

High-Impact Tutoring in K-12

A Comprehensive Literature Review



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Summary

High-impact tutoring, also referred to as high-dosage tutoring, has emerged as one of the most effective interventions in K-12 education, particularly in the aftermath of COVID-19-related learning disruptions. Defined by intensive, frequent one-on-one or small-group sessions delivered by trained tutors during the school day, high-impact tutoring consistently generates large learning gains across grade levels and subject areas. This literature review examines the empirical evidence on high-impact tutoring in U.S. K-12 settings, synthesizing findings from meta-analyses, randomized controlled trials (Randomized Controlled Trial), and quasi-experimental studies. Evidence from Nickow et al. (2024) and others indicates average effect sizes of approximately +0.37 standard deviation (SD), translating to three to five additional months of learning per year. Key studies of reading programs (e.g., Reading Partners, Reading Recovery) and mathematics interventions (e.g., Saga Education’s Chicago model) demonstrate substantial gains in literacy and numeracy outcomes, including improved course pass rates and overall grade point average (GPA). The review also discusses the critical role of implementation fidelity, explores challenges in scaling tutoring programs, and provides an annotated bibliography of key works alongside a curated set of practical resources and toolkits for educators and policymakers.

Introduction

Educators and policymakers are increasingly turning to high-impact tutoring as a strategy to accelerate learning and close achievement gaps, particularly in the wake of COVID-19 learning disruptions (Loeb et al., 2021; National Education Association [NEA], 2024). High-impact tutoring, which is also called high-dosage tutoring, refers to an intensive form of instructional support characterized by one-on-one or small-group sessions held multiple times per week with a consistent, well-trained tutor (National Student Support Accelerator [NSSA], 2021a, 2021b). Unlike traditional homework help or infrequent tutoring arrangements, high-impact tutoring is built into the school schedule and is tailored to individual student needs, supplementing regular classroom instruction rather than replacing it (NSSA, 2021b).

This review examines high-impact tutoring in U.S. K-12 settings, describing its key features and summarizing two decades of empirical evidence on its effectiveness. The focus here is on peer-reviewed and experimental studies that evaluate the impact of high-impact tutoring on academic outcomes such as test scores, grades, and graduation rates, as well as longer-term outcomes including college enrollment and persistence. The review also incorporates descriptive research on implementation and context and provides a resource section highlighting practical tools from credible organizations, including Harvard’s Strategic Data Project (SDP) and others, to guide high-impact tutoring efforts.

What Is High-Impact Tutoring?

High-impact tutoring is defined by specific model elements that distinguish it from less intensive tutoring approaches. According to the National Student Support Accelerator (NSSA, 2021a), high-impact tutoring programs demonstrate significant gains in student learning through rigorous studies or embody the characteristics known to accelerate learning (NSSA, 2021a, 2021b). Five key features characterize well-designed programs:

1. Frequency and Duration

Sessions occur at least three times per week for 30 to 60 minutes and continue for a semester or, preferably, the full school year (NSSA, 2021b). This level of weekly contact time is critical for impact. Research suggests that increasing session frequency from three days to four or five days per week nearly doubles effect sizes, with some studies reporting increases from approximately 0.28 to 0.48 standard deviations (J-PAL [Abdul Latif Jameel Poverty Action Lab], 2023).

2. Small Group Size

Tutoring is delivered one-on-one or in very small groups. Most programs use a 1:1 or 1:2 tutor-to-student ratio and generally serve no more than three students per tutor (NEA, 2024; NSSA, 2021b). This structure enables individualized attention. Meta-analyses indicate that one-on-one formats produce larger learning gains (around +0.46 SD) compared to groups of three or more (around +0.25 SD; J-PAL, 2023).

3. Trained, Consistent Tutors

Tutors are well-trained and often receive ongoing coaching (NSSA, 2021b). They may be certified teachers, paraprofessionals, college graduates, or other trained adults, but in all cases, they use high-quality instructional methods. Students work with the same tutor each session, which allows a strong tutor–student relationship to form over time (NEA, 2024; NSSA, 2021a). Sustained, caring relationships are seen as a foundation for trust and engagement and are associated with gains in student confidence and motivation.

4. Integration with School Curriculum

High-impact tutoring aligns with classroom content and grade-level standards (NEA, 2024; NSSA, 2021a). In well-designed programs, tutoring occurs during the school day as a class period or elective rather than as an optional after-school activity. This scheduling approach ensures higher attendance and easier coordination with classroom teachers. Research indicates that programs held during the school day show substantially larger effects than voluntary after-school programs (Hechinger Report, 2023; J-PAL, 2023). Alignment with the core curriculum also means tutors can reinforce foundational skills while simultaneously supporting students in their current coursework (Hechinger Report, 2023).

