



## Literature Overview: Tutoring as an Intervention

Prepared by the Department of Research & Performance Management

May 2021

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### Key Findings

- Tutoring is consistently cited as an effective intervention that provides large, meaningful impacts on student learning even compared to other intervention programs.<sup>1, 2</sup>
- “Tutoring—supplemental one-on-one or small group instruction—has been promoted as an effective method for helping students learn, particularly those who have fallen behind.”<sup>2</sup>
- Elementary tutoring often shows the largest gains, but secondary mathematics tutoring is also effective.
- High-dosage tutoring is the gold standard for tutoring and has shown the largest student gains in reading and math.
  - Tutoring is most effective when delivered during school hours in 30–60 sessions at least 3 times per week.
  - Having tutoring built into student schedules allows for more equitable access to the services as well as consistent usage.
  - Tutors can be paraprofessionals, teachers, or recent, well-trained college graduates.
  - If strategically implemented, high-dosage tutoring can be implemented in a cost-effective manner.

### Support for Tutoring as an Intervention

- Tutoring is cited as the most effective of all educational interventions followed only in scale by detailed student feedback and progress monitoring and cooperative learning.<sup>1</sup>
- On average effective tutoring can move a student from the 50<sup>th</sup> percentile to the 66<sup>th</sup> percentile on academic gains, a stable gain of about 0.35 standard deviations (SD; which is considered substantial in educational settings) was found across three separate large scale meta-analyses.<sup>1, 2, 3, 4</sup>
- A plethora of tutoring programs exist that have vast differences in their implementation. However, the findings are consistent that “tutoring interventions exert substantial effects on learning across a wide range of program characteristics.”<sup>4</sup>

### Difference in Student Groups

- Economically disadvantaged students are less likely to sign up for free after-school tutoring.<sup>5</sup>
- While other interventions often show lower effects for students of color, tutoring did not have a significantly different effect for these students compared to their White peers.<sup>1</sup>
- Black students and female students took advantage of free after-school tutoring more often than their Hispanic/Latinx, White, Asian, and male peers.<sup>5</sup>

### Elementary vs. Secondary Students

- Historically, younger students show the most benefit from interventions for a variety of reasons,<sup>6</sup> and thus tend to exhibit a higher return on investment.<sup>7</sup>
- While overall effects for math and reading tutoring programs are similar, reading tutoring tends to be relatively more effective for students in Pre-K through 1<sup>st</sup> grade, while math tutoring tends to be more effective for students in 2<sup>nd</sup> through 5<sup>th</sup> grade.<sup>4</sup>



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- Additionally, high-school math tutoring can yield significant gains as well on both math assessment scores and grades.<sup>8</sup>
- Studies on tutoring are more common for elementary grades, thus the impacts of middle-grades and high-school tutoring could potentially be minimized due to their lower frequency of reporting.
- Reading programs focusing on “explicit instruction (e.g., in phonics, decoding, and/or structural analysis)” show strong results in 1<sup>st</sup> grade through 3<sup>rd</sup> grade.<sup>9, 10, 11</sup>

### Best Practices and High Dosage Tutoring

High dosage tutoring (HDT) typically consists of personalized tutoring that takes place multiple times per week during the academic school day and delivers hundreds of hours of tutoring in a single academic year.<sup>12</sup>

- “Based on the current research, high-dosage tutoring seems to be most effective in early grades literacy and high school math.”<sup>13</sup>
- HDT incorporates the following characteristics, which could also be utilized as a best-practices model in after-school programs:

### Frequency

- Ideally, HDT should provide at least 30–60-minute tutoring sessions three times per week.<sup>14, 18</sup>
- Studies have found little evidence that once-a-week tutoring is sufficient to generate meaningful gains.<sup>15, 16, 17, 25</sup>
- 2<sup>nd</sup> through 5<sup>th</sup> grade students showed the most gains when tutoring occurred 3 days per week, while Pre-K–1<sup>st</sup> grade had more gains with 4–5 days per week.<sup>18, 19</sup>
- Students who received at least 35 sessions in a year had significantly larger positive effects than those who participated at a lower rate (increase of 0.13–0.17 SD).<sup>20</sup>

### Group Size

- Ideal group sizes range between 2–3 with any more than 4 students tutoring moving into small group instruction which is not as effective.<sup>14</sup> In grades 2–5, a 3:1 ratio has been shown to be ideal.<sup>4</sup>
- Novice tutors should not work with more than 2 students at a time.<sup>13</sup>
- 1:1 tutoring is the most effective form of tutoring,<sup>10</sup> although this option can prove extremely costly for districts.<sup>2, 24</sup>

