CIGNITION IMPLEMENTATION PARENTALLY PLACED PRIVATE SCHOOL (STUDENTS WITH DISABILITIES) DISTRICT-FUNDED SPECIAL EDUCATION TUTORING INITIATIVE

Grades: K - 12
Program Length: 7 Months
Treatment Year: 2024-2025

Table of Contents

1.0 – Introduction

1.1 – Background

This tutoring initiative began during the 2022–2023 school year, with Cignition delivering high-dosage tutoring as part of a publicly funded academic intervention program.

During the 2024–2025 school year, designated funding supported tutoring services for students with disabilities attending private schools selected by their families.

The program provided high-dosage, at-home tutoring to students in private school settings, with funding administered through a public education system.

The program was slated to run for 20 weeks and began on October 15th, 2024. The majority of sessions concluded the week of March 24th, 2025, and the final session was held on April 9th, 2025.

1.2 – Program Design and Description

Tutoring sessions were conducted virtually using Zoom, a videoconferencing platform to connect tutors and students in real time. Students logged in from their personal devices, such as Chromebooks, laptops, or at-home desktop computers. Instruction was facilitated through a collaborative digital platform featuring interactive manipulatives and engaging activities.

Parents opted into the program by completing a survey, which collected each student's subject preference (Math, ELA, or Executive Functioning) and weekly availability.

Evening sessions followed one of three formats:

A. 3x a week for 30 minutes (available to grades K-12)
B. 2x a week for 45 minutes (available to grades 6-12)
C. 1x a week for 60 minutes (available to grades 9-12)

Each student received 90 minutes of instruction per week for 20 weeks, equating to 30 hours of high-dosage tutoring over 5.5 months.

The program was designed to meet students' unique learning needs through small group instruction in three core areas: **English Language Arts (ELA)**, **Math**, and **Executive Functioning**.

Because participating students attended a variety of schools, they were grouped by both **subject area** and **grade band** to ensure instruction was developmentally appropriate and academically relevant. The grade bands were organized as follows:

- Kindergarten & 1st Grade
- 2nd & 3rd Grades
- 4th & 5th Grades
- 6th & 7th Grades
- 8th Grade
- 9th & 10th Grades
- 11th & 12th Grades

The small group tutoring sessions provided individualized attention while fostering peer collaboration. Each group focused on foundational and grade-level content aligned with the subject selected by the family.

Parents of participating students were invited to select preferred days of the week for tutoring sessions. Cignition created schedules that prioritized each family's first-choice subject while aligning availability with group structure. During the initial phase of the program, it became necessary to make several scheduling adjustments. Since parents had selected time slots well in advance, we had to realign schedules and resources to better accommodate their needs.

Because students attended different schools, Cignition's Curriculum and Instruction Team tailored the curriculum to focus on key grade-level learning priorities. For Kindergarten through 3rd grade ELA, we incorporated [Phonics Hero](), supplemented by Cignition's own decodable readers and comprehension lessons. All K-5 students completed a Phonics Hero placement test to determine their starting reading level.

The Foundational Literacy program uses a phonics-based curriculum with 26 reading levels. Advancing through 6-7 levels typically represents one year of reading growth. The program is designed to help students advance by two years (12-14 levels) within a single school year. Achieving this ambitious goal requires 50 hours of tutoring per student.

1.3 - Purpose of Study

The purpose of this study was to evaluate the effectiveness of a large-scale, at-home tutoring program serving students with disabilities attending private schools through a publicly funded initiative.

Students participating in the initiative attended a wide range of private schools selected by their families, and their classroom teachers were not involved in forming tutoring groups.

To support instructional cohesion, student grouping and alignment were guided by Cignition staff with input from external special education advisors. As a result, the outcomes observed in this study reflect learning gains independent of students' individual school environments.

This initiative also marked Cignition's first large-scale program designed exclusively for students with identified learning needs. All tutors assigned to the program held valid special education certification.

In addition, the program introduced a newly developed curriculum focused on executive functioning skills. The overarching goal was to deliver high-quality, standards-aligned instruction while maintaining strong student engagement and promoting both academic and personal growth, despite the absence of a shared classroom setting or direct involvement from school-based teachers.

2.0 — Data Collection

2.1 — Introduction

Data from four sources was organized into two main categories: **student engagement** and **academic progress.** Data collection methods included tutor input and student feedback. All data was shared with program leadership and student support teams to inform instructional decisions and monitor progress.

2.2 – Engagement Metrics

Student engagement was evaluated using four indicators:

1. **Attendance**
   - The percentage of scheduled sessions a student attended.

2. **Participation**
   - At the end of each session, tutors rated students in three categories:
     - Persevered with Tasks
     - Listened Actively to Peers and Tutor
     - Participated in Discussions

   - Each category was rated using a five-point Likert scale based on the percentage of session time:
     - 0% of the session time
     - 25% of the session time
     - 50% of the session time
     - 75% of the session time
     - 100% of the session time

   - The average of the three ratings was used to generate an overall participation score for the session.

3. **Contact Hours**
   - The total number of hours a student was present in tutoring sessions throughout the program.

4. Student Survey Feedback

- At the end of each session, students completed a brief survey by responding to four statements, each aligned to a specific engagement domain:
    - **Tutor Relationship**: "My tutor talks to me about my work to help me understand my mistakes."
    - **Collaborative Learning**: "I take turns, listen to, and work with others in my session."
    - **Conceptual Understanding**: "Right now, I understand more of what we covered than when we started."
    - **Productive Struggle / Growth Mindset**: "I don't give up when the material is challenging."

- Responses were recorded using a four-point Likert scale:
    - Strongly Agree
    - Somewhat Agree
    - Somewhat Disagree
    - Strongly Disagree

2.3 – Academic Progress

Measuring Student Mastery through Standards Progress

- **Assessed by Tutors:** Tutors evaluate student progress through ongoing observations and embedded Mastery Checks during instruction.

- **Mastery Checks Embedded in Lessons:** Each lesson includes built-in Mastery Check problems, aligned with the instructional pacing and standards identified by the Curriculum & Instruction (C&I) team. These mastery checks are formative instructional tools developed by Cignition and are not standardized assessments.

- **Tutor Observation:** Tutors assess understanding based on the following expectations:
  - For Math
    - Provide the correct answer
    - Show all necessary work
    - Clearly explain reasoning

  - For ELA/Reading:
    - Provide the correct answer
    - Cite evidence from the text
    - Clearly explain thinking

- **Four-Point Mastery Scale:**

  Student responses are rated using the following rubric:

  - Emerging – 0%
  - Partially Proficient – 33%
  - Approaching Proficient – 66%
  - Proficient – 100%

- **Instructional Goal:** Cignition emphasizes conceptual mastery rather than one-time correctness.
  - To support deep understanding, standards are reinforced across multiple sessions.