5. Data-Driven Personalization

Effective tutoring programs use data to diagnose learning gaps and monitor student progress throughout the intervention (NSSA, 2021b). Tutors rely on formative assessments to adjust instruction for each student’s specific needs (NSSA, 2021a). Instruction is typically guided by a structured curriculum or lesson plans that allow for individualization. This targeted approach, which focuses on teaching students at their current skill level, is considered a key mechanism for the outsized learning gains observed in high-quality tutoring programs (Hechinger Report, 2023; J-PAL, 2023).

When these pillars are in place, high-impact tutoring stands in sharp contrast to more sporadic tutoring models. As one education leader has noted, the approach is not once-a-week homework help (Hechinger Report, 2023). It is a highly organized, intensive intervention implemented with fidelity. In practice, a well-designed program might involve tutors working with one or two students at a time during the school day, using a research-based curriculum, building a sustained rapport with their students, and providing individualized support on specific reading or math skills that complements what students are learning in class. The evidence supporting this model is reviewed in the sections that follow.

Evidence of Effectiveness on Academic Outcomes

High-impact tutoring stands among the most effective interventions documented in K-12 education research (Hechinger Report, 2023; Loeb et al., 2021). Multiple literature reviews and meta-analyses conducted over the past 20 years consistently find that well-designed tutoring programs produce large learning gains for students, often exceeding the effects of most other educational interventions by a wide margin. The sections below summarize these findings, beginning with over-arching meta-analytic evidence before turning to key experimental studies in reading and mathematics.

Overall Impact: Findings from Meta-Analyses

“One year of high-impact tutoring is associated with roughly three to five additional months of learning beyond what the average student would otherwise achieve.”
— Harvard SDP & Accelerate, 2025

A series of rigorous reviews has quantified the average impact of tutoring across dozens of studies. Nickow et al. (2020, 2024) conducted a comprehensive meta-analysis of 96 randomized controlled trials of tutoring programs in prekindergarten (pre-K) through grade 12 settings (Hechinger Report, 2023; J-PAL, 2023). The authors found an average effect size of approximately +0.37 standard deviations on student achievement (J-PAL, 2023). In practical terms, a student at the 50th percentile in achievement could expect to move to approximately the 66th percentile after participating in a well-implemented tutoring program (J-PAL, 2023). Put another way, one year of high-impact tutoring is associated with roughly three to five additional months of learning beyond what the average student would otherwise achieve (Harvard SDP & Accelerate, 2025). These are substantial effects in the context of education research, where most class-size reductions and instructional interventions yield far more modest gains. A separate meta-analysis by Dietrichson et al. (2017) focusing on historically underserved elementary and middle school students similarly identified tutoring as producing among the largest effects on achievement compared to other interventions examined (Loeb et al., 2021).

The benefits of tutoring appear across subjects and grade levels, though the magnitude of effects varies by context. Tutoring in early literacy tends to be especially effective. Programs targeting beginning readers in pre-K through 1st grade show very large impacts, often in the range of +0.40 to +0.50 SD on foundational reading skills (J-PAL, 2023), and reading-focused tutoring in early grades has been associated with more than five additional months of learning in a single year (Hechinger

Report, 2023). Tutoring in mathematics shows similarly powerful effects in upper elementary and middle school, with one review reporting effect sizes around +0.44 SD for math programs in grades 2 through 5 (J-PAL, 2023). Evidence from high school mathematics interventions is discussed in a later section.

The characteristics of the tutoring program itself also matter. Tutoring delivered by certified teachers tends to produce the largest impacts, averaging around +0.40 SD, and programs using paraprofessionals or paid teaching assistants show results only slightly lower (J-PAL, 2023). Programs relying on volunteer or nonprofessional tutors tend to show more modest effects, averaging approximately +0.20 SD (J-PAL, 2023). This gap likely reflects differences in training and instructional quality, although well-structured, volunteer-based programs with strong curriculum and oversight have demonstrated meaningful effects, as the Reading Partners evaluation illustrates. Scheduling also matters considerably: the Nickow et al. meta-analysis found that in-school tutoring programs had roughly double the effect of after-school programs (approximately +0.40 vs. +0.20 SD; J-PAL, 2023). After-school programs frequently suffer from lower attendance and student fatigue, while in-school programs ensure more consistent participation (Hechinger Report, 2023).

Impacts on Reading Achievement (K-5)

The evidence that high-impact tutoring improves reading outcomes for struggling students is particularly well established at the elementary level. A landmark example is the Reading Partners program, evaluated in a large-scale randomized controlled trial by Jacob et al. (2014). Reading Partners deploys community volunteers to provide twice-weekly, one-on-one tutoring to elementary students who are below grade level in reading. In a randomized trial across 19 schools involving 1,265 students, the program produced statistically significant improvements on three measures of reading proficiency, including reading comprehension, sight-word efficiency, and passage fluency, relative to students in the control group (Jacob et al., 2014). Effect sizes were modest, ranging from approximately +0.10 to +0.18 SD across outcomes, but meaningful given that tutors were volunteers and sessions occurred only twice per week. The MDRC evaluation concluded that Reading Partners was implemented with high fidelity at scale and demonstrated that a volunteer-driven tutoring model can serve as an effective tool for improving literacy in historically underserved schools (Jacob et al., 2014).

