Examining the Long-Term Effects of the ASSISTments Intervention on Middle School Mathematics

Due to the promise of technology as a tool for improving mathematics education and closing the achievement gap, the use of educational technology in K–12 education has expanded dramatically in recent years, accelerated by the COVID-19 pandemic.

ASSISTments is a research-based, online platform that allows teachers to assign and review math work. The platform works with any curriculum and provides teachers with real-time diagnostic reports that allow them to see which students struggled the most and which problems most commonly had the wrong answers. ASSISTments also provides students with immediate feedback and allows them to redo their work.

Research Overview

A 2013–2016 efficacy study found that using ASSISTments significantly increased 7th grade student scores on the TerraNova Common Core assessment. A second study, led by WestEd from 2018–2020, tested the replicability of these findings in a population that more closely matches national demographics. In 2021, a follow-up study was conducted to measure the long-term impact of ASSISTments. The study aimed to address two primary questions:

- Are there any **long-term impacts** of ASSISTments on student math outcomes measured at the end of 8th grade, 1 year after the completion of the intervention?
- Do the **impacts vary across student populations** (e.g., socioeconomic status, race/ethnicity, and other policy-relevant characteristics)?

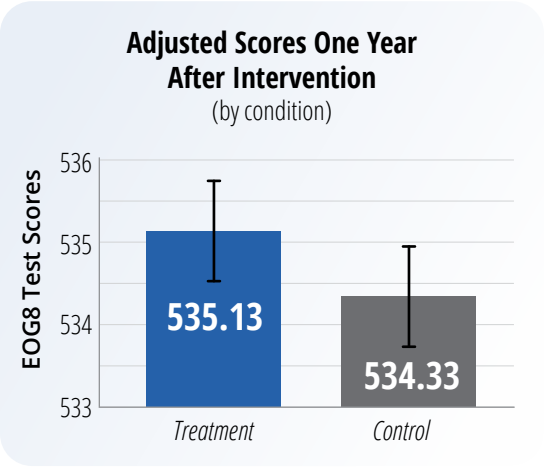
Promising Findings

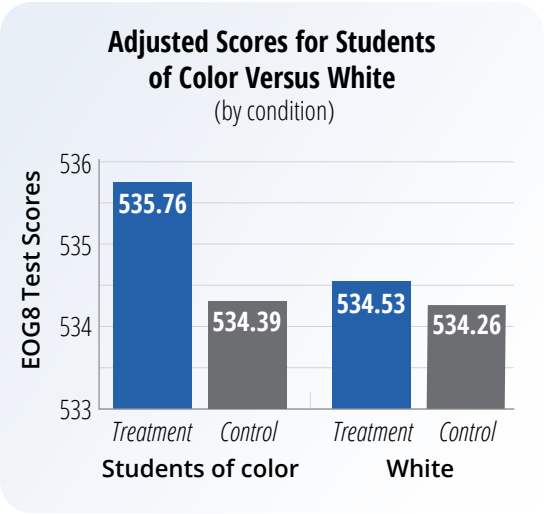
Long-term impacts

Study findings suggest that the ASSISTments intervention has a long-term effect on middle school students' math learning. The results show that **treatment students performed significantly better than control students on the Grade 8 North Carolina End-Of-Grade (EOG) Mathematics test**, 1 year after the study intervention concluded.[1]

Impacts across student populations

When tested at the end of 6th grade, students of color tended to score 2 points *lower* than White students. By 8th grade both students of color and White students in the treatment group scored higher than their counterparts in the control group. Notably, in the treatment group, **students of color scored *higher* than White students**, after adjusting for their EOG scores at 6th grade. There was no significant difference in the control group between students of color and White students. This suggests that the intervention benefited students of color significantly more than White students.[2] In addition, among non-White students, the analysis suggest that the intervention benefited Hispanic students more than non-Hispanic students.[3]





[1] Treatment student scored 0.8 points higher than control students. This difference is statistically significant at .05 level ($p = 0.011$) and corresponds to an effect size of 0.10, based on Hedges' g statistic.

[2] The intervention benefited minority students and students of color more than white students ($p = 0.003$, Hedges' $g = 0.14$).

[3] The intervention benefited Hispanic students more than non-Hispanic students ($p = 0.014$, Hedges' $g = 0.13$).

The *Efficacy of ASSISTments Online Homework Support for Middle School Mathematics Learning: A Replication Study* was conducted by WestEd with funding from the U.S. Department of Education's Institute of Education Sciences (IES). The follow-up study was made possible with funding from the Arnold Ventures. For more information about ASSISTments, visit new.assistments.org.

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