3.0 – Data Analysis

Data collection metrics fall into two main categories: **Student Engagement** and **Academic Progress.**

Student Engagement

Student engagement and attendance are critical indicators of a tutoring program's overall effectiveness. Regular attendance ensures that students consistently interact with instructional content, directly influencing their learning outcomes. Engagement metrics provide insight into how students interact with the content, their level of interest, and the quality of their relationships with tutors and peers. Research and experience indicate that actively engaged students are more likely to absorb and retain information, as reflected in stronger academic performance.

Additionally, student surveys offer valuable perspectives by capturing students' perceptions of their learning experiences, confidence levels, and sense of progress. This holistic perspective helps identify areas where additional support may be needed, allowing for timely and targeted interventions to ensure student success.

Academic Progress

Academic progress is a key measure of a student's ability to demonstrate mastery of specific topics. Rather than focusing solely on correct answers, students are expected to explain their reasoning and show a deep, conceptual understanding of the content. This is assessed through Mastery Checks, which evaluate students' ability to apply what they've learned after engaging with their tutors, peers, and the curriculum. This approach supports not only short-term achievement but also the development of critical thinking skills necessary for long-term academic success.
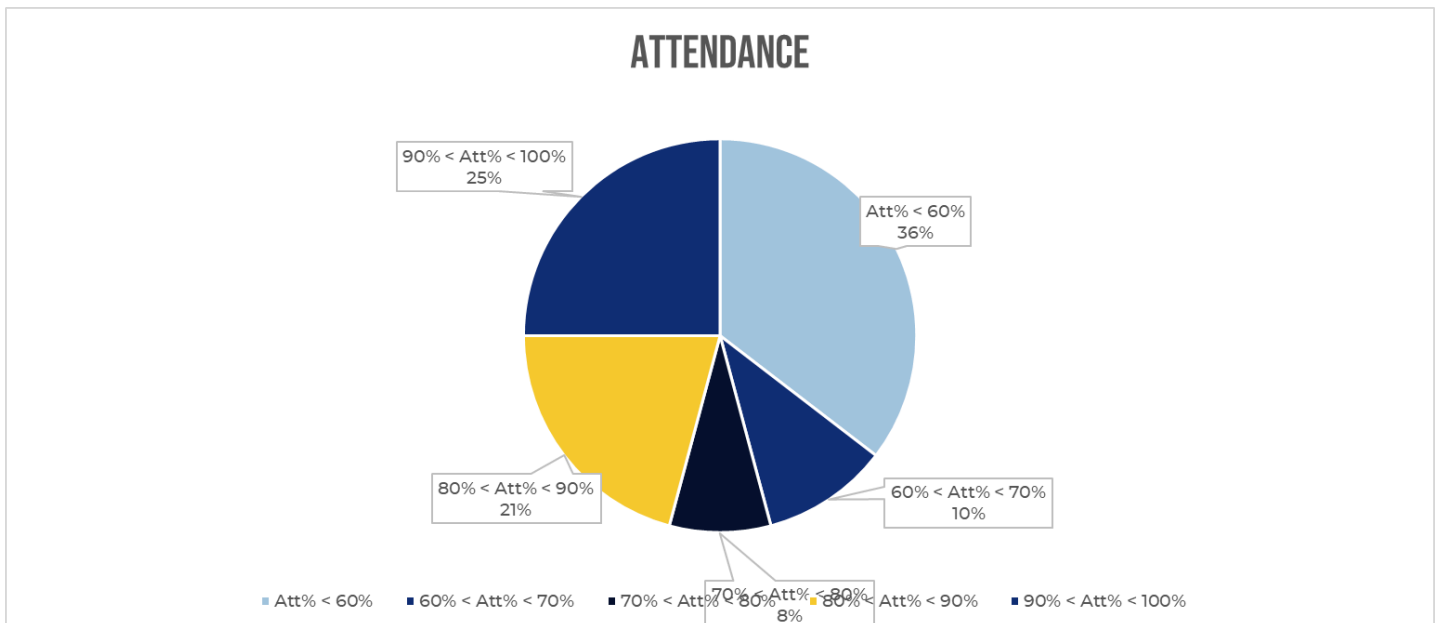
3.1 – Engagement Metrics

Four key components anchor our engagement metrics:
- 70% attendance rate
- 80% participation rate,
- Total of 15.5 contact hours
- 90% positive student feedback score

Meeting these benchmarks has consistently indicated a solid baseline of student engagement in our previous programs, demonstrating that students are effectively interacting with the material and the tutoring process. These metrics provide a reliable framework for assessing and ensuring meaningful student engagement throughout the program.

3.1.1 – Attendance

Average attendance for the program was 64.6%.