Programs using highly trained tutors or certified teachers have shown even larger reading impacts. Reading

KEY CONCEPT

What is an effect size?

An effect size is a number that tells you how big a difference a program actually made — not just whether it worked, but how much.

Think of it like this: if two students both got taller this year, the effect size is what tells you whether one grew an inch or a foot.

A QUICK RULE OF THUMB

0.2 — SMALL *a modest nudge*

0.5 — MEDIUM *clearly noticeable*

0.8 — LARGE *a substantial impact*

In education research, an effect size of even 0.2 or 0.3 is considered meaningful — so high-impact tutoring results often stand out.

Recovery, which provides one-on-one tutoring by specially trained teachers to 1st graders with the lowest literacy levels, has reported effect sizes in the range of +0.30 to +0.50 SD in both experimental and quasi-experimental studies. An i3 scale-up evaluation found significant gains in reading achievement among 1st graders following 12 to 20 weeks of daily 30-minute Reading Recovery sessions (May et al., 2016). The high cost of the model has historically limited its reach (Jacob et al., 2014), generating interest in more cost-effective approaches that preserve the instructional intensity.

A recent example of such an approach appears in Cortes et al. (2025), which tested a scalable early literacy tutoring model in a large urban district. In a randomized trial with 818 kindergarteners, part-time tutors were embedded in classrooms to deliver short, one-on-one tutoring sessions of 10 to 15 minutes focused on foundational reading skills, using a computer-supported curriculum (Cortes et al., 2025). Despite the brief format, students assigned to the program were more than twice as likely to reach grade-level reading benchmarks by year’s end (70% vs. 32%), and they scored +0.23 SD higher in oral reading fluency than control group students (Cortes et al., 2025). The authors describe the results as promising evidence of an affordable and sustainable approach to high-impact tutoring in the early grades (Cortes et al., 2025), which has implications for districts looking to serve more students within existing resource constraints.

Impacts on Math Achievement (Upper Elementary, Middle, and High School)

While tutoring has a long history in reading intervention, a compelling body of experimental evidence has accumulated over the past decade showing that high-impact tutoring can also generate substantial gains in mathematics for older students. The prevailing assumption that it might be too late to close large math gaps by middle or high school has been challenged by recent rigorous studies.

The most prominent example is the work of Guryan et al. (2023) in the Chicago Public Schools. In two large Randomized Controlled Trials involving more than 2,600 students, historically underserved 9th and 10th graders were assigned to a daily math tutoring period during the school day provided by Saga Education, replacing an elective course (Hechinger Report, 2023). Each tutor worked with two students at a time for approximately 45 to 50 minutes per session on tailored math practice aligned to their current skill gaps. Students in the tutoring condition achieved math test score gains of +0.18 to +0.40 SD depending on the cohort and assessment (Guryan et al., 2023). These are exceptionally large effects for high school interventions. Tutored students also earned significantly higher math grades and overall GPAs and were substantially more likely to pass their math courses than their peers in the control group (Guryan et al., 2023; J-PAL, 2023). One analysis reported that the tutoring group’s math course pass rate was more than 50% higher than that of the control group (J-PAL, 2023). Importantly, gains persisted in subsequent school years, suggesting that students retained and built upon what they had learned (Guryan et al., 2023). The authors noted that the benefit-to-cost ratio of this tutoring approach was comparable to many successful early-childhood programs (Guryan et al., 2023).

The equity implications of these findings deserve particular attention. The program largely served minority and historically underserved students in some of Chicago’s lowest-performing high schools. One analysis found that the intensive tutoring program narrowed the math score test gap between white students and Black students in Chicago by roughly one-third

in a single year (NSSA, 2021b), representing a remarkable pace of gap closure and underscoring tutoring’s potential as an equity tool. Researchers estimated that tutored students gained the equivalent of one to two additional years of math learning beyond what the typical student achieved during that school year (J-PAL, 2023).

Not all math tutoring programs produce comparable results, which reinforces the importance of adhering to high-impact design principles. A randomized trial of the Minnesota Math Corps, which used AmeriCorps volunteers to tutor 4th through 8th graders in math, found no statistically significant effect on state math test scores after one year (Arnold Ventures, 2022). Students in that program received approximately 71 minutes of tutoring per week (Arnold Ventures, 2022), a dosage level likely insufficient relative to the daily sessions in Chicago. The contrast between these findings highlights that tutoring must be implemented with sufficient intensity and fidelity to produce meaningful results (Hechinger Report, 2023).

