



EXECUTIVE SUMMARY

Overcoming Pandemic-Induced Learning Loss

by Jonathan Guryan and Jens Ludwig

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Introduction

US students experienced major learning setbacks during the COVID-19 pandemic of 2020–2022. If these learning losses are not quickly remedied, an entire generation of students is at risk of lower levels of educational attainment, human capital development, and lifetime earnings. Although little to no progress has been made in remediating pandemic-induced learning loss, the federal government’s pandemic relief to school districts—authorized through the Elementary and Secondary School Emergency Relief (ESSER) Fund—must be committed by September 2024, or districts will lose the money.

Jonathan Guryan and Jens Ludwig argue that school districts across the US need (1) more time to spend down their ESSER funding, (2) more resources beyond those allocated in ESSER, and (3) more accountability to ensure that dollars are spent on the difficult or less popular things that are most effective in helping students learn. Based on evidence, the authors propose that high-dosage tutoring can be leveraged to boost student learning and that the strategic incorporation of technology into such efforts can be used to appropriately scale its offering. But, they caution, such efforts will require more time, money, and accountability for schools.

The Challenge of Pandemic-Induced Learning Loss

The COVID-era shift to remote learning widened disparities in schooling outcomes in America. During the pandemic, chronic absenteeism increased dramatically across the country and missing that much school, along with remote school being an imperfect substitute for in-person instruction, led to large learning losses. These widened gaps in learning exacerbated existing problems for teachers, who must try to teach grade-level content to students whose academic levels vary enormously. The danger is that students who fall behind grade level wind up benefiting less from each subsequent year of classroom instruction because they are increasingly far behind the level of what is being taught in the classroom. The consequences of pandemic learning loss are likely to be long-term.

Data from the National Assessment of Education Progress documented the first decline in US math test scores ever recorded. These losses are even larger for low-income and minority students and in districts that used remote learning for longer. Unfortunately, little progress has been made in addressing this pandemic learning loss. If left uncorrected, evidence suggests that the nearly 50 million children enrolled in public K–12 schools could see an average of 2–9 percent lower lifetime income as a result, with declines in eighth grade math scores alone leading to a collective \$900 billion loss in future earnings.

Congress sent \$189.5 billion to schools through the Elementary and Secondary School Emergency Relief Fund (ESSER) in 2020 and 2021, requiring that at least 20 percent of that amount be set aside to address learning loss. However, this ESSER funding

represents a mere 6 percent increase in total school funding, and there are signs that a lot of this money went to simply replacing lost tax revenue. In addition, the last round of ESSER funds must be committed by September 2024, despite little progress having been made.

A Promising Solution: High-Dosage Tutoring

High-dosage tutoring (HDT)—which Guryan and Ludwig define as several hours of tutoring per week delivered in school—helps address what teachers report in surveys to be the two most difficult, and perhaps related, challenges of classroom teaching: variability in students' academic levels (and hence their needs) and classroom management.

According to the authors, data suggests that tutoring is the best way to teach anyone anything. A series of demonstration projects in the 1980s found that students tutored one-to-one spent almost 40 percent more time on-task, and learned 2 standard deviations (roughly equivalent to moving from the 15th percentile to the 85th percentile) more than their peers, compared to regular classroom instruction. Tutoring has also achieved results in real-world settings. A review of more than 90 randomized controlled trials (RCTs) of smaller-scale tutoring programs showed an average effect of 0.37 standard deviations. The authors' own RCT partnership of high-dosage high-school math tutoring in Chicago showed that two-on-one tutoring for 45–50 minutes each day in school increased math test scores by 0.16 standard deviations and reduced math-course failures by 49 percent.

Overall, Guryan and Ludwig argue that the learning gains from HDT are much closer to offsetting the average learning loss experienced during the pandemic than other potential policy measures are, and that they are plausibly the intervention most up to the task of meeting the scale of our current learning-loss challenge.

The authors state that scaling such programs is a significant challenge that largely stems from a combination of limited money and limited labor supply (i.e., a finite supply of tutors). Luckily, high-quality computer-assisted learning (CAL) platforms are designed to help students operate at their current academic level, progress at their own pace, and maximize time on-task. For example, in research in the Chicago Public Schools, students spent every other day with a tutor and off days on a high-quality CAL platform. The result was to cut costs by about one-third relative to daily tutoring and to cut in half the number of tutors needed. Yet the benefits to student learning were almost exactly the same as those resulting from daily tutoring. CAL cannot fully replace in-person tutoring but it shows promise to help scale programs and reduce costs.

Another reason that HDT has not been more widely adopted is that schools have a hard time modifying standard operating procedures to incorporate tutoring. Such modification includes finding dedicated time during the school day to incorporate tutoring and getting students to participate in tutoring programs.

In classrooms of 25–35 students, teachers need a great deal of prior pedagogical training and on-the-job learning to (a) successfully personalize instruction and (b) handle classroom management. But with one or two students in a tutoring situation, these two tasks become different and easier, and lower-paid paraprofessionals with little prior educational background can be remarkably successful.

A Policy Path Forward

Guryan and Ludwig argue that to avoid lifelong harm to the current generation of 50 million school-age children across the country, policymakers need to provide schools with three things:

- **More time to spend down federal pandemic assistance:** The authors observe that schools have made remarkably little progress remediating pandemic learning loss, but also that most schools needed to build programs from scratch amid national labor shortages and that some districts are just now starting to put tutoring infrastructure in place. Pulling their federal funding at the end of the 2023–2024 academic year would be like calling it quits before the real work begins.
- **More resources beyond the initial federal ESSER allocations:** ESSER funding initially averaged out to about a 6 percent increase in annual K–12 public spending, with a lot of that money made available to districts to overcome tax revenue lost due to the pandemic. The authors estimate that almost half of students—about 25 million—are behind grade level in at least one subject. They suggest that a package of tailored tutor-plus-CAL personalized instruction at an average cost of \$3,000 per student would make the cost of remediating the remaining pandemic-induced learning loss on the order of \$75 billion. Moreover, the authors' previous estimates suggest that every dollar put into some version of tutoring can return \$2 to \$13 in social value in return.
- **More accountability to push schools to make the hard changes that will actually promote student learning:** To ensure that schools adjust their standard operating procedures to faithfully implement the type of tutoring that will genuinely help students, the authors say that additional accountability measures (and perhaps other types of nudges) are likely to be required.

Conclusion

Guryan and Ludwig outline a cost-efficient policy approach of innovative, high-dosage tutoring supplemented by computer-assisted learning to ensure that students left behind during the pandemic can catch up to grade level and even go beyond it. The approach proposed in this paper has the potential to advance both economic efficiency and educational equity. Policymakers should ensure that school districts have the time, resources, and accountability to implement effective solutions to address learning loss.

ABOUT THE AUTHORS

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Jonathan Guryan is the Lawyer Taylor Professor of Education and Social Policy, a faculty fellow at the Institute for Policy Research, and a courtesy member of the economics department and the Kellogg School of Business at Northwestern University. He is also a research associate at the National Bureau of Economic Research and a co-founder and co-director of the Education Lab at the University of Chicago. Much of his research falls into two main categories, understanding the sources and consequences of racial inequality and the economics of education. His work on these subjects has been published in leading journals such as the *American Economic Review*, the *Quarterly Journal of Economics*, and the *Journal of Political Economy*. He is an elected member of the National Academy of Education.

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