### Scheduling

- Tutoring should happen during the school day. Building tutoring into student schedules allows for consistent dosage of tutoring as well as equitable access to these services.<sup>13</sup>
- The impact of during-school tutoring programs (1.0 SD) is twice as large as that of after-school programs (0.4 SD).<sup>4</sup> After school tutoring programs can vary widely in their implementation and their level of fidelity. This results in mixed outcomes for these types of programs.
  - In a random assignment study of a national after-school program, no positive effects were found on reading test scores or grades for elementary or middle school



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students.<sup>21</sup> Most large-scale control-studies find insignificant or minute effects for after-school programs.<sup>27</sup>

- Alternatively, many small-scale after-school tutoring programs have shown moderate student growth as compared to their non-tutored peers.<sup>24, 28, 29</sup>
- Parents indicated that they often selected tutoring programs based to the convenience and transportation logistics, and students who were on free and reduced lunch status signed up for free after-school tutoring at much lower rates.<sup>5</sup>
- Tutors should remain connected with the same students over the course of a year. This allows the students to build a relationship with their tutors and the tutors to understand the students' learning needs.<sup>14</sup>

### Staffing and Training

- A different skill set is needed for tutors compared to teaching a normal size classroom. This lower skill set can likely open the door for effective tutors to be well-trained volunteers and college graduates.
- Teacher-led tutoring shows the strongest gains for students followed by paraprofessionals<sup>a</sup> (with a formal tie to the school and tutoring role), community-volunteer, and parent-volunteers, respectively.<sup>4, 22</sup>
- Tutors should receive high quality intensive training before engaging with students.
  - A four-week intensive training was implemented with college graduates prior to 9 months of on-site tutoring which significantly improved student test scores and grades.<sup>6, 23</sup>
  - Modest, though smaller, effect sizes have been shown in non-experimental tutoring designs for tutors who have a modest amount of training (e.g., 4+ hours) though most of these volunteers were education majors.<sup>24, 26</sup>

### Cost

Cost of tutoring programs can be prohibitive for some districts; however, a few key strategies can vastly decrease the per-pupil expense and even make tutoring one of the most cost-effective school-based interventions.

- Using paraprofessionals including recent college graduates on single- or two-year contracts that are geared as a year of service can show strong benefits at a much lower cost than utilizing teachers.<sup>6</sup>
- Create tutoring pods of 3 students for upper elementary grades where students benefit from peer interaction and can increase the number of students served.<sup>2</sup>
- Frequently track data to best utilize the tutors and hone in on areas where students struggle.

### Current Tennessee Programs

There are three current high-dosage pilot tutoring programs taking place in Tennessee school districts.<sup>13</sup> While only one district is similar to SCS in size and scope, Shelby County Schools should connect with each District to ascertain their success and challenges in order to build off of their models.

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<sup>a</sup> Recent, well-trained college graduates who worked full time as tutors were classified as paraprofessionals in the meta-analyses.



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- Lenoir City Schools (LCS) near Knoxville has roughly 2.5K students. It sought to combat some of the learning loss associated with pandemic related closures. They piloted a high-dosage tutoring program with 20 juniors and saw almost all students make growth as measured by pre- and post-ACT test. “Both tutors and participants reported strong engagement and found value in the tutoring opportunity.” LCS is planning to pilot an 8<sup>th</sup> grade focused program using juniors as tutors in the fall.
- Metro Nashville Public Schools (MNPS) serves around 85K students. They piloted a tutoring program for seniors in 2020. During the program they saw a 95% attendance rate for tutoring and plan to scale this program. After evaluating and course-correcting challenges in the senior program, MNPS is now piloting a high-dosage tutoring program for 150 students focused on literacy in grades 3–5 and numeracy in grades 6–9 in spring 2021. They are conducting the pilot as a randomized control trial in order to evaluate its effectiveness.
- Trousdale County Schools (TCS) enrolls about 1.3K students. They implemented a high-dosage tutoring program during a scheduling block for Tier 2 first grade students. The block scheduling will continue in Summer 2021 as part of a summer literacy camp program. They plan to implement the program district-wide in the following academic year.



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**Appendix A**

Short research-based briefs, guides, and publications on tutoring best practices.

1. [High-dosage tutoring: Planning and implementation guide](#) by SCORE Institute of TN.
2. [High-dosage tutoring that works for students](#) by SCORE Institute of TN.
3. [The transformative potential of tutoring for prek-12 learning outcomes: Lessons from randomized evaluations](#) by Latif Jameel Poverty Action Lab.
4. [Accelerated student learning with high dosage tutoring](#) by EdResearch for Recovery.
5. [Toolkit for tutoring programs: Equitable access to quality tutoring](#) by National Student Support Accelerator. (Long guide)