Other Student Outcomes (Grades, Attendance, and Social-Emotional Skills)

Most tutoring research has focused on test scores and academic proficiency, but some studies have examined additional outcomes including course grades, credit accumulation, attendance, and social-emotional indicators. High-impact tutoring frequently improves course performance and progression metrics, which are consequential for students’ long-term academic trajectories. Beyond test scores, the Chicago high school tutoring program produced higher overall GPA (an average increase of approximately 0.58 points on a 4.0 scale) and reduced course failure rates (J-PAL, 2023). Because passing 9th grade math is one of the strongest known predictors of on-time high school graduation, improvements in course pass rates may have downstream effects on graduation that are not yet fully captured in the available follow-up data (NSSA, 2021b).

The relational dimension of tutoring also appears to support students’ attitudes and engagement. Qualitative feedback and some studies indicate that students receiving high-impact tutoring show improved self-confidence, greater engagement with the subject matter, and stronger academic motivation (NSSA, 2021b). The consistent encouragement and mentorship provided by tutors can foster a growth mindset and a sense of self-efficacy, with spillover effects on classroom behavior and performance in other subjects (NSSA, 2021b). Some programs have formally integrated social-emotional or mentoring components alongside academic content. A Chicago study that combined math tutoring with a behavioral intervention found not only academic gains but also reductions in disciplinary incidents and absenteeism (Cook et al., 2014), though the dual-component design makes it difficult to attribute those effects to tutoring alone.

Longer-Term Outcomes: High School Graduation and College Success

Direct evidence on longer-term outcomes such as high school graduation, college enrollment, and college persistence remains limited because many current high-impact tutoring initiatives are relatively recent. Most available studies track outcomes through the end of the tutoring year or for a short period afterward. That said, the theoretical case for long-term benefits is strong, supported by well-established relationships between the intermediate outcomes improved by tutoring and eventual educational attainment.

The connections between early skill development and long-term outcomes are well documented. Students who read proficiently by the end of 3rd grade are four times more likely to graduate from high school than those who do not (NSSA, 2021b). Effective tutoring in the early grades moves students into the proficient reader category, placing them on a stronger academic trajectory. Similarly, 9th grade course performance is among the strongest predictors of high school completion and college enrollment, and research suggests that students who accumulate failing grades in 9th grade are at substantially elevated risk of dropout (NSSA, 2021b). The large gains in 9th grade math pass rates documented in Chicago provide reason to anticipate long-term benefits, although full graduation and college enrollment data for those cohorts are not yet available.

Some indirect evidence on college outcomes comes from the broader literature showing that test score and GPA improvements are associated with higher rates of college attendance and adult earnings (Chetty et al., 2011). This suggests that the achievement gains produced by high-impact tutoring should, in principle, translate into better post-secondary outcomes over time. As state-funded tutoring initiatives scale up and mature, opportunities to track long-term metrics will expand. Several programs are now designed with multi-year follow-up built into their evaluation plans, and those findings will be important for assessing the full return on investment in tutoring as a systemic strategy.

Implementation Challenges and Context

The efficacy of high-impact tutoring is well established, but implementing these programs at scale involves significant practical challenges. Early adopters and researchers have identified a range of barriers and lessons learned in scaling tutoring within real-world school systems (Loeb et al., 2021).

“The SES experience makes clear that the availability of tutoring is not sufficient on its own; the design and delivery of the program determine whether students actually benefit.”

An instructive historical example comes from the Supplemental Educational Services (SES) program under the No Child Left Behind Act (No Child Left Behind) (2001 to 2015). SES offered free tutoring to students identified as low-income in underperforming schools, funded with federal dollars but delivered by private providers operating primarily after school. Despite its promise, national evaluations found that SES had minimal overall impact on student outcomes (Loeb et al., 2021).

Researchers attribute this largely to implementation failures: tutoring often did not follow a high-impact model, group sizes were large, curricula varied widely, and quality was uneven (Heinrich et al., 2014). Several SES sessions involved students sitting in large, homework-help style groups rather than receiving genuine one-on-one or small-group tutoring (Heinrich et al., 2014). Participation was also low because the opt-in structure required active parent enrollment and sessions were held after school, resulting in inconsistent attendance (Heinrich et al., 2014). The SES experience makes clear that the availability of tutoring is not sufficient on its own; the design and delivery of the program determine whether students actually benefit.

Current high-impact tutoring initiatives are designed to address these limitations. Unlike SES, many programs now automatically enroll eligible students and provide sessions during the school day, which substantially improves attendance and reduces barriers to participation (Loeb et al., 2021). Nevertheless, scaling these programs raises a distinct set of challenges. Based on interviews with seven school districts and 12 tutoring providers, Loeb et al. (2021) identified five recurring implementation barriers.