ATTENDANCE

90% < Att% < 100%
25%

Att% < 60%
36%

80% < Att% < 90%
21%

60% < Att% < 70%
10%

70% < Att% < 80%
8%

■ Att% < 60%   ■ 60% < Att% < 70%   ■ 70% < Att% < 80%   ■ 80% < Att% < 90%   ■ 90% < Att% < 100%
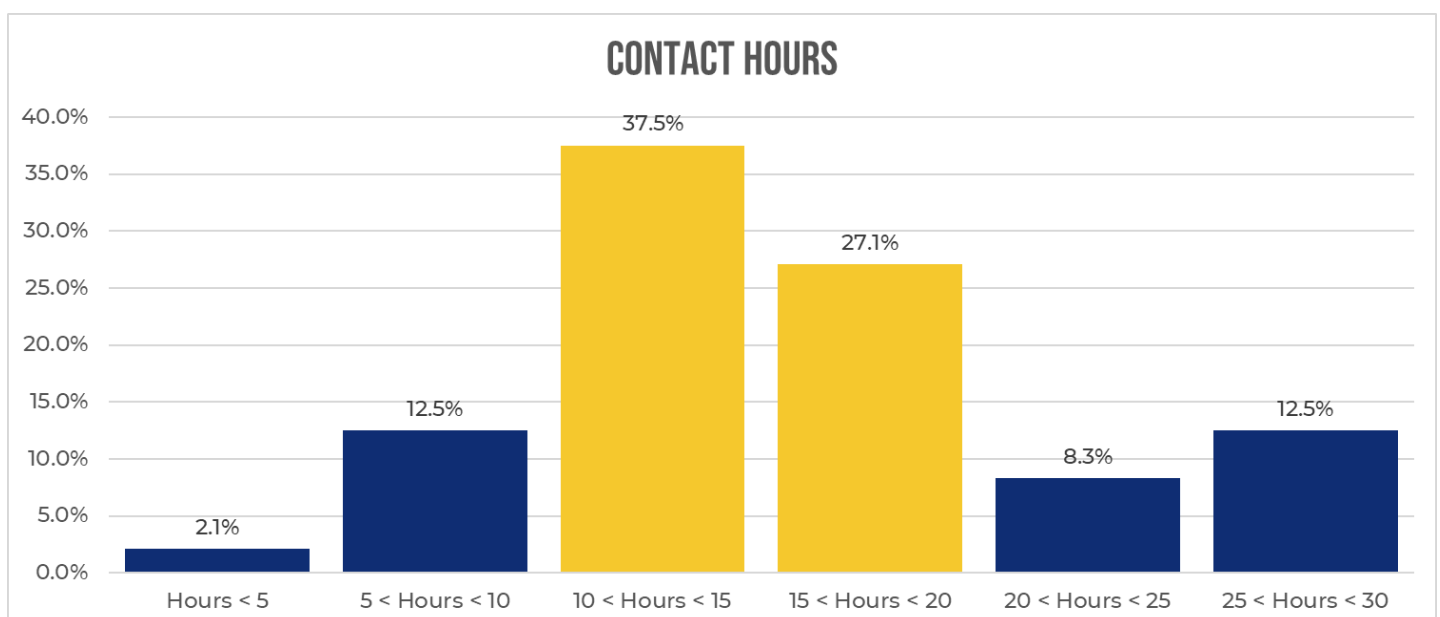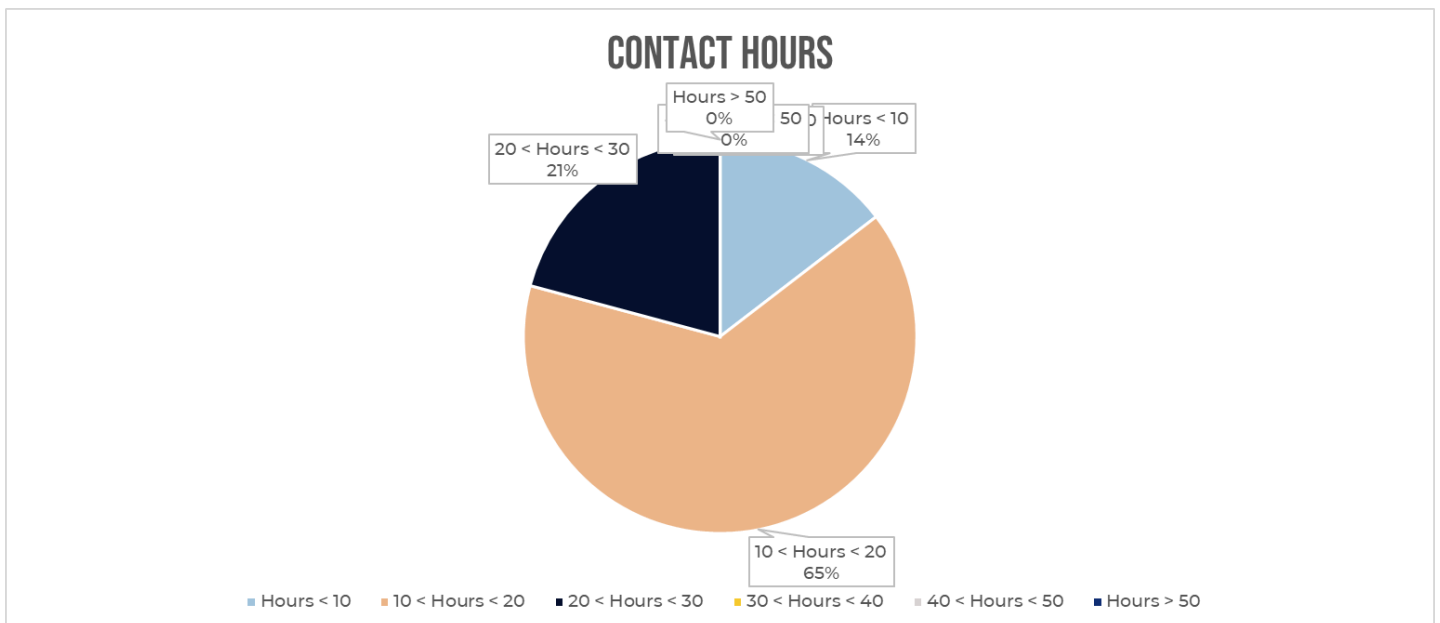
3.1.2 – Participation

Overall, student participation across all three key areas averaged an impressive **95.6%.** This high level of engagement reflects the students' commitment and responsiveness to the program's structure and content, underscoring the effectiveness of our instructional strategies and the positive learning environment we strive to create.

PARTICIPATION

Part% < 0%

60% < Part% < 70%

80% < Part% < 90%
8%

70
0%

90% < Part% < 100%
90%

Part% < 60%   60% < Part% < 70%   70% < Part% < 80%   80% < Part% < 90%   90% < Part% < 100%
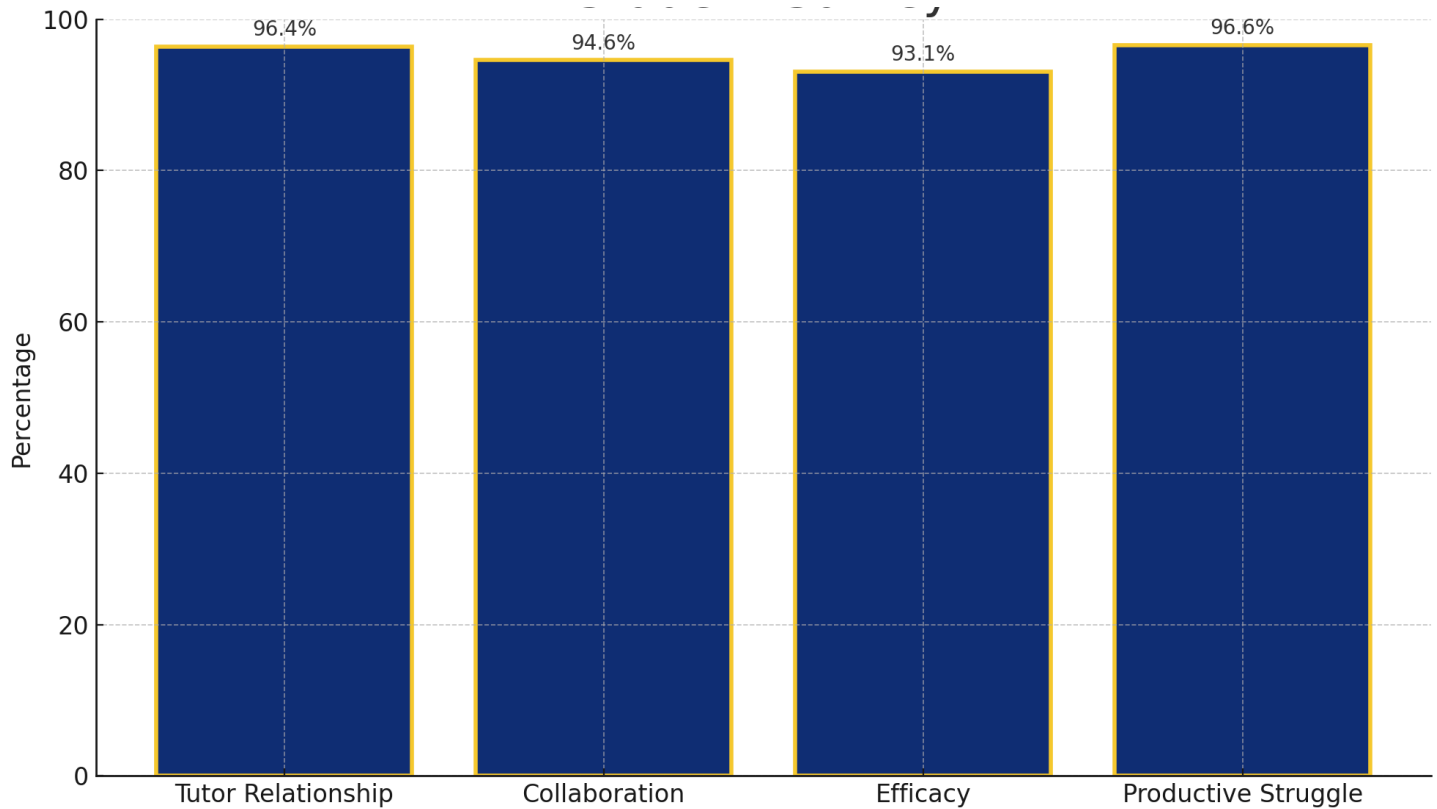
3.1.3 – Contact Hours

