



# Summer School As a Learning Loss Recovery Strategy After COVID-19: EVIDENCE FROM SUMMER 2022

**Across the country, school districts have expanded summer programming to help address COVID learning loss. Is it enough to help students recover?**

On average, US students in grades 3-8 have lost a half-year of math and a quarter-year of English learning because of the COVID-19 pandemic. To help students catch up, many school districts have expanded their summer learning programs.

To learn more about summer school's potential as a strategy for COVID learning recovery, the **Road to COVID Recovery** project tracked the academic progress of summer school students across 8 districts serving 400,000 students.

We found that students who attended summer school improved their test scores in math but not in reading. The positive results in math for summer school are a good sign, but summer school at the current scale is not enough to offset the overall losses facing most districts.

## Road to Recovery Research Brief

This brief is part of the **Road to COVID Recovery Project (R2R)**. The R2R brings together school district leaders and researchers to study the design, implementation, and effects of academic COVID recovery initiatives. **Learn more at:**

<https://cepr.harvard.edu/road-to-covid-recovery>

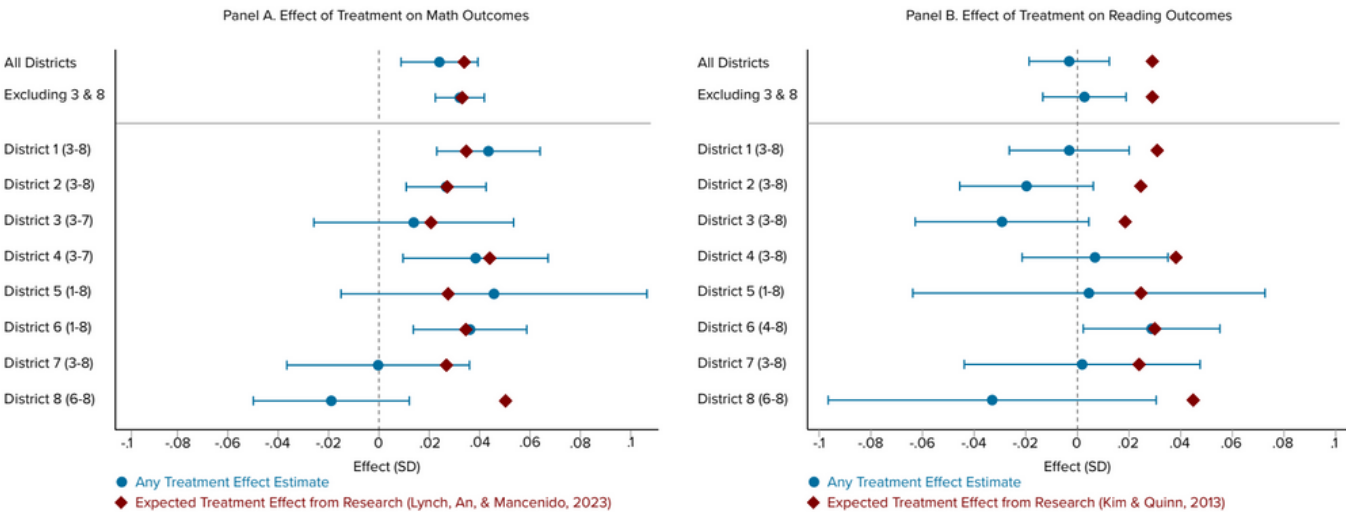
## MAJOR FINDINGS

### 1. Students who attended summer school did better on math tests, but not reading.

In six of the eight districts we studied, summer school led to gains in students' math test achievement. When we accounted for the duration of each program, the size of the gains (approximately 0.03 standard deviations) aligned with prior research. We found positive impacts in reading in only one of the eight districts.

**Figure 1** shows the effects of summer school in math (left panel) and reading (right panel). The blue dots represent the estimated effect in terms of test score standard deviations. For comparison, the red diamonds show the effects we would expect based on prior research and a program's duration. In math, for example, prior research suggests an increase of 0.10 standard deviations in math achievement for programs averaging 2 hours of math instruction for 26 days. Compared to these benchmarks, programs in the R2R districts were shorter (15-20 days) and provided students with less total instructional time per subject (11-36 hours). While the R2R summer programs had less overall impact on math and reading scores than previously studied programs, they had approximately the same effect on math scores per hour of math instruction.

**FIGURE 1. Summer School Program Effects on Math and Reading Outcomes**



## 2. Most of the gains in math were driven by students in elementary schools.

Subgroup analyses show that the positive results in math were driven by elementary students more than middle schoolers. Otherwise, the programs were similarly effective for students from different subgroups (e.g., race/ethnicity, poverty, English learner status, etc.).

## 3. Providing extra tutoring during summer school does not necessarily lead to better outcomes.

Three of the eight districts offered extra tutoring in small groups as part of their summer school programming. Their results were similar to the results in districts that did not provide tutoring. That said, relatively few students received tutoring in the districts that offered it during summer school, limiting our ability to differentiate the effect of the combined programming.