1. Scheduling and Logistics

Finding consistent time in the school schedule for tutoring without displacing core instruction or other student services is one of the most commonly reported challenges (Loeb et al., 2021). Schools have pursued a range of creative solutions, including using homeroom periods, elective blocks, or extended-day time. Managing logistics across dozens of school sites adds a layer of complexity that requires strong central coordination.

2. Tutor Recruitment and Training

Scaling a tutoring program requires recruiting and retaining large numbers of qualified tutors. Many districts have partnered with AmeriCorps or university programs to build a tutor pipeline, but sustaining that pipeline is an ongoing challenge. High tutor turnover threatens program stability and disrupts the tutor-student relationships that are central to the model's effectiveness.

3. Curriculum and Materials

Selecting or developing high-quality instructional materials that align with state standards and district curricula is foundational to program quality (NEA, 2024). Some programs have developed structured lesson sequences or technology-supported curricula to guide tutors and ensure consistency. This work is resource-intensive upfront but pays dividends in instructional coherence.

4. Data Systems and Monitoring

Effective tutoring programs generate substantial data needs, including student diagnostic results, session attendance records, and ongoing progress monitoring. Many districts lack the data infrastructure to efficiently track tutoring implementation and outcomes. The Harvard Strategic Data Project's tutoring data toolkit, described in the next section, was developed in direct response to this gap (Harvard SDP & Accelerate, 2025).

5. Funding and Sustainability

High-impact tutoring is resource-intensive to operate. Cost estimates range from approximately \$2,500 to \$4,000 per student per year for daily 1:1 or 1:2 tutoring, depending on the tutor staffing model (NEA, 2024). The majority of current programs have been funded through one-time federal COVID relief dollars, and district and state leaders are actively grappling with how to sustain tutoring at scale when those funds expire. Strategies under consideration include reallocating existing intervention funds, braiding multiple funding streams, and making the case for new public investment based on documented program impact.

Despite these challenges, many states and districts are pressing forward with ambitious tutoring initiatives. The U.S. Department of Education has encouraged states to use federal relief funds to expand high-impact tutoring as a priority strategy for learning recovery (NEA, 2024). This federal backing has supported program growth in large urban districts as well as statewide efforts in Tennessee, Texas, Arkansas, and other states. Organizational infrastructure to support implementation is also growing. Accelerate, a national nonprofit launched in 2022, works with states to scale evidence-based tutoring through grants, technical assistance, and peer learning opportunities (Harvard SDP & Accelerate, 2025). The National Student Support Accelerator at Brown University has convened networks of districts and produced planning tools and quality standards to support program design and continuous improvement (Loeb et al., 2021; NSSA, 2021b). These collaborative efforts reflect broad recognition that sustained scale will require coordination and shared infrastructure.

Tools and Resources for High-Impact Tutoring

Designing and implementing a high-impact tutoring program is complex work, and practitioners benefit from concrete guidance grounded in research and field experience. Several organizations have developed toolkits, guides, and resources to support this work. The following is a curated selection of resources relevant to K-12 educators and policymakers.

Harvard Strategic Data Project: High-Dosage Tutoring Data Toolkit (2025)

Harvard’s SDP, in partnership with the national nonprofit Accelerate, developed a comprehensive toolkit to help education agencies measure and monitor their tutoring programs (Harvard SDP & Accelerate, 2025). The toolkit, titled *Measure, Monitor, Improve: Data Tools for Understanding High-Dosage Tutoring Implementation*, addresses common data challenges that states and districts encounter when rolling out tutoring at scale (Harvard SDP & Accelerate, 2025). It includes a data dictionary that defines core metrics, a data collection protocol with step-by-step guidance, a data collection tool template, and a dashboard template for visualizing trends, along with state case studies from Arkansas, Colorado, Delaware, Louisiana, and Ohio (Harvard SDP & Accelerate, 2025). This free toolkit is a practical resource for administrators seeking to use data systematically to improve program quality.

National Student Support Accelerator: District Playbook and Quality Standards

The NSSA offers a comprehensive set of resources for program designers and district leaders. The *District Playbook for High-Impact Tutoring* is a detailed guide covering the full arc of program development, from needs assessment and program design through tutor recruitment, training, stakeholder engagement, and continuous improvement (NSSA, 2021b). The NSSA has also published Tutoring Program Quality Standards that outline best practices and benchmarks for program design, including recommended tutor-to-student ratios, session frequency, and curriculum alignment. All resources are freely available on the NSSA website.

