

Investing in the Midst of Unknowns

AI, Tutoring, and the Road Ahead

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Executive Summary

Funders rarely have the luxury of waiting for perfect evidence before making investment decisions. The evidence on high-impact tutoring is among the strongest in education: frequent, relationship-based tutoring embedded in the school day consistently produces meaningful learning gains, particularly in math and early literacy — the kind of efficacy that researchers, product developers, and funders long for.

Yet translating this evidence into scaled practice has proven difficult. High costs, tutor quality variability, implementation struggles, and uneven student participation have long constrained the field. It is against this backdrop that AI has emerged as a promising, if still largely unproven, lever for expanding access without sacrificing quality.

Human tutoring and AI occupy opposite ends of the evidence spectrum. One is a rigorously studied intervention; the other is advancing faster than research can keep pace. This brief examines what the research supports, where the gaps remain, and where funders have an opportunity to shape how AI-enabled tutoring develops — ensuring that the students who stand to benefit most are not left behind.

What the Research Says About Tutoring

The research base on the efficacy of high-impact tutoring is strong and consistent. Over 150 randomized controlled trials (RCTs) evaluated by the National Student Support Accelerator (NSSA) validate this, with results in most cases ranging from half a year to more than a year of learning over one academic year of tutoring.¹ The most effective models share a common set of features: frequent delivery, embedded in the school day, and built on sustained relationships between tutors and students. These "high-impact" models have been shown to drive gains in academic achievement, particularly in math and early literacy, and can also support improvements in student engagement and attendance when participation is consistent.² While this research base is highly compelling, it is worth noting that the vast majority of studies have been focused on tutoring implemented by humans, either in-person or remotely.

The key question in 2026 isn't whether tutoring is effective, but how to translate these models into scaled practice. High-impact tutoring is resource-intensive, with costs driven by staffing, scheduling, and training. Programs also face variability in tutor quality (particularly when relying on novice tutors), and uneven participation, especially in opt-in models. Even well-designed programs often struggle to consistently reach the students who would benefit most. Naturally, these persistent challenges have prompted growing interest in whether AI can help expand access to effective tutoring without sacrificing quality.

The Role of AI in Tutoring Today

Recent research has begun to explore whether AI can help address some of the persistent constraints that have limited high-impact tutoring at scale. We see three primary ways that AI is being applied in tutoring: as direct support for students, as a tool to strengthen human tutors, and as a lever to reduce cost and expand access.



ROLE 01

Direct support for students

On-demand practice, guidance, and feedback that lets students work through problems in real time.



ROLE 02

Strengthen human tutors

Real-time coaching, lesson planning, and feedback that reduce variability in tutor quality.



ROLE 03

Lever for cost & scale

Automating instructional elements to lower per-student cost and enable sustainable models.

AI as a Direct Support for Students

One application of AI in tutoring is the use of AI-enabled tools to provide direct support to students. These tools, including chatbots and adaptive learning systems, can offer on-demand practice, guidance, and feedback, allowing students to work through problems in real time. However, research shows that even in cases where time is embedded in the school day for students to engage with AI tutors, students who engaged were more likely to be higher achieving and less likely to receive special education services, whereas struggling students who may have benefited the most were the least likely to use the tools.³

Research to date suggests that how these tools are designed matters. A review from the Stanford SCALE initiative finds that AI tools that provide hints or guide student reasoning show more promising outcomes than those that simply generate answers.⁴ While AI can support structured tasks like practice and feedback, it is less effective at replicating the relational and motivational aspects of high-impact tutoring that drive student engagement.⁵

One promising way to think about AI is as a complement to human tutors. Two new RCTs from NSSA showed students who engaged with an AI literacy platform and were assigned a human tutor not to provide direct instruction, but instead to focus on relationship-building, motivation, and troubleshooting, engaged with the platform more than students assigned to work independently. However, baseline usage was so low that the resulting gains did not translate into measurable improvements in reading achievement. Nevertheless, it has been known for some time that relationships are an important part of high-impact tutoring programs, and exploring combinations of human and AI tutor involvement is a promising line of study.

Despite these early findings, the current evidence base remains thin: Stanford identified only 20 high-quality causal studies that rigorously examined the effects of AI on students or educators across contexts during their review, with tutoring representing only a portion of the AI use cases across that repository. Further research on the design and implementation of AI tutoring products is urgently needed to enable both supply-side product development and demand-side decision-making amidst a rapidly evolving technological landscape.

AI as a Tool to Strengthen Human Tutors

Recent work from NSSA highlights the potential of AI-enabled coaching tools to improve the effectiveness of tutoring by strengthening human tutors. In their RCT Tutor CoPilot study, NSSA found that students working with AI-supported tutors were 4 percentage points more likely to master content, with gains up to 9 percentage points for students paired with less-experienced tutors. These improvements appear to be driven by changes in instructional practice: tutors using AI were more likely to use strategies to foster student understanding, such as asking guiding questions, and less likely to give away answers.⁶ This strongly suggests that AI can help reduce variability in tutor quality, which is a key barrier to scaling tutoring effectively.

+4 pts more likely to master content with an AI-supported tutor	+9 pts when paired with a less-experienced tutor
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Beyond coaching, AI can support tutors through lesson planning, real-time instructional prompts, targeted feedback on student progress, and closing the gap between what takes place in tutoring sessions and classroom instruction. These applications align closely with core drivers of tutoring effectiveness: consistency, structure, responsiveness to student needs, learning integration, and data use. By helping tutors deliver these elements reliably, AI has the potential to raise the overall quality of human tutoring.