## 4. We found suggestive evidence that students were more likely to participate in summer school if it was located at their regular school or if they were targeted for recruitment.

Summer school participation varied widely across the districts. The average overall participation rate among eligible grades was 13%. But rates varied from 4.8% to 22.6%. Average participation rates were higher for students whose schools were “hubs” for summer school (17.3%) compared to students whose schools did not host a summer program (11.9%). Among the subset of students who were recommended to attend summer school, the average participation rate was 25%.

## 5. The scale of COVID-related learning loss remains large relative to the impacts of summer learning programs.

A back-of-the-envelope calculation suggests the math gains associated with summer school in our study made only a modest dent in the overall recovery needed in math. For a district that experienced average learning loss, we estimate these summer programs made up for about 2 to 3 percent of their total loss in math achievement following the pandemic. To put that into perspective, an average district would need to send every student to a five-week summer school with two hours of math instruction for at least two to three years in a row to get back to pre-COVID math achievement levels. With summer school participation rates at 13 percent, the current programs are far less than what is needed.

### The Bottom Line

We found that summer school can be an effective district-led strategy to boost math achievement and aid academic COVID recovery. But given the scale of learning losses, districts and states need to continue to implement and expand their use of multiple strategies to supplement instructional time—layering summer school with high-dosage tutoring, double dose math courses, extended school days or years, and/or evidence-based retention programs. As ESSER funds expire and the push to extend learning time faces political resistance, district recovery efforts will require continued resources and political backing from states and the federal government.

Our findings in this and other studies reveal that the scale and intensity of recovery efforts remain far below what is needed. If states and districts do not substantially ramp up their academic recovery programs, many students will pay the price.

Go Deeper at <https://cepr.harvard.edu/road-to-covid-recovery>

Callen, I., Carbonari, M. V., DeArmond, M., Dewey, D., Dizon-Ross, E., Goldhaber, D., Isaacs, J., Kane, T. J., Kuhfeld, M., McDonald, A., McEachin, A., Morton, E., Muroga, A., & Staiger, D. O. (2023). Summer school as a learning loss recovery strategy after COVID-19: Evidence from summer 2022. Research Report. Cambridge, MA: Center for Education Policy Research, Harvard University / CALDER Working Paper No. 2901- 0823.

## RESEARCH NOTES

To make up for pandemic-related learning losses, many U.S. public school districts have increased enrollment in their summer school programs. We assess summer school as a strategy for COVID learning recovery by tracking the academic progress of students who attended summer school in 2022 across 8 districts serving 400,000 students.

The report draws on data from the Road to COVID Recovery (R2R) project, an ongoing partnership between researchers at the American Institutes for Research, Harvard University, NWEA and 11 school districts. R2R aims to provide districts with timely feedback on their academic recovery interventions. Of these districts, eight provided data to participate in the summer 2022 analysis and comprise the sample for this report. These eight districts collectively enroll approximately 400,000 students across 7 states. Data for this study include: (a) interviews about program characteristics with district leaders (b) student-level eligibility and program participation data provided by the districts, and (c) NWEA MAP Growth assessments.

We use value-added models (VAMs) to estimate the effect of each of the eight summer programs on MAP Growth test scores, using the previous spring as the baseline and the subsequent fall score as the outcome. In addition to estimating the effect of summer school participation, we estimate the effect of an hour of math or reading instruction during summer school on fall 2022 MAP scores.

## SUMMER PROGRAMMING IN EIGHT DISTRICTS

All eight districts provided in-person summer school taught by district teachers at central locations, or “hub” schools. Every district offered instruction in math and reading. Two of the districts offered summer school for students in grades K-12 (District 1 and District 6). The rest offered summer school for elementary and middle school students. The following table provides additional information about each district’s summer program.

	District 1	District 2	District 3	District 4	District 5	District 6	District 7	District 8
Opt-in Participation?	✓	✓	✓	✓	✓		✓	✓
Participation by invitation?		✓	✓	✓		✓	✓	✓
Students eligibility for invitation to summer school		Below grade-by-subject threshold on state tests	SEL or other needs based on prioritization matrix	Below grade-by-subject threshold on state tests or MAP		Low-scoring students	Low-performing and historically underserved students	Students identified as academically behind
Intended dosage	4 weeks, 19 days	4 weeks, 15 days	4 weeks, 15 days	5 weeks, 20 days	3 weeks, 15 days	12 to 18 days	4 weeks, 20 days	6 weeks, 17 days
Academic time per day	90 min	90 min	45-90 min	90-100 min	90 min	60-120 min	60 min	120 min
Operating hours	Extended hrs	Regular school hrs	Half school day	Half school day	Half school day	Half school day	Half school day	Full school day
Other programming		Tutoring	Virtual summer program	Tutoring		Tutoring		