Education Trust: State Guidance for High-Impact Tutoring

The Education Trust has produced policy guidance for state leaders on implementing tutoring as an equity strategy. The *State Guidance for High-Impact Tutoring (2021)* document highlights lessons from states that have launched statewide initiatives with clear dosage and quality standards. It offers recommendations on the use of federal funds, criteria for targeting the students most in need, and strategies for ensuring programs are evidence-based and equitably implemented.

National Education Association: Advocacy and Implementation Support

The NEA has partnered with NSSA to promote high-impact tutoring and has published accessible summaries of the research evidence for educators and school board members (NEA, 2024). These materials highlight the core elements of effective programs and document success stories that can support advocacy efforts. They also convey federal endorsement of tutoring as a priority strategy for learning recovery (NEA, 2024).

Accelerate: Implementation Tools and Funding Guidance

Accelerate has published practical resources on sustainability, including *Funding High-Impact Tutoring for the Long Term*, which details how districts can leverage federal grants and other funding streams to support tutoring beyond the initial relief funding period (Accelerate, 2023). Accelerate also facilitates a community of practice among participating states and documents common implementation challenges and solutions encountered in the field.

Taken together, these resources offer a practical roadmap for translating the research evidence on high-impact tutoring into effective programs on the ground. They address the full range of implementation considerations, from data management and instructional quality to funding strategy and stakeholder engagement, and they draw on both rigorous research and real-world implementation experience.