The contact hours baseline is drawn from [Design Principles for Accelerating Student Learning with High-Impact Tutoring](#), a meta-analysis from the Annenberg Institute at Brown University. However, this metric is difficult to hit as we work with students at home, often with conflicting after-school schedules and limited availability for sessions. Consequently, we frequently adjust our reporting standards to reflect actual student averages. 52.0% of students met the goal of 15.5 or more Contact Hours during the 20-week program.

CONTACT HOURS

- Hours > 50: 0%
- 50 > Hours < 10: 0%
- Hours < 10: 14%
- 20 < Hours < 30: 21%
- 10 < Hours < 20: 65%

Legend: Hours < 10 | 10 < Hours < 20 | 20 < Hours < 30 | 30 < Hours < 40 | 40 < Hours < 50 | Hours > 50

CONTACT HOURS

Category	Percentage
Hours < 5	2.1%
5 < Hours < 10	12.5%
10 < Hours < 15	37.5%
15 < Hours < 20	27.1%
20 < Hours < 25	8.3%
25 < Hours < 30	12.5%

3.1.4 – Student Survey

Student survey results aim to see a positive response of at least 90% of the time across the four areas we examine. Based on student survey data, the program had an overall average score of **95.2%**.

Student Survey

3.2 – Student Progress

To measure overall academic progress, we track growth on each standard assessed across the lessons using **Mastery Checks**. When a new standard is introduced, students complete a baseline Mastery Check before receiving any instruction on the content. Tutors then score the student's response using a rubric developed by Cignition, which evaluates both the accuracy of the answer and the quality of the student's explanation.
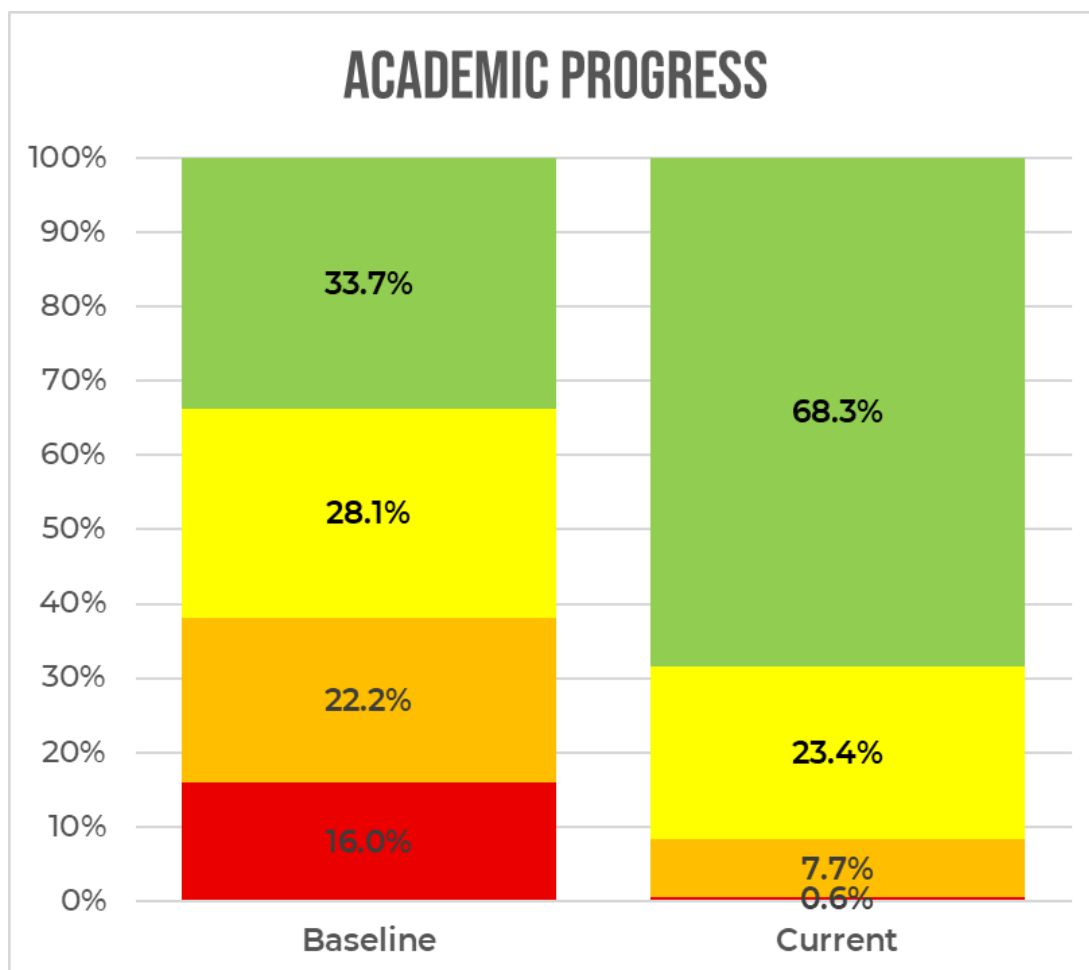
Scores are assigned on a 4-point scale:

- **0** – Emerging

- **1** – Partially Proficient

- **2** – Approaching Proficient

- **3** – Proficient

This process is repeated each time a Mastery Check is administered while students continue working on a given standard. The final Mastery Check score is then compared to the baseline to calculate their academic growth over time.

