High-Quality Tutoring to Accelerate Learning: Research Evidence and Best Practices

September 22, 2021
Regional Educational Laboratory West

- Conduct applied research
- Provide technical support around data collection, evidence use, and research
- Facilitate dissemination of actionable research evidence
Series: High-Quality Tutoring to Accelerate Learning

Today: Research Evidence and Best Practices

October 14: Implementing and Improving Your Program

November 17: Deep Dive into Literacy and Mathematics

And a related webinar hosted by REL Northeast and Islands:

October 4: Using Data to Strengthen Your High-Dosage Tutoring Program: Lessons from a Rhode Island District
Today’s Presenters

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Agenda

• Overview of Meta-Analysis on Tutoring and Implications
• A Case Study of High-Dosage 9th Grade Algebra Tutoring
• Panel: Implementation Considerations
• Audience Questions
• Closing and Survey
Goals

Participants will:

- Learn about the research on high-quality tutoring
- Explore critical questions to ask when assessing local conditions and planning for implementation of tutoring
- Hear examples of best practices in tutoring, as applied through one program and in practice in one district
- Have an opportunity to ask questions and receive resources to guide their own work
Outcomes of Meta-Analysis on Tutoring: Strengths and Characteristics of the Evidence

Kimberly Dadisman  
J-PAL North America

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J-PAL North America
Tutoring as an Effective Strategy to Address COVID Unfinished Learning in K-12 Settings

Kimberly Dadisman
Vincent Quan
Our mission is to **reduce poverty** by ensuring that **policy** is informed by **scientific evidence**.
Why Tutoring?

- Millions of US students are behind grade level
- Falling behind early impacts students into adulthood
- Students of color and students from low-income communities are more likely to fall behind and to attend under-resourced schools lacking sufficient student supports
- COVID-19 has exacerbated these issues, pushing students further behind and widening race- and income-based educational gaps

(Dorn et al., 2020; Nickow et al., 2020; Robinson et al., 2021; U.S. Department of Education, 2021)
Technical Features of Meta-Analysis

- Analyzed 96 randomized evaluations
- Studies were included if...
  - They had a non-tutoring control group
  - The evaluated tutoring program was implemented at preschool-secondary schools
  - The researchers included academic learning as an outcome variable
  - They were published after 1980 and presented necessary data to compute effect sizes
- Studies were excluded if...
  - The evaluation focused on peer and cross-age tutoring programs
The Results: Big Picture

Tutoring programs consistently led to large improvements in learning outcomes for students

(Nickow et al., 2020)
Key Elements of Effective Tutoring

- Evidence identifies tutoring as one of the most impactful tools to improve student learning.
- Analyses identified key elements to consider:
  - Tutor type
  - Program delivery
  - Grade level / Subject combinations

(Nickow et al., 2020)
What the Evidence Says: Tutors

Evidence points to professional tutors—tutors that are trained, supervised, and paid—as a highly effective tutor group

- 45 studies employed professional tutors, 19 studies employed certified teachers, 24 studies used volunteer tutors

(Nickow et al., 2020)
What the Evidence Says: Program Delivery

Evidence suggests that tutoring is most effective when it occurs:

- **At school during the school day**
  - 78 studies included programs offered during the school day; 43 were led by professional tutors

- **Three times a week** (or more for preschool – first graders)
  - 79 studies offered tutoring at least 3 days per week

- **In one-on-one sessions** for younger students, and in **small groups** for older students
  - 35 studies had a 1:1 tutor to student ratio for first grade students, compared to 4 studies of tutoring in grades 6–11

(Nickow et al., 2020)
What the Evidence Says: Grades and Subjects

Reading tutoring is relatively more effective for the youngest students, while math tends to be more effective later in elementary school