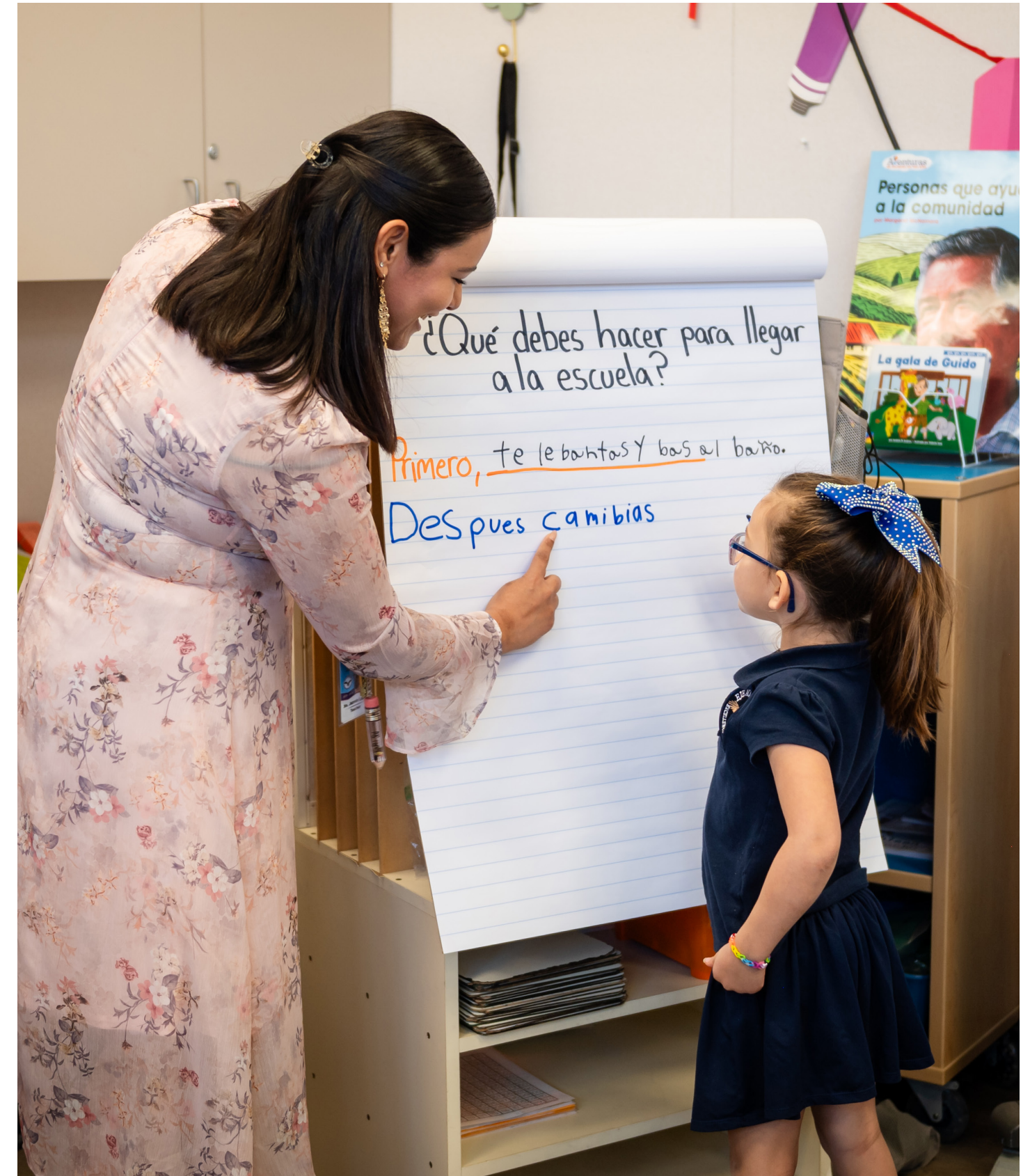
Conclusion

Over the past two decades, high-impact tutoring has emerged as a consistently effective strategy for improving educational outcomes in K-12 schools. Experimental and quasi-experimental evidence from a growing body of studies indicates that when tutoring is delivered with sufficient frequency, intensity, and quality, it produces learning gains that exceed those of most other educational interventions. Students who receive high-impact tutoring have consistently outperformed comparison peers in reading and math achievement, in many cases advancing multiple grade levels in a single school year (Guryan et al., 2023; J-PAL, 2023). These patterns hold across grade levels and subject areas, and the evidence is particularly compelling for programs serving historically underserved students (NSSA, 2021b).

The evidence also makes clear that implementation quality is not incidental to these outcomes but is central to them. Tutoring produces large effects when programs maintain small group sizes, schedule sessions during the school day, employ well-trained and consistent tutors, use structured curriculum, and rely on data to individualize instruction (NEA, 2024; NSSA, 2021b). Programs that do not adhere to these elements, whether because dosage is insufficient, tutor quality is uneven, or attendance is unreliable, tend to show substantially smaller or null effects (Arnold Ventures, 2022; Hechinger Report, 2023). The distinction matters for practice: the label of high-impact tutoring should be reserved for programs that actually embody the design features the evidence supports.

In addition to improving test scores and grades, high-impact tutoring supports students' broader academic trajectories. Programs that build early literacy skills and algebra readiness position students for long-term success, including higher rates of high school graduation and college access (NSSA, 2021b). The relational dimension of tutoring can also foster student confidence and academic engagement, producing benefits that extend beyond the tutored subject (NSSA, 2021b). These considerations reinforce the case for investing in high-quality implementation rather than simply expanding access to any form of tutoring support.

The period following the COVID-19 pandemic has seen unprecedented investment in tutoring at federal, state, and local levels, backed by a robust and growing research base. Scaling these programs to reach the students who need them most will require sustained attention to funding, staffing, training, and data infrastructure. The historical lessons from initiatives like No Child Left Behind's Supplemental Educational Services program provide clear guidance on the pitfalls to avoid. The toolkits, quality standards, and support organizations described in this review provide practical infrastructure for doing this work well. With continued research, thoughtful implementation, and commitment to evidence-based practice, high-impact tutoring has the potential to meaningfully reduce achievement gaps and expand educational opportunity for students across the K-12 continuum.



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Annotated Bibliography

The following annotations provide additional context on the methodology, findings, and contributions of the key sources cited in this literature review.

Nickow, A. J., Oreopoulos, P., & Quan, V. (2024). The promise of tutoring for pre-K-12 learning: A systematic review and meta-analysis of the experimental evidence. *American Educational Research Journal*.

This comprehensive meta-analysis of 96 Randomized Controlled Trials quantifies the overall impact of tutoring interventions on student achievement. The authors find an average effect size of approximately 0.37 standard deviations, which corresponds to moving a student from the 50th to the 66th percentile in achievement. The analysis also examines how effects vary by program characteristics, finding that tutoring by certified teachers or paraprofessionals tends to yield larger gains (approximately 0.40 SD) than volunteer or parent tutoring (approximately 0.20 SD), and that programs delivered during the school day outperform after-school programs. Effects are particularly strong in early grades for reading and remain meaningful for older students in mathematics. This paper provides a foundational evidence base establishing high-impact tutoring as one of the most effective educational interventions available.

Guryan, J., Ludwig, J., Bhatt, M. P., et al. (2023). Not too late: Improving academic outcomes among adolescents. *American Economic Review*, 113(3), 738-765.

This article reports on two large-scale Randomized Controlled Trials of a high-dosage math tutoring program for 9th and 10th graders in Chicago. The tutoring, provided by Saga Education, offered daily 1-on-2 math instruction during an elective period. Treated students' math test scores increased by 0.18 to 0.40 standard deviations, and their math grades and overall GPA improved significantly relative to the control group. Gains persisted in the year following the tutoring intervention. The authors also discuss cost-effectiveness, noting results comparable to many successful early-childhood programs. This study is a pivotal contribution because it challenges the assumption that remedial academic intervention for high school students is largely ineffective and provides strong evidence that high-impact tutoring can narrow racial and ethnic achievement gaps in secondary settings.

Jacob, R. T., Armstrong, C., Willard, J., et al. (2014). *Reading partners: The implementation and effectiveness of a one-on-one tutoring program delivered by community volunteers*. MDRC.

