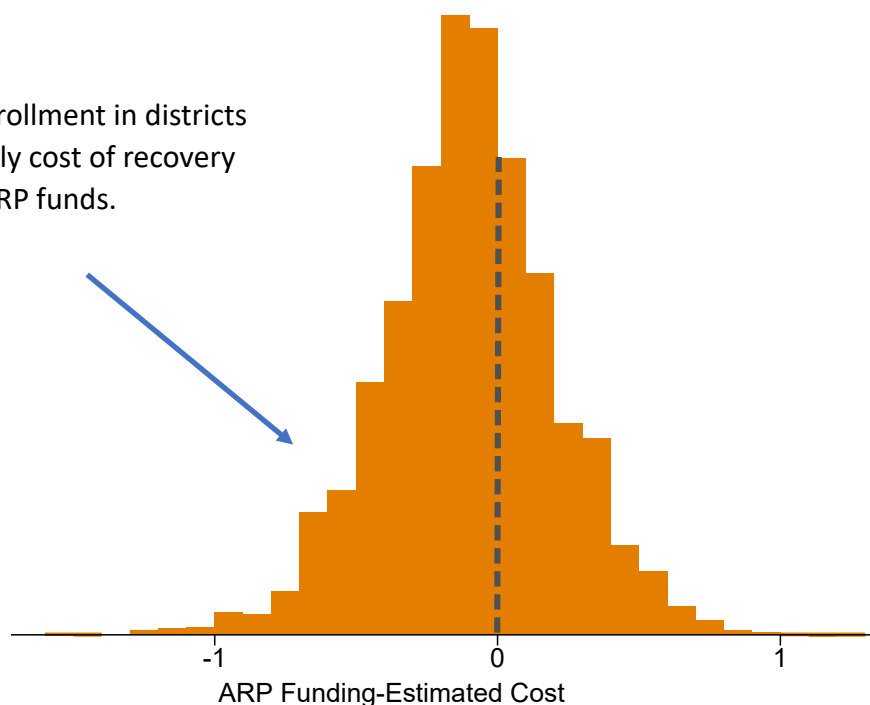
Conclusion

The COVID pandemic affected virtually every aspect of children's lives, including their families, their social lives, their mental health, and their schooling experiences and learning opportunities. A comprehensive accounting of the toll of the pandemic on students would measure not just their math and reading skills, but also their mental, physical, and socioemotional well-being. We do not have large-scale, comprehensive measures of most of those dimensions of childrens' well-being, however. But we do have population-level data on children's academic performance, and those do provide a useful window – albeit a narrow one – through which to assess how the pandemic has impacted children.

The new, locally detailed data we have assembled show that the effects of the pandemic were inconsistently felt across America. In some communities, elementary and middle-school students test scores are a grade level or more behind those in the same grade 3 years ago; in others, there has been little or no change. Moreover, the declines in scores were notably larger in higher-poverty school districts, on average, meaning that the pandemic widened already large educational disparities between high- and low-income communities. Those inequalities must be reversed.

It is critical that local leaders understand the impact of the pandemic in their communities. Given that 90 percent of the federal dollars for pandemic relief have been allocated to school districts, most of the critical spending decisions are being made locally, by district leaders and school boards, and not by states or federal officials.

Our hope is that policymakers and educators can use these detailed data to better target education recovery efforts toward the communities, schools, and students who were most harmed by the pandemic. The uneven impacts of the pandemic on children necessitate locally-targeted responses. These efforts should certainly include investment in and expansion of evidence-based strategies. It is important that local communities use evidence of efficacy to develop a response which is commensurate with their losses.

Finally, it is important to remember that the declines in test scores evident on the NAEP assessments and on state assessments were not caused solely, or even primarily, by childrens' schooling experiences. Nor should we rely solely on schools to undo the uneven effects of the pandemic on children. A full recovery from the pandemic will require not just well-targeted, evidence-based efforts by schools and educators, but coordinated efforts by healthcare systems, and mental health systems, social service agencies, community organizations, and other state and local agencies.