3.2.1 – Academic Standards Progress Score

Across Math and English Language Arts, the overall standards progress growth was **44.5%**.

ACADEMIC PROGRESS

Baseline:
- 33.7%
- 28.1%
- 22.2%
- 16.0%

Current:
- 68.3%
- 23.4%
- 7.7%
- 0.6%

3.2.1.1 – Math Progress Score

To assess student progress in mathematics, we use a detailed rubric to score Mastery Checks aligned to specific academic standards. These checks are designed to evaluate both procedural fluency and conceptual understanding. Tutors score each response based on three key components: the correct answer, a complete display of all calculation work, and a clear explanation of the reasoning used to arrive at the answer.

To earn a score of **Proficient (3),** a student must:

- Provide the correct answer, show all necessary work, and include a full explanation of their thinking

An **Approaching Proficient (2)** may be assigned if the student:

- Has the correct answer, but only partial work or explanation

    Or

- The answer is incorrect, but the student has shown all their work and provided a full explanation
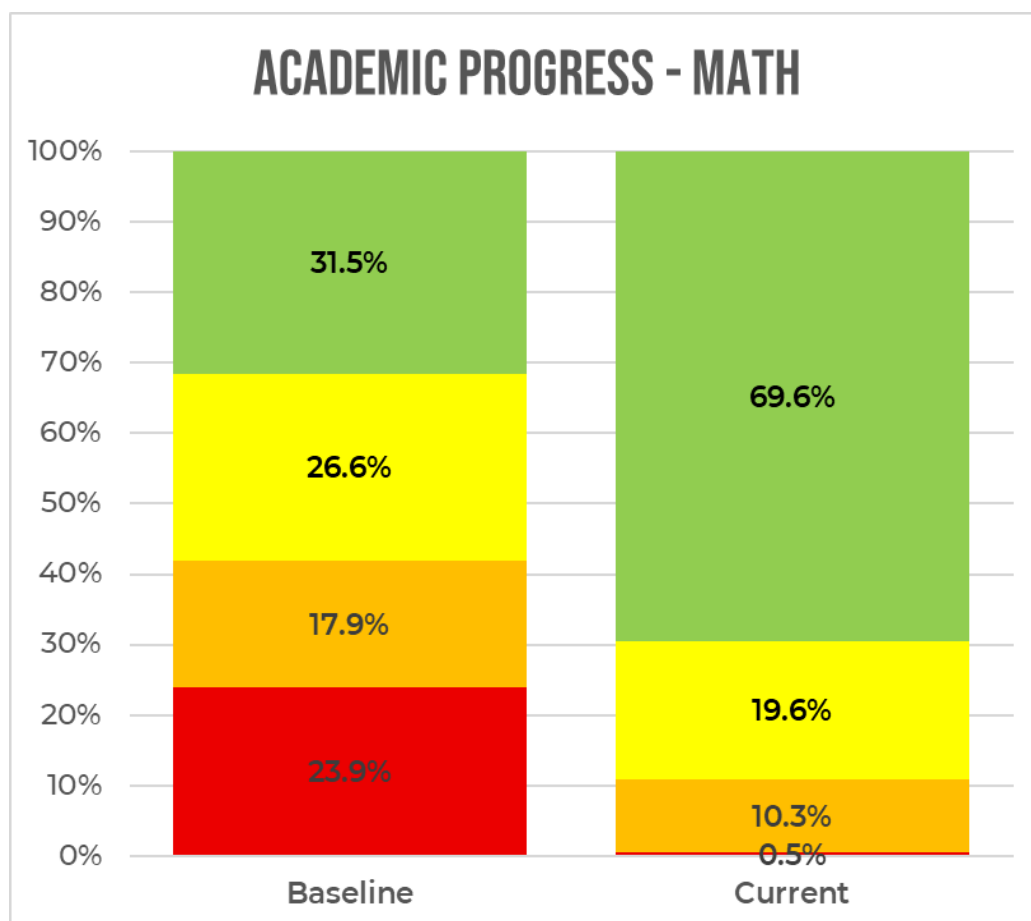
A student receives a score of **Partially Proficient (1)**:

- If the answer is incorrect and only some work and/or a partial explanation is provided

An **Emerging (0)** score is assigned when:

- The response includes an incorrect answer with no work shown and no explanation provided

Using this rubric, we calculated the students' overall average math progress growth score to be **56.0%**, reflecting their level of conceptual mastery across the assessed standards.

3.2.1.2 – ELA/Reading Progress Score

To calculate academic progress in English Language Arts, we compare each student's baseline Mastery Check to their highest Mastery Check for a given standard. These assessments are scored using a rubric that evaluates comprehension and textual analysis.

A **Proficient (3)** score is awarded when a student:

- Provide the correct answer
- Cite comprehensive and directly relevant textual evidence
- Clearly explain their reasoning

An **Approaching Proficient (2)** score may be given if the student:

- The student gives a correct answer but includes only partial or loosely relevant evidence and/or a partial explanation.

