Accelerate

Tutoring in U.S. Public Schools:

What We Know, How We Know It, & What Remains Unknown

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Overview of Talk

- Background on Accelerate
- Tutoring landscape
- Existing evidence
- Known unknowns
- A note on scalability

Accelerate

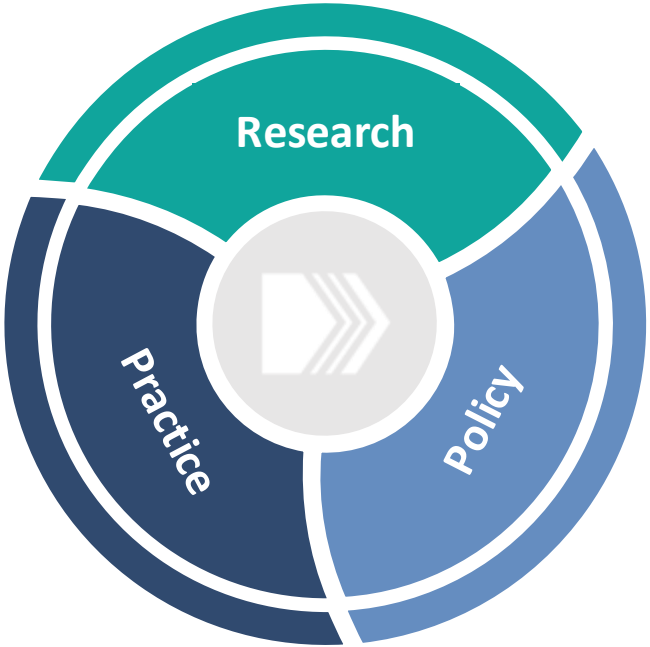
Through competitive grant programs, Accelerate incentivizes the wide-scale adoption of effective tools and strategies to improve academic outcomes for historically underserved students.

IF we identify cost-effective interventions that improve student achievement through rigorous research

AND align public policies to drive adoption of these interventions in schools

THEN millions of students nationwide who are academically behind and in historically underserved communities will dramatically increase their measurable achievement outcomes.

Accelerate's Role



Practice

Identify cost-effective interventions and evaluate potential interventions for implementation, scalability, data collection, and equity

Grant awards incentivize organizations and districts to participate in rigorous research projects

Research

Fund, direct, and design rigorous studies that identify best practices for implementation and impact and help the field coalesce around a common research agenda

Evidence informs and motivates the field to prioritize the interventions most likely to improve student outcomes

Policy

Align federal and state policy to support proven educational interventions and ensure that schools, districts, and states have funding to adopt best practices

Funding sustainability is achieved through changes to policy and regulations

Accelerate Research Studies

		Implementation	Impact	
Program Type	**Providers**	**Correlational**	**QED**	**RCT**
CEA (22/23)	31	18	9	4
CEA (23/24)	31	9	11	11
CEA (24/25)	17	8	1	8
SLR (23/24)	8	0	2	6
Total	**87**	**35**	**23**	**29**

Tutoring in the U.S.

What is High-Dosage Tutoring?

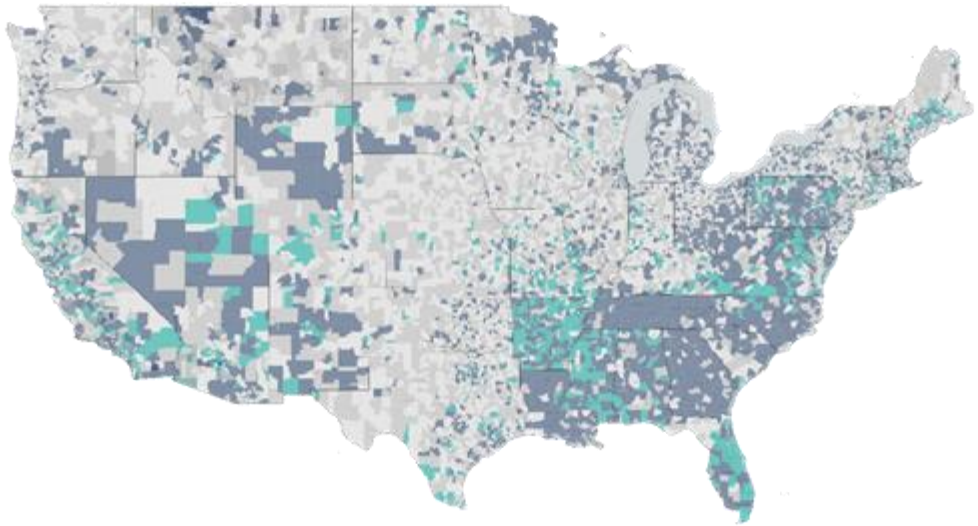
According to existing research (Kraft & Falken, 2021; Nickow et al., 2024; Robinson et al., 2021), high-dosage (i.e. high-impact) tutoring can be defined by the following criteria:

- Tutoring is **personalized**: Low student-to-tutor ratio (not higher than 4:1).
- Tutoring is **intensive**: 3-5 sessions/week, at least 30-60 minutes/session.
- Tutoring is **sustained**: 50 hours of tutoring (over 36 weeks, with some effective tutoring programs lasting for at least 10 weeks).
- Tutoring is based on **high-quality instructional materials** (HQIM): Incorporates direct instruction using high-quality instructional resources and formative assessments aligned with grade-level content and Tier 1 classroom instruction. Tutoring is not homework help.
- Tutoring occurs **during the school day**: School-embedded programs have significantly higher student attendance than after-school programs.

Demand for High-Dosage Tutoring in the U.S.

- As of October 2024, 37 percent of public schools nationally offered high-dosage tutoring (HDT) (School Pulse Panel)
  - In schools offering HDT, 25 percent of students, on average, received HDT during the school year
  - Yet, just 8 percent of students nationally, on average, received HDT during the school year
- 2024 NAEP results reveal significant demand for academic support such as HDT
  - 39 (30) percent of grade 4 students academically proficient in math (reading)
  - 27 (29) percent of grade 8 students academically proficient in math (reading)
  - Proficiency is even lower among economically disadvantaged students

Distribution of ESSER-funded Tutoring



Key:
Cyan: ESSER plan included tutoring funds (~1000)
Blue: ESSER plan included tutoring, no funding specified (2,500+)
Gray: ESSER plan available, no tutoring mention
White: ESSER plan unavailable

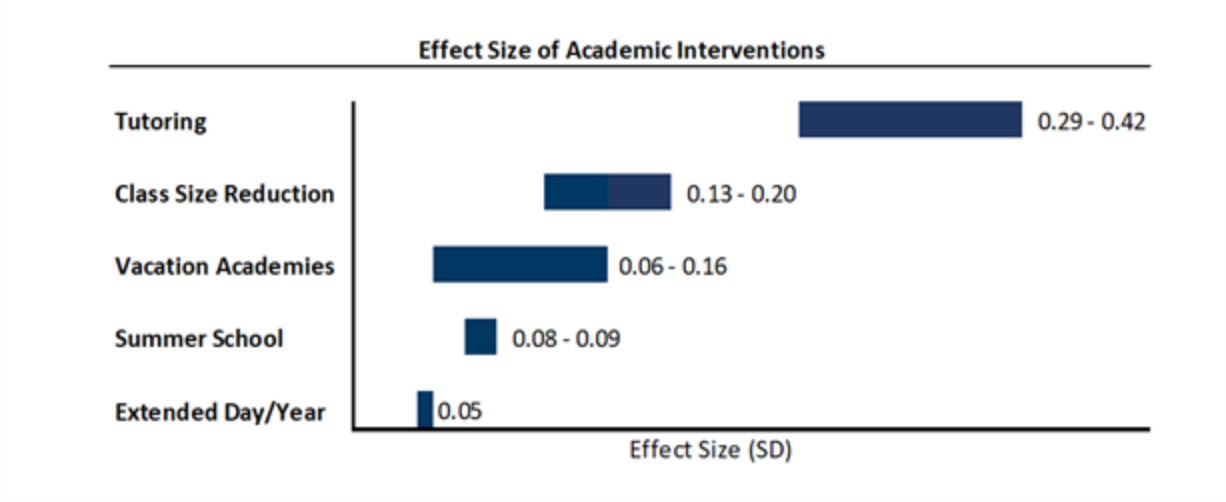
Source: Burbio. This map shows the distribution of tutoring supported by ESSER funds. ~7,000 districts included in the Burbio data set cover 83% of public school students.