- 76 studies focused on literacy and 26 focused on math

(Nickow et al., 2020)
<table>
<thead>
<tr>
<th>Program</th>
<th>Key Elements</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota Reading Corps</td>
<td>Professional tutors with extensive training 1:1 tutoring for grades K–3 Daily sessions During school day Focus on reading as foundational skill</td>
<td>Students in grades K–3 who received MRC tutoring scored significantly higher on literacy assessments compared to the control group</td>
</tr>
<tr>
<td>Number Rockets</td>
<td>Professional tutors Small groups (2–4 students) 3 or more times per week During school day Focus on math in early elementary school (first grade)</td>
<td>Students who received Number Rockets scored significantly higher on the Test of Early Mathematics Ability (TEMA-3) compared to the control group</td>
</tr>
<tr>
<td>Experience Corps</td>
<td>Volunteers with extensive training 1:1 tutoring 2–4 times per week Focus on reading as foundational skill</td>
<td>Students who received EC showed improved passage comprehension and grade-specific reading skills compared to the control group</td>
</tr>
</tbody>
</table>
Defining Local Conditions

Data can be used to identify who is most in need of support, and effectively target funds and resources.

Data can help implementers understand:

- Which students are most behind, and in what areas
- Which districts have the highest population of students in need of tutoring
Generalizability Framework

Local Conditions

- Does the problem the original intervention solved also exist in your community?

General Lessons from Existing Evidence

- Are the underlying causes the same?
  - Yes → Y
  - No → N
- Do the important local conditions hold true in your context?
  - Yes → Y
  - No → N
- Is the underlying mechanism of change valid in your context?
  - Yes → Y
  - No → N
- Do the assumptions hold true?
  - Yes → Y
  - No → N

Local Implementation

- Can you implement the program with the critical elements in place?
  - Yes → Y
  - No → N
- Who would implement the program and do they have the capacity?
  - Yes → Y
  - No → N

Intervention Adaptations

- Will you replicate without changing key elements?
  - Yes → Y
  - No → N
- Limited capacity
- Intervention slightly modified
- Potential match
- Capacity building may be necessary

Replicate

Evaluation

No Match
Questions to Consider: Tutors

- Do schools or districts have the capacity to hire and train tutors?
  - Is there an existing potential pool of tutors?
  - Do funding streams and mechanisms exist to pay potential tutors?

- Do schools or districts have the capacity to contract with tutoring providers?
  - Who will ensure that providers maintain fidelity to the program?
Questions to Consider: Program Delivery

- What needs to be in place for schools to implement tutoring programs?

- Do schools have the space or scheduling capacity to implement tutoring during the school day?

- Are there sufficient tutors to meet the demand while keeping appropriate group sizes?
Questions to Consider: Grades and Subjects

- Can state test scores help determine which students (and what grade levels, which subjects) need greater support?

- Do schools have the capacity to administer additional assessments to help identify students in need of additional support?

- Are there foundational skills that need to be supported and/or are tutors providing support aligned with specific district curriculum?
Using Data and Measuring Progress

Just as data is necessary to define the issue, continual collection and assessment of data can help implementers understand a program’s impact and whether or not the program is working as intended.

- Some questions to consider:
  - Do districts have reliable systems to collect data on student progress and achievement? Is this data accessible?
  - What outcomes do you care about, and how will you measure them?
  - How will you coordinate with tutoring providers to measure impact?
  - Are school and district staff adequately trained to collect and maintain this data? Who will analyze the data to understand program impact?
Key Takeaways

- Students should meet with a consistent, paid, and trained tutor who is supported by ongoing oversight.
- Tutoring sessions should occur at schools during the school day.
- Tutoring should occur a minimum of three sessions per week.
- Tutoring sessions and materials should be informed by student data and academic standards.
Case Study of Best Practices: Daily, School-Embedded Tutoring

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Saga Education

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Saga Educaion
Gain equal to extra 1 to 2 years of extra math learning in one year

- Gain from SAGA
- 0.37 standard deviations
- 0.16 standard deviations

Average high school math test score gains per year:
- Study 1 (AY2013-14)
- Study 2 (AY2014-15)

(Cook et al., 2014; Ander, Guryan, & Ludwig, 2016)
Increased state math assessment pass rates

(Cook et al., 2014; Ander, Guryan, & Ludwig, 2016)
Reduced math course failures by as much as 63%.

(Cook et al., 2014; Ander, Guryan, & Ludwig, 2016)
Reduced non-math course failures by as much as 26%.