   Or

- The answer is incorrect but is supported by full evidence and a well-developed explanation, even if misaligned with the question.
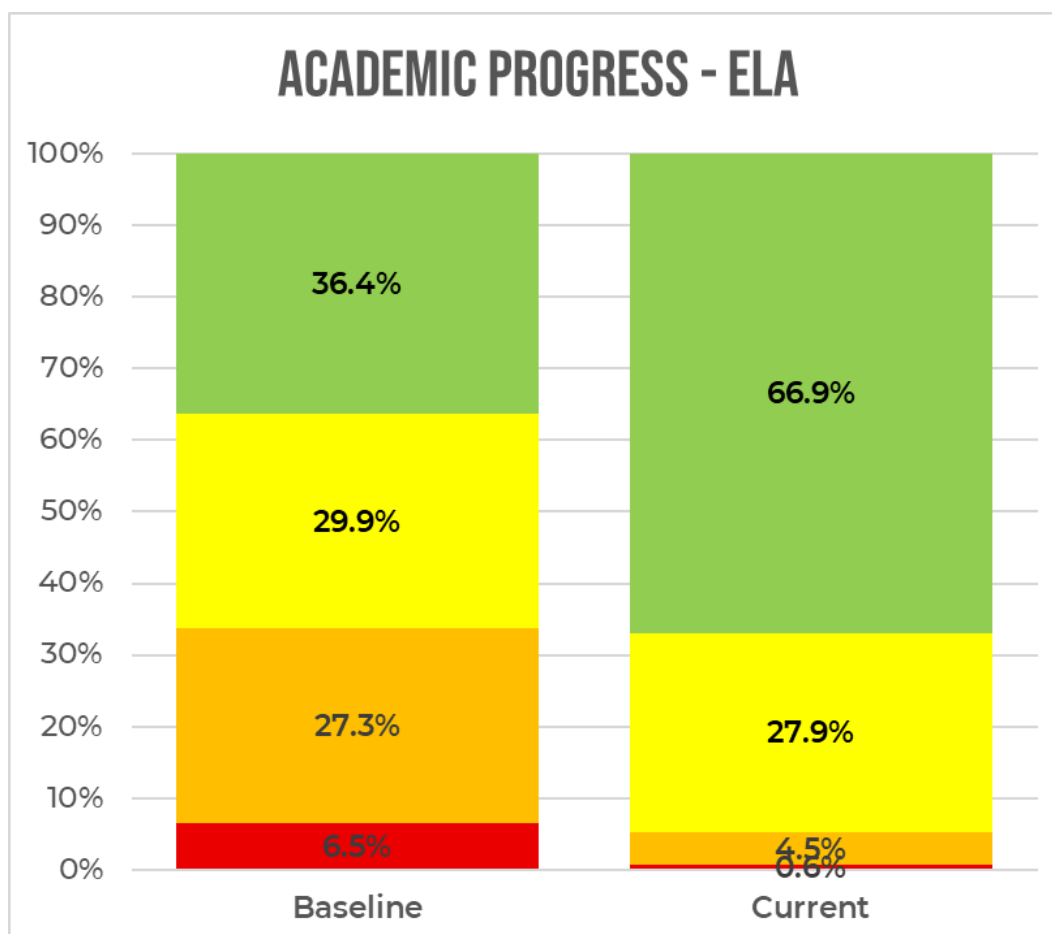
A student receives a score of **Partially Proficient (1**) for:

- An incorrect answer supported by some evidence and a partial explanation that reflects misunderstanding or misalignment

An **Emerging (0)** score is assigned when:

- The response includes an incorrect answer with no cited evidence or explanation.

In this rubric, "full evidence" refers to responses that thoroughly support the student's reasoning, directly address the question, and demonstrate a deep understanding of the text. In contrast, "some evidence" may be incomplete, only loosely connected to the question, or indicative of limited comprehension.

ACADEMIC PROGRESS - ELA

	Baseline	Current
Green	36.4%	66.9%
Yellow	29.9%	27.9%
Orange	27.3%	4.5%
Red	6.5%	0.6%

Additionally, K-3 students were assessed using a phonics program called Phonics Hero, which tracks reading growth in months. **On average, students demonstrated 8.4 months of reading growth over the course of the program. This corresponds to approximately one month of reading proficiency gained per 2.1 hours of tutoring, or one month of growth per four tutoring sessions—a strong indicator of accelerated progress.**

3.2.2 – Attendance and Academic Progress Analysis

Attendance significantly impacted academic outcomes. While the overall attendance rate was 64.6%, notable differences in academic progress were observed based on attendance levels:
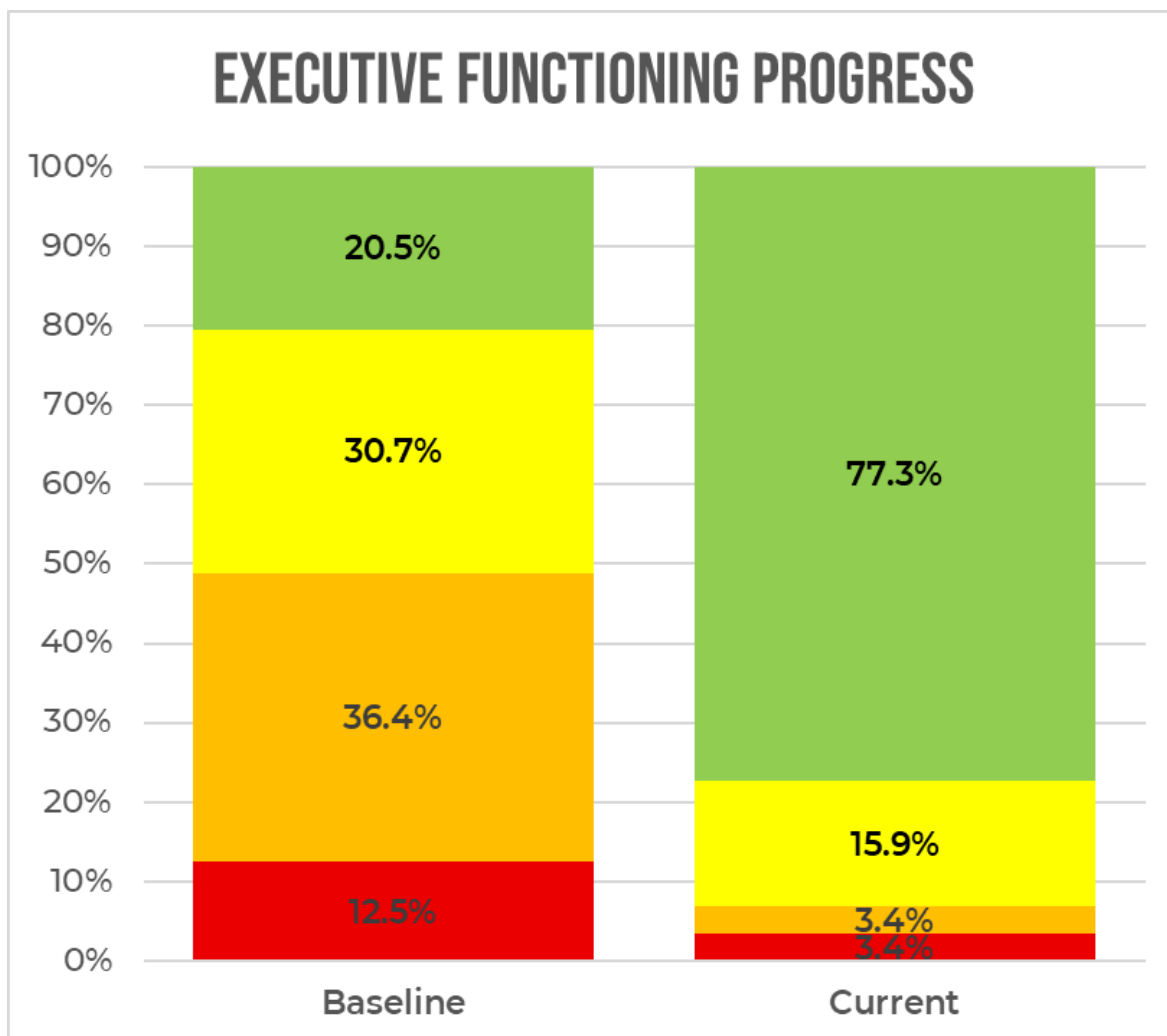
- Students with less than 60% attendance (17 of 48 students) averaged 38.0%, reducing the overall attendance rate.