- ESSER funds for tutoring range from $1.7 billion (Burbio) to $7.5 billion (FutureEd)
- ESSER funds (overall) increased math & reading achievement by .008 SD (math) and .005 SD (reading) (Dewey et al., 2024; Goldhaber & Falken, 2024)
  - Consistent with pre-pandemic meta-analytic evidence on education spending (Jackson & Mackevicius, 2023)

Current State of Evidence

What We Already Know

Evidence increasingly confirms that, on average, high-dosage tutoring improves student achievement more than other educational interventions.



- Among large-scale RCTs (>350 students), impact of tutoring ~ 0.20 SD (Nickow et al., 2024; Kraft et al., 2024; Kohlmoos & Steinberg, 2024)

Current High-Dosage Tutoring Research Landscape

Data from the 89 RCTs included in Nickow et al. (2024) provides a representative snapshot of the HDT evidence landscape

- Majority ELA, reflecting both the provider landscape and available research
  - Of the 265 RCTs included in Kraft et al. (2024), 73% are literacy tutoring programs in elementary grades
- Relative lack of evidence on tutoring impact in Grades 6-11 (middle and high school students) and in math content area
- Modality (in-person, virtual, hybrid) not included, reflecting opportunity for further research

ELA, Grades 2-5 1:1	Math, Grades 2-5 1:1	ELA, Grades PK-K 1:2	Math, Grades 2-5 1:2
ELA, Grade 1 1:1	Math, Grade 1 1:1	ELA, Grades 6-11 1:3+	Math, Grade 1 1:2
ELA, Grades PK-K 1:1	ELA, Grades 2-5 1:2	Math, Grades 2-5 1:3+	Math, Grades PK-K 1:3+
ELA, Grades 2-5 1:3+	ELA, Grade 1 1:2	Math, Grades 6-11 1:1	Math, PK-K 1:2
ELA, Grades 6-11 1:1	ELA, Grades PK-K 1:3+	Math, Grade 1 1:3+	Math, Grades 6-11 1:3+
ELA, Grade 1 1:3+	Math, Grades PK-K 1:1	ELA, Grades 6-11 1:2	Math, Grades 6-11 1:2

Most

Fewest

Known Unknowns

Building an Evidence Base

- Despite the extent of existing research on the impact of tutoring, much remains unknown
- There is a need for more research into the specific tutoring programs that improve student learning, for which students, in what educational contexts, at what costs, and the programmatic features most associated with student achievement gains
- Researchers and policymakers alike would benefit from more studies that address the following:
  - Understudied student groups (e.g., middle grade math; special ed; ELLs)
  - Study design (large sample sizes; multi-arm trials)
  - Policy-relevant outcomes (e.g., EOY exams; longer-term outcomes)
  - Data collection & replication (program cost data; replication trials)

Research Opportunities

To fill the gaps where there is little or no rigorous research, we need to continue building evidence to more fully understand the following:

Program Design

- Modality (virtual, hybrid, in-person)
- Tutor types (teachers, volunteers, paraprofessionals)
- Student-tutor ratios
- Curriculum materials
- Dosage
- Interactions between program design features
- Particular interest in math and middle and high school grades

Cost & Cost-Effectiveness

- Specific tutoring providers
- Variance across different tutoring providers
- Variance across different program design features
- Determining return on investment based on various combinations of programs and design features
- How costs vary by student type

Artificial Intelligence

- Strengths and weaknesses of current tools in the market
- AI-facilitated versus AI-supported tutoring
- Delivering HQIM-aligned content
- Providing instructional feedback and coaching
- Operating in different educational settings and contexts

Research Opportunities: Sample RQs

Program Design

- Does the impact of tutoring vary as a function of specific features of tutoring programs for different grade bands and subjects, and for different groups of students?
- How do program design features interact to impact student learning? How much does this vary by student group?