(Cook et al., 2014; Ander, Guryan, & Ludwig, 2016)
Our Approach

- Daily
- In-School
- Consistent Pairings
- Supportive Small Groups
- Collaboration with School Teachers
- Parent Communication
Selecting & Hiring Tutors

Rigorous selection process

- Application
- Phone Screen
- Math Assessment
- Mock Tutorial, Interview & Math Talk
- Regional leadership conversation
<table>
<thead>
<tr>
<th>Competencies</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Communicates Effectively</td>
<td>Developing and delivering multi-mode communications that convey a clear understanding of the unique needs of different audience</td>
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<td>Customer (Stakeholder) Focus</td>
<td>Building strong customer relationships and delivering customer-centric solutions</td>
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<tr>
<td>Interpersonal Savvy</td>
<td>Relating openly and comfortably with diverse groups of people</td>
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<tr>
<td>Nimble Learning</td>
<td>Actively learning through experimentation when tackling new problems, using both successes and failures as learning fodder</td>
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<td>Being Resilient</td>
<td>Rebounding from setbacks and adversity when facing difficult decisions</td>
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<td>Demonstrates Self-Awareness</td>
<td>Using a combination of feedback and reflection to gain productive insight into personal strengths and weaknesses</td>
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<td>Description</td>
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<tr>
<td>Action Oriented</td>
<td>Taking on new opportunities and tough challenges with a sense of urgency, high energy, and enthusiasm</td>
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<td>Collaborates</td>
<td>Building partnerships and working collaboratively with others to meet shared objectives</td>
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<tr>
<td>Courage</td>
<td>Stepping up to address difficult issues, saying what needs to be said</td>
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<tr>
<td>Values Differences</td>
<td>Recognizes the value that different perspectives and cultures bring to an organization</td>
</tr>
<tr>
<td>Instills Trust</td>
<td>Gaining the confidence and trust of others through honesty, integrity, and authenticity</td>
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Training

Site Director Training
- 3–5 weeks of pre-service training
- Weekly coaching and feedback from the Director of Programs
- Quarterly leadership training meetings

Tutor Training
- 3 weeks of pre-service training
  - Focus on Relationship Building, Academics (ratio & rigor), and High Expectations
- Weekly coaching and feedback from their Site Director
- Ongoing Professional Development at least once a month
- Quarterly cohort-based trainings
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<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
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<td>Welcome</td>
<td>Intro to Saga LP Part 2</td>
<td>Rigor</td>
<td>Collaborative Learning</td>
<td>Joy Factor</td>
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<tr>
<td>What does it mean to be a tutor Part 1</td>
<td>What does it mean to be a tutor Part 2</td>
<td>CFU</td>
<td>Analyzing Student Work</td>
<td>High Expectations</td>
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<tr>
<td>Educational Experience</td>
<td>Behavior Management Part 1</td>
<td>DN Review</td>
<td>Right Relationships Part 3</td>
<td>Implicit Bias</td>
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<tr>
<td>High Quality Tutorials</td>
<td>Behavior Management Part 2</td>
<td>Synch CFU</td>
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<td>Growth Mindset</td>
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<tr>
<td>Intentional Lesson Plan</td>
<td>Right Relationships Part 1</td>
<td>Differentiation</td>
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<td>Character &amp; Trust</td>
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<tr>
<td>Intro to Saga Curriculum</td>
<td>Right Relationships Part 2</td>
<td></td>
<td>Mock Tutorials</td>
<td>Implicit Bias/Growth Mindset/High Expectations</td>
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<tr>
<td>Intro to Foundational Skills</td>
<td>Right Relationships Virtually</td>
<td>Saga Connect</td>
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<td>Positive &amp; Professional Communication</td>
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<tr>
<td>Intro to Saga LP Part 1</td>
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If launching a program with your own tutors, lessons learned and support:

- Program Design
- Pre-service tutor and leadership training
- In-service coaching of tutor and leaders
- Fidelity Checks for implementation
- Saga Connect – virtual tutoring platform
- Saga Coach – basic tutor training portal
- Saga Curriculum – 6th grade math, Pre-Algebra, Algebra I & II, Geometry (released on a rolling basis)
Panel Discussion:
Tutoring in Practice and Serving Diverse Students
Thank You!

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References


References