- The remaining 31 students had significantly higher attendance, averaging 84.8%.

- Students with attendance below 60% in ELA had an Academic Progress score of 22.9%, compared with 36.4% for those with attendance above 60%.

- Students with attendance below 60% in Math had an Academic Progress score of 32.3%, compared with 85.1% for those with attendance above 60%.

Despite lower attendance, students in the <60% group still received an average of 11.1 hours of instructional time and achieved an Academic Progress average of 28%, close to the program goal of 33%. However, students with higher attendance far exceeded that goal, averaging 54.8%, underscoring the importance of consistent attendance for maximizing academic growth.

3.2.3 – Executive Functioning Standards Progress Score

The Executive Functioning curriculum was specifically developed for this program. Student progress was assessed through Mastery Checks aligned to performance goals, along with qualitative input from tutors. While this data is not included in the overall Academic Growth, it serves as a **separate measure of student development**. **Overall,** students demonstrated a **67.9% growth** in executive functioning skills, reflecting strong gains in areas such as focus, self-monitoring, and emotional regulation.

EXECUTIVE FUNCTIONING PROGRESS

Baseline: 20.5%, 30.7%, 36.4%, 12.5%
Current: 77.3%, 15.9%, 3.4%, 3.4%
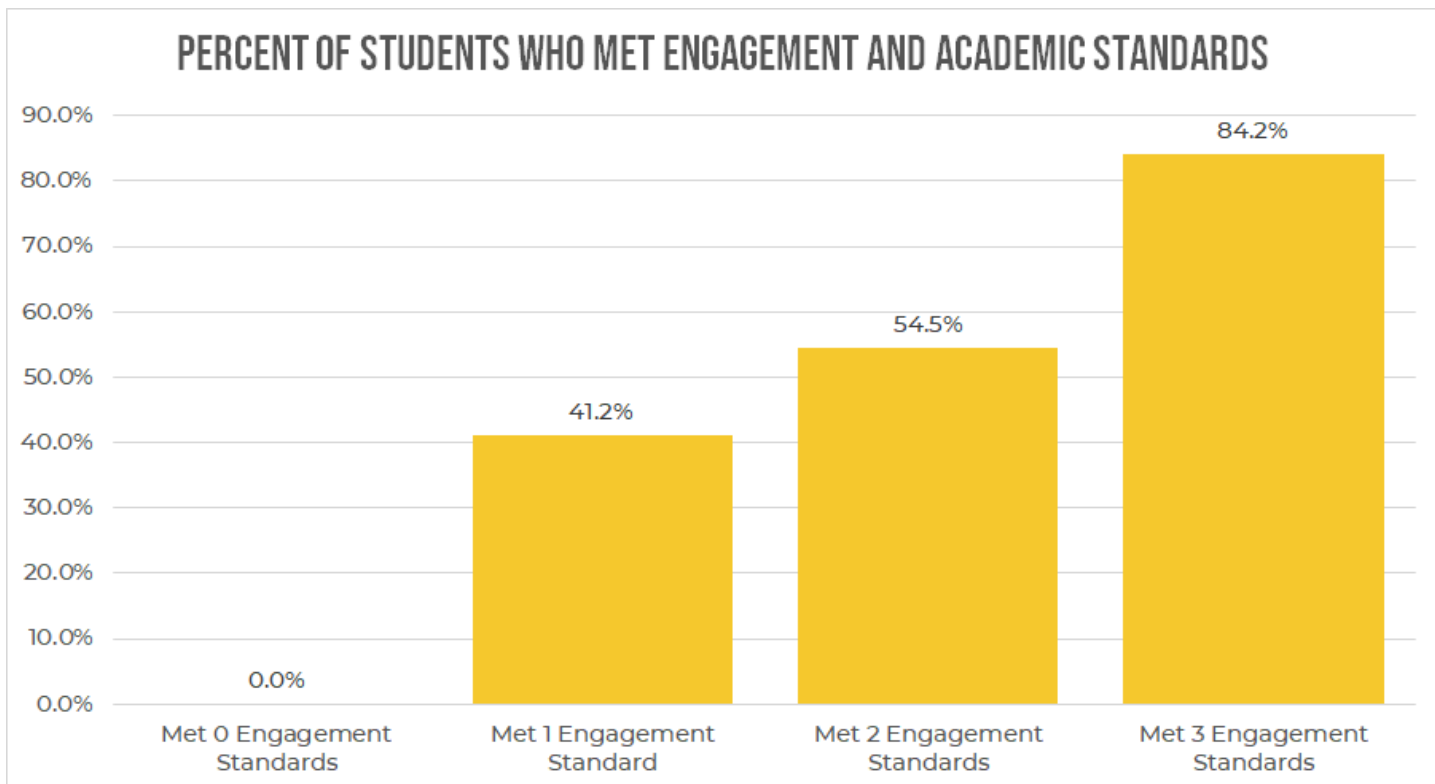
3.2.3.1 – Unit & Skill Outline

Students worked on a variety of skills throughout the Executive Functioning Curriculum. Each lesson focused on a specific skill area and included embedded Mastery Checks to assess understanding and application. The skills addressed included:

- Growth Mindset
- Focus/Attention
- Working Memory
- Self-Monitoring
- Impulse Control
- Emotional Control
- Planning and Organization
- Collaboration and Social Skills
- Organization
- Flexible Thinking
- Stress Tolerance/Perseverance
- Self Advocacy
- Defining and Achieving Goals

3.2.4 – Academic Progress vs. Engagement

To evaluate the relationship between student engagement and academic success, we compared the percentage of students who met academic standards in relation to the number of engagement benchmarks they met. Engagement was defined by three key metrics: achieving at least a **70% attendance rate**, maintaining an **80% participation rate**, and receiving a **positive student feedback score of 90% or higher**. Academic standards were measured through demonstrated mastery on content-aligned mastery checks.

The analysis revealed a strong correlation between higher engagement and academic achievement. Among students who met only one engagement benchmark, **41.2%** also met academic standards. This rose to **54.5%** among those meeting two engagement benchmarks and to **84.2%** among those meeting all three. These results highlight the critical role that consistent attendance, active participation, and positive student perceptions play in driving academic progress, reinforcing the need to prioritize engagement to improve student learning outcomes.