Cost & Cost-Effectiveness

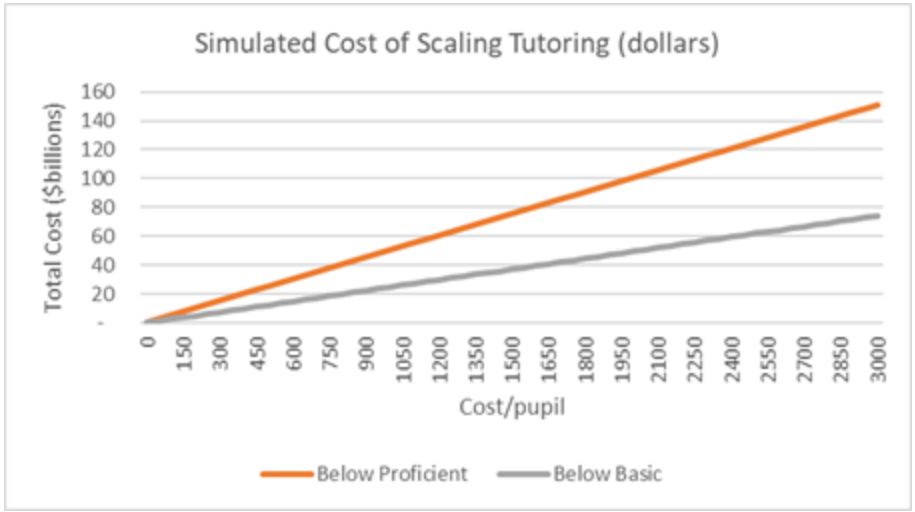
- What is the cost (per pupil) and cost-effectiveness of specific providers?
- How does cost (per pupil) and cost-effectiveness vary across providers? With different program design features?

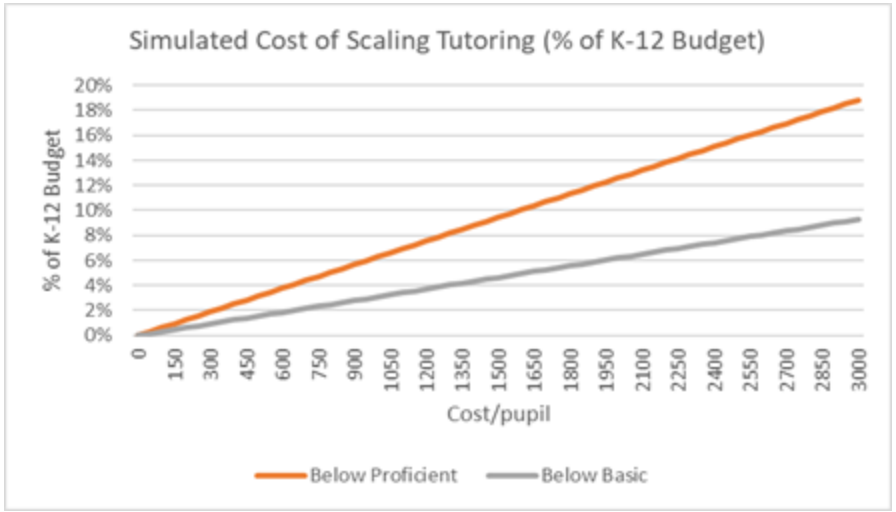
Artificial Intelligence

- What is the impact of AI-enabled tutoring on student learning?
- Does AI-enabled tutoring support more efficient and effective instructional feedback and coaching for tutors?
- How does the cost and cost-effectiveness of AI-enabled tutoring compare to human tutoring?

A Note on Scalability

- Parameters:
  - Student need (count of students below proficient/below basic)
  - Impact of tutoring (0.20 SD corresponding to ~ 3 months of additional learning/year)
  - Academic recovery duration (~ 4.5 months behind; ~ 1.5 years of tutoring to recover)
  - Cost/pupil
  - Total cost = student need x academic recovery duration x cost/pupil