This evaluation of the Reading Partners program is a large Randomized Controlled Trial involving 1,265 students across 19 schools in three states. The study finds statistically significant positive impacts on three measures of reading ability: comprehension, fluency, and sight-word efficiency. Effect sizes ranged from approximately 0.10 to 0.16 SD, which are modest but meaningful given the volunteer-driven model. The report also documents that the program was implemented with a high degree of fidelity and that students received an average of approximately 28 tutoring sessions during the school year. This study is important for demonstrating that tutoring can be effective when delivered by nonprofessional tutors, provided there is a structured curriculum and adequate coordinator support. It also demonstrates that volunteer-based programs can be replicated across multiple sites without loss of effectiveness.

Cortes, K. E., Loeb, S., & Robinson, C. D., et al. (2025). A scalable approach to high-impact tutoring for young readers. *Learning and Instruction*, 95, 102021.

This article presents results from an Randomized Controlled Trial of an early literacy tutoring program in a large urban district. The program embedded part-time tutors in kindergarten classrooms to deliver frequent, short one-on-one tutoring sessions of five to 10 minutes each, multiple times per week, focusing on foundational reading skills. After one school year, students who received the tutoring were twice as likely to reach grade-level reading benchmarks (70% vs. 32%) and scored 0.23 SD higher on oral reading fluency. The authors conclude that an affordable, scalable tutoring model can produce meaningful literacy gains in early grades, which has practical implications for districts looking to serve more students without a proportional increase in resource investment.

Loeb, S., Fricke, H., Kalogrides, D., & Lafortune, J. (2021). *Early lessons from implementing high-impact tutoring at scale*. National Student Support Accelerator, Annenberg Institute at Brown University.

This qualitative report documents insights from interviews with seven school districts and 12 tutoring providers that launched tutoring programs from 2020 to 2021. It identifies recurring barriers to implementation at scale, including scheduling constraints, tutor recruitment and training challenges, curriculum alignment, and data system limitations. The report situates the current tutoring expansion in contrast to the No Child Left Behind-era SES program and highlights key differences in program design, particularly the shift to school-day delivery and automatic student enrollment. This source is valuable for its practitioner perspective. It bridges the gap between efficacy research and operational reality, offering lessons that are directly applicable to state and district program designers.

Heinrich, C. J., Meyer, R. H., & Whitten, G. (2014). Supplemental educational services under No Child Left Behind: Who signs up, and what do they gain? *Educational Evaluation and Policy Analysis*, 36(3), 273-297.

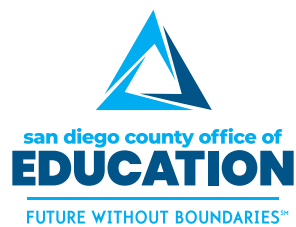
This peer-reviewed study evaluates the SES tutoring program using data from multiple large districts. It finds low participation rates overall and small to negligible effects on student achievement in most sites. The authors identify after-school timing, inconsistent provider quality, and poor curriculum alignment with school instruction as key contributors to the limited impact. A particularly significant finding is that many SES sessions operated as large-group remedial classes rather than true tutoring. This study functions as an important cautionary reference in the high-impact tutoring literature. Its findings motivate many of the design standards central to contemporary high-impact tutoring models, including the emphasis on school-day delivery, automatic enrollment, and vetted provider quality.

Harvard Strategic Data Project & Accelerate. (2025). *Measure, monitor, improve: Data tools for understanding high-dosage tutoring implementation* [Toolkit]. Harvard University.

This practitioner-focused toolkit was developed by Harvard's Strategic Data Project in partnership with Accelerate and is informed by case studies from five state education agencies. The toolkit addresses the implementation monitoring dimension of tutoring, providing states and districts with tools to systematically collect and use data for program improvement. Core components include a data dictionary defining key metrics, a data collection protocol, and a dashboard template for tracking program performance. State case studies illustrate how these tools have been applied in practice. The toolkit is significant because it provides concrete infrastructure for answering the operational questions that program leaders need to address: which students are being served, whether they are receiving the intended dosage, and where bottlenecks exist in the system.

National Student Support Accelerator. (2021b). *High-impact tutoring: District playbook*. Stanford University.

The NSSA District Playbook is a comprehensive guide that synthesizes research and practical guidance on implementing high-impact tutoring in K-12 schools. Rather than a single empirical study, it draws on multiple research findings and field experience to offer step-by-step guidance across the full program development cycle, from goal setting and student identification through model design, tutor recruitment, scheduling, professional development, stakeholder engagement, and evaluation. The playbook emphasizes adherence to the core elements of high-impact tutoring that are associated with strong outcomes in the research literature. As a resource, it serves as a bridge between evidence and practice, offering actionable guidance for education leaders working to move from intention to effective implementation.



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