PERCENT OF STUDENTS WHO MET ENGAGEMENT AND ACADEMIC STANDARDS

Chart showing:
- Met 0 Engagement Standards: 0.0%
- Met 1 Engagement Standard: 41.2%
- Met 2 Engagement Standards: 54.5%
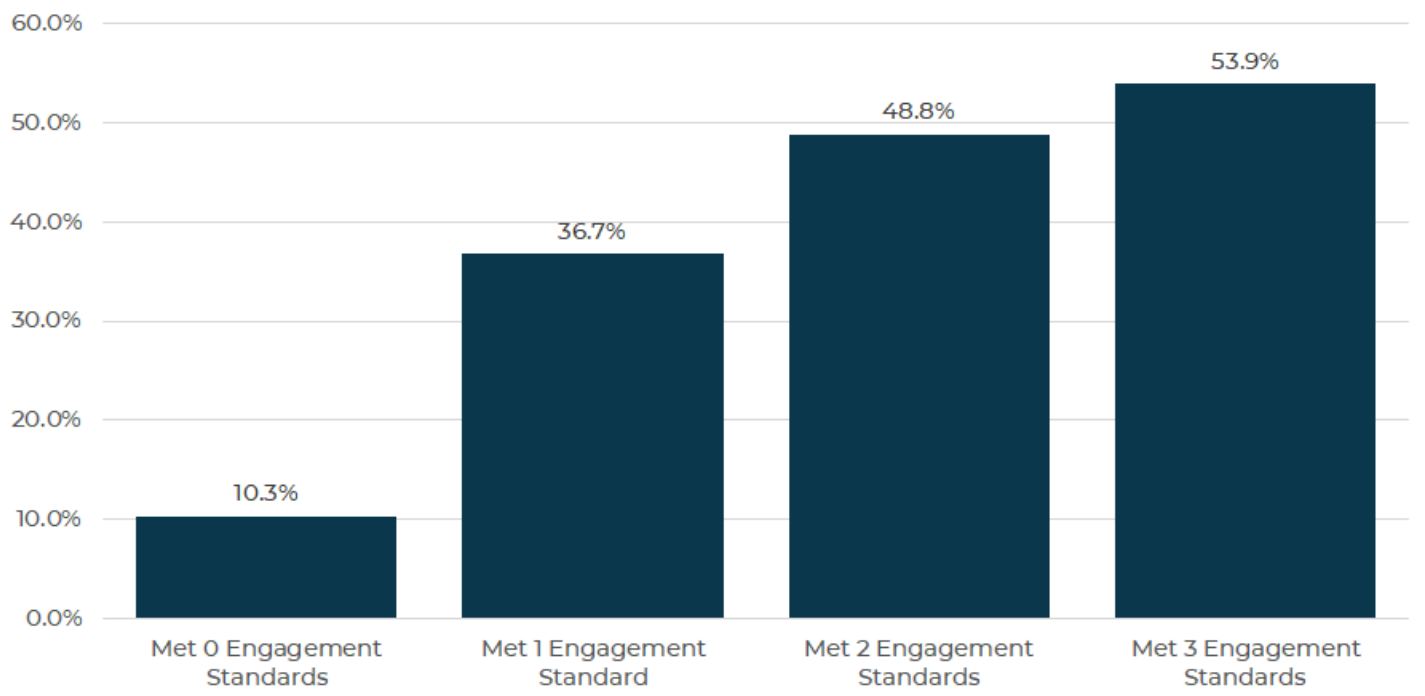- Met 3 Engagement Standards: 84.2%

In addition to examining overall academic proficiency, we analyzed how engagement metrics relate to students' **academic progress**, specifically whether students met a **minimum growth benchmark of 33%** from their baseline to their final Mastery Check scores. The same three engagement criteria were used in this analysis: **70% attendance**, **80% participation**, and a **90% positive student feedback score**.

The data again revealed a positive relationship between engagement and academic growth. Only **10.3%** of students who met no engagement benchmarks achieved the 33% growth goal. Among those who met one benchmark, **36.7%** reached the growth target. This percentage increased to **48.8%** for students who met two engagement benchmarks and peaked at **53.9%** for students who met all three engagement standards.

These findings reinforce the critical connection between consistent, meaningful engagement and academic improvement. Students who are regularly present, actively participate, and report positive learning experiences are significantly more likely to demonstrate measurable academic growth over time.

ACADEMIC PROGRESS SCORE OF STUDENTS WHO MET ENGAGEMENT METRICS

4.0 – Findings Summary

Strong quantitative and qualitative measures support the exceptional success of our tutoring program. The remarkably high participation rate (95.6%) and tutor relationship strength (96.4%) created an ideal learning environment, significantly contributing to students' outstanding academic gains. Despite accessing sessions from home, outside of a traditional school setting, students remained consistently engaged. These outcomes suggest that the home environment, when paired with family support, not only failed to hinder learning but may have enhanced it. Although not the primary focus of this analysis, the data points to a potential correlation between students' comfort at home, available support during sessions, and improved academic outcomes. Virtual tutoring enabled students to benefit from instructional support while learning in a familiar, stable environment.

Additional metrics reinforce the program's academic impact. **High scores in collaboration (94.6%) and conceptual understanding (93.1%) indicate that students demonstrated deep comprehension rather than relying solely on rote memorization.** Furthermore, increased student confidence and persistence, reflected in a 96.6% score for productive struggle, show that the program fostered skills with lasting benefits beyond the tutoring sessions, supporting long-term academic success.

Overall, the data clearly demonstrates the program's exceptional effectiveness in promoting substantial academic achievement and high levels of student engagement. The strong emphasis on tutor relationships, collaborative learning, and productive struggle played a key role in closing learning gaps and fostering essential learning skills. With further refinement and expansion, this model has strong potential to deliver even greater success for a broader range of learners.

Looking ahead, several key improvements could strengthen future implementations based on insights from this year's study. First, greater emphasis should be placed on understanding student availability and aligning session times with family routines. One of the primary difficulties faced was the shifting nature of students' after-school commitments, often leading to decreased attendance and fewer contact hours than expected. To address this, future implementations could include multiple cohorts or a mid-program scheduling reset, allowing families to adjust their tutoring times as needed. This flexibility would be especially valuable given the diverse range of school districts and external factors affecting students' availability. Given the complexity of scheduling across subjects and grade levels, building more adaptable scheduling structures would improve both participation and consistency.

Another critical area for improvement involves the initial grouping of students. Incorporating data from families, schools, or district-level standardized assessments could help ensure students are placed into more academically cohesive groups from the outset. This year, several groups required mid-program adjustments due to coursework and instructional needs. A more data-informed grouping strategy would increase instructional alignment and improve learning outcomes from the outset.

One of the program's greatest successes was the use of certified Special Education tutors. These educators brought deep expertise in differentiation, allowing them to tailor instruction to a wide range of academic, behavioral, and social-emotional needs. Their ability to support diverse learners and to build strong relationships was instrumental in maintaining high levels of engagement and promoting long-term academic success.