Thank You

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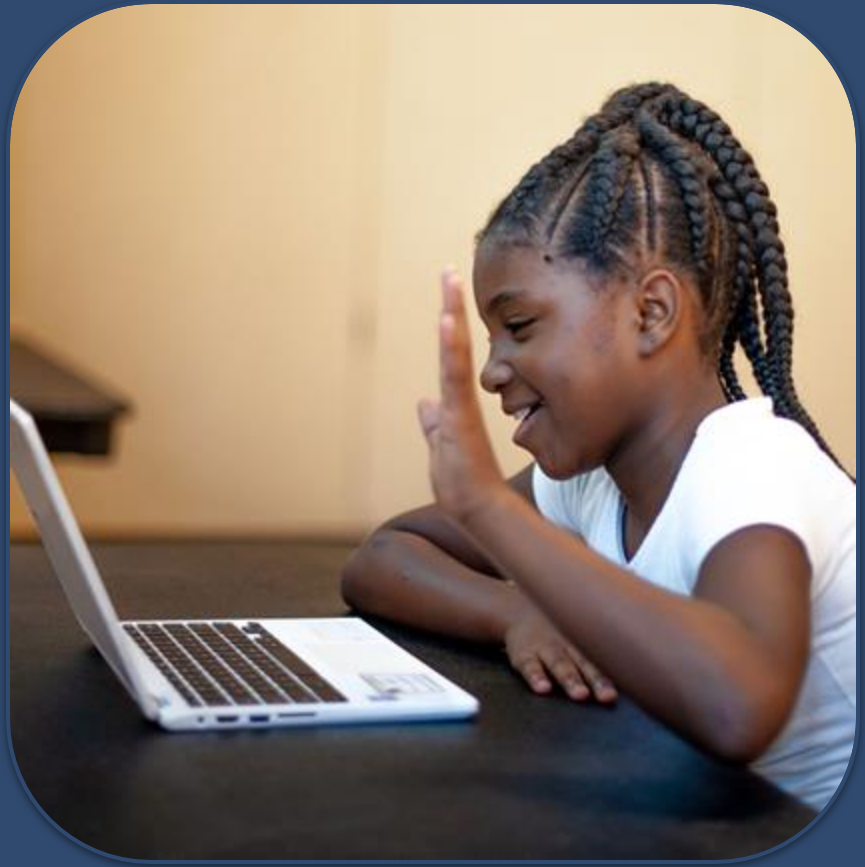
In three years, districts and schools should be able to support as many students as possible with an effective personalized learning intervention if the field can:

- Understand which programs under which implementation settings benefit which kids
- Identify providers equipped to meet these needs
- Fund and sustain models that are efficient and cost-effective at scale
- Build state policies that facilitate the funding and execution of this work



Where We Want to be in 2028

For Students

- Be able to identify the characteristics of students who can be served effectively by the lowest cost options
- Develop evidence identifying which students likely require the most intensive and costly interventions
- Build a commitment across districts and states to serve all high-need students through evidence-based personalized learning interventions

Research Learning Community

Accelerate's Research Learning Community (RLC) brings together leading education researchers to connect around the impact, efficiency, and cost effectiveness of high-dosage tutoring programs. The RLC will be instrumental in guiding the development and refinement of our research questions.

Program Design | Sample Research Questions

- Do lower cost tutors/volunteers in person produce different effects on student learning than more experienced/expensive teachers working virtually?
- Do students with the largest learning gaps require 1:1 tutoring to achieve significant growth? Does this vary by grade level/subject area?
- Do high school students realize more academic gains with virtual or in-person tutors?
- How do higher student-to-tutor ratios impact math in-person tutoring compared to reading?
- Are higher performing students more likely to make gains with technology-driven instruction than lower performing students?

Cost & Cost Effectiveness | Sample Research Questions

- How does cost (per pupil) and cost effectiveness vary for in-person versus virtual elementary ELA tutoring?
- To achieve acceptable student growth, are some student groups (grade/subject/performance level) more likely to succeed with tech-enabled instruction than others? Are some students more likely to need 1:1 intensive supports than others?
- What is the cost (per pupil) and cost effectiveness of tutoring providers that serve high school students? Are these costs necessarily different for early grades and middle grades?
- How does cost (per pupil) and cost effectiveness vary across in-person math tutoring providers?

AI | Sample Research Questions

- Does AI-enabled tutoring support more personalized delivery of HQIM-aligned content than current tutoring providers and programs?
- Does AI address challenges with program implementation and student participation associated with human-provided tutoring?
- Does AI-enabled tutoring support more efficient and effective instructional feedback and coaching for tutors?
- Are AI-enabled tutoring products as effective in math? Does this depend on grade level?
- Can we design high quality research of AI-enabled products that gives results on a faster timeline and accounts for iterative design?