AI as a Lever for Cost and Scale

In addition to improving quality, AI-enabled approaches may help address one of the most significant barriers to scaling tutoring: cost. High-impact tutoring models are resource-intensive. As a result, many programs struggle to expand without substantial ongoing investment.

Research and field priorities from the NSSA and other thought leaders point to AI as a potential lever to increase efficiency and expand reach. By automating instructional elements and enabling new delivery models, AI may reduce the per-student cost without compromising program quality. The focus on AI as a research priority for thought leaders in tutoring (e.g., NSSA, Accelerate) further signals growing interest in how these tools can support more sustainable and scalable tutoring models.

What Remains Unresolved – And How Funders Can Help

Despite a growing body of research on both tutoring and AI-enabled learning tools, important questions remain about how to design and implement these models effectively and equitably.

Many of the challenges that have historically limited tutoring's impact, such as inconsistent attendance, uneven participation, and difficulty reaching students most in need, are not addressed solely by adding AI to the equation. However, other barriers, like high cost per student and scaling with fidelity, have the potential to be addressed through the intentional incorporation of AI. This potential is what makes the unresolved questions below worth investing in.

The Relationship Conundrum

Tutor consistency and student-tutor relationships have been well-established as important elements of high-quality tutoring programs.⁷ Comparative studies generally find that remote and in-person tutoring produce similar academic gains, suggesting that tutoring delivered through technology rather than in-person can still be effective — but does this extend to when there is no human on the other side of the screen?

Further, in-person tutoring may offer distinct advantages outside of direct academic gains, namely attendance and relationship-building. Remote tutoring can introduce challenges related to distractions, limited accountability, and technology issues that may undermine student motivation and engagement — but research suggests that intentional program design can mitigate many of these challenges.⁸

IMPLICATION FOR FUNDERS

What remains unclear is which specific design choices matter most, and for which students. Working under the assumption that the goal should not be for AI tutors to replicate human relationships, what design and implementation decisions may offset some of the efficacy loss inherent in this tradeoff? Research to understand these implications, as well as broader questions around which elements of high-impact tutoring can and should be incorporated into AI tutor design, would be valuable to product developers and tutoring decision-makers alike.

The Coherence Opportunity

Learning integration and data use are two major elements of high-impact tutoring programs. While digital instructional materials and strong school/teacher communication structures both go a long way towards meeting these needs, it remains far from easy to seamlessly integrate student learning data from tutoring sessions into classroom instruction, and vice versa.

IMPLICATION FOR FUNDERS

Supporting the development and implementation of coherent instructional systems that integrate Tier 1, Tier 2, and Tier 3 instruction has the potential to eliminate barriers around meaningful learning integration and data use.

The Gap Between New Public Funding and Making It Count

New federal policy is poised to significantly expand family-directed spending on tutoring, with estimates suggesting up to \$24 billion annually could be used for education-related expenses, including tutoring, beginning in 2027.⁹ As of June 2026, 28 states have elected to participate in the Federal Scholarship Tax Credit (FSTC) program, which explicitly states tutoring as an acceptable use of funds for public school students.^{10,11} While this funding creates a major opportunity to expand access, it also introduces serious risks. Many families will be making tutoring decisions for the first time, with potentially limited awareness of what constitutes high-quality tutoring — particularly as AI-enabled options proliferate. Without stronger quality signals, this funding could disproportionately flow to providers that are easiest to access or market most effectively, rather than those that deliver meaningful impact.

IMPLICATION FOR FUNDERS

This creates an urgent opportunity for funders and ecosystem leaders to shape how quality is defined, communicated, and supported. Through the ESSER era, schools, districts, and states emerged as significant buyers of tutoring products and services. As this new opportunity emerges, attention must be paid to caregivers as decision-makers in order to put this new source of funding to meaningful use.

The Inequity of Opt-In Access

Research on tutoring implementation highlights that in opt-in models, the students who would benefit most are often the least likely to engage.¹² These challenges are likely to carry over into AI-enabled approaches if not explicitly addressed in program design and implementation.

IMPLICATION FOR FUNDERS

There are known solutions to this problem. For one, we know students will be much more likely to access these resources if they are embedded into their school learning experience — such as scheduled time in the school day to leverage on-demand tutoring. Another includes sending reminder communications to both students and their parents.¹³ The importance of implementation support and scaling best practices has grown with the advent of technology that makes on-demand, opt-in tools more accessible — an area ripe for continued philanthropic support.

New Tech, Same Dilemma

Equity questions are similarly unresolved. AI-enabled tutoring depends on reliable access to devices, connectivity, and digital literacy, which are unevenly distributed across schools and student populations. Without intentional design, these tools risk reinforcing existing disparities by disproportionately benefiting students who already have greater access to resources and support.

IMPLICATION FOR FUNDERS

The evidence base on AI-enabled tutoring's reach among underserved students is still thin, and closing that gap starts with better data. Funders can prioritize evaluations that disaggregate outcomes by student population, device and connectivity access, and digital literacy level. They can also support infrastructure investments — broadband access, device programs, digital skills development — that are prerequisites for equitable AI-enabled tutoring, rather than treating them as separate from the tutoring investment itself.

Conclusion

Ultimately, the open questions in this space are less about whether AI can play a role in tutoring and more about the conditions under which it does so equitably and effectively. Answering those questions will require sustained investment in research, pilots, and honest evaluation — and critically, funder collaboration. The questions outlined here span relationship design, instructional coherence, access infrastructure, and equity of participation. No single funder's strategy is likely to encompass all of them, nor should it. But together, a coordinated field of funders — each contributing to different pieces of the puzzle — can build the evidence base that practitioners, product developers, and policymakers need to make AI-enabled tutoring work for the students who need it most.

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