

Brockton Blended Learning Pilot Study Brief

PRODUCT INFORMATION

Product Name: Carnegie Learning-MATHia software

Product Description: Curricular Tool

Learning Focus: Middle and High School Math

Teacher Training: LearnLaunch provided a grant to Brockton Public Schools, designed to buttress the pilot by providing instructional coaching support to the participating Brockton coaches and teachers for 20 weeks from October 2018 to March 2019. A LearnLaunch Blended Learning Coach worked directly with the Brockton math coaches, who then ran weekly meetings to share practices, review student MATHia data, and plan instructional strategies with the math teachers. The LearnLaunch Coach also provided support and resources on blended learning. Additionally, teachers received a MATHia Resource Google folder with materials related to Carnegie Learning and blended learning. These resources were further illuminated by weekly emails targeting a pertinent resource from this folder.

Student Usage Minimum: Research about the software indicates that student learning is greatest when students use it for 60 to 90 minutes per week in a blended learning environment (Hamilton & Delaney, 2018).

Device Specifications: Brockton Public School students use Acer tablets running Windows 10.

Cost: The list price for Carnegie Learning Math Solution, Blended (which includes student edition textbook, MATHia® software license, and online access to student edition textbooks) is \$44.86 per year per unit.

DISTRICT CONTEXT

District demographics:

- Student Race and Ethnicity
- African American 59.4%
- Asian 2%
- Hispanic 15.8%
- Native American .4%
- White 17.7%
- Native Hawaiian, Pacific Islander .2%
- Multi-Race, Non-Hispanic .8%
- Selected Populations
- 71% students with high needs
- 54% students qualify as economically disadvantaged
- 42% students English is not their first language
- 25% students enrolled as English Language Learners

Pilot demographics: The MATHia Pilot ran at South Middle School and in selected, ninth grade, math classes at Brockton High School. Ten teachers participated in the pilot, six from the middle school, and four from the high school.

PILOT GOALS

- Increase student proficiency in mathematics.
- Meet school benchmarks for blended MATHia usage.
- Provide effective leadership coaching to support the edtech piloting process of MATHia.
- Determine and evaluate the amount and type of instructional support needed by classroom teachers to adopt and implement the curriculum software so it has a measurable impact on student learning.

IMPLEMENTATION PLAN

Duration: 6 months (9/18 to 3/19)

Quality of Support: After the initial training by Carnegie, the LearnLaunch Instructional Coach met bi-weekly with most of the high school teachers via video calls and monthly via in-class observations. At the middle school, the Math Department Head met bi-weekly with the LearnLaunch coach to learn about blended learning, station rotation, instructional practices, and to review MATHia student data. The middle school teachers met weekly with the Math Department Head to review student data from MATHia and discuss blended learning instructional strategies. At the high school, teachers were invited to sessions with the LearnLaunch Coach and participated occasionally. The high school teachers did not have consistent blended learning coaching. Additionally, a resource folder was created for the middle and high school teachers that included short articles, videos, and website links. Also, the LearnLaunch Coach sent a weekly email highlighting individual items in the folder, dubbed "MATHia Monday," to all the pilot teachers.

Implementation Model: The software is optimized when students use it for 60 to 90 minutes per week in a blended learning environment (Hamilton & Delaney, 2018).

Data collected:

- STAR (Standardized Testing and Reporting) Assessment Scores
- Teacher Pilot Feedback Survey

FINDINGS

Actual implementation model:

Overall, the trend for the middle school students was increasing use of the software, growing from an average of about eight to nine minutes per week in November to 38 to 46 minutes per week in March. At the high school, laptop use was often disrupted when school-wide testing took place. As a result, after the first week of February, student usage dropped significantly from the 23 to 26 minutes per week that was recorded in mid to late January to approximately four minutes per week in February.

Educator engagement: 10 of the 14 teachers enlisted to participate in the MATHia pilot were actively engaged with the program. The most engaged teachers were at the Middle school.

Educator satisfaction: Overall, teachers actively involved in the pilot were very optimistic about the potential utility of MATHia with 83.4% giving the software a rating of 7 or higher on a scale of 1 to 10.

Student engagement: At the middle school, student and teacher use of MATHia increased as the pilot went on. However, at the high school the use of the program by students and teachers decreased over time.

Student satisfaction: Middle school teachers reported that students enjoyed the software and found the ability to use avatars appealing.

Student learning: The Middle School classrooms using MATHia showed higher average percentile increases on the STAR assessment in all grades when compared to those classrooms at the same grade level not using the software. This increase was most notable in sixth grade where the average percentile change for students using MATHia was 13.25 percentile points as compared to 1.33 percentile points for students in classes where the software was not used. While we cannot attribute these changes solely to MATHia, they are worthy of attention.

OUTCOME

Purchasing Decision: Based on these results, the middle school implementation was scaled up to include two additional middle schools during the next school year. The high school implementation was postponed until blended learning coaching, more regular math coach support, and use of computers could be more consistent.