

Students using *enVision Mathematics 6–8* Show Greater Math Scores than Matched Comparison Students Research Brief

Key Finding

A quasi-experimental study found *enVision Mathematics 6–8* students achieved greater statistically significant Spring 2023 math proficiency scores over the matched comparison group.

Introduction

To determine the effectiveness of *enVision Mathematics* in helping students gain valuable math skills, a quasi-experimental study was conducted by JEM & R1, an independent research and evaluation firm. Analyses were conducted that compared assessment data of confirmed *enVision Mathematics* users in grades 6–8 from New Jersey, North Carolina, and Ohio and matched comparison schools identified by Propensity Score Matching. This study was designed to meet WWC Standards with Reservations by: 1) ensuring baseline equivalence, and 2) matched sample being created independently by an external party without reference to the outcome.

About *enVision Mathematics 6–8*

Published by Savvas, *enVision Mathematics 6–8* features problem-based and visual learning to develop a deeper understanding of math concepts. According to the publisher, the program features resources that encourage student choice and support learning in both the classroom and at home as well as digital content with Savvas Realize. Grounded in research, each lesson utilizes core instruction that has been shown to be beneficial in helping students acquire conceptual understanding.

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A full comprehensive report with technical details will soon be available.

Study Design and Methodology

To examine whether *enVision Mathematics* is associated with more enhanced mathematics performance, schools that used *enVision Mathematics* during the 2022–23 school year were compared to closely matched control schools. Specifically, school level state assessment data was obtained, and analyses were performed to address the impact of *enVision Mathematics* among middle schools in New Jersey (NJ), North Carolina (NC), and Ohio (OH). These states were chosen given their usage of *enVision Mathematics*; the top usage states were selected for the study. Savvas identified schools/districts within these states that used *enVision Mathematics* during the 2022–23 school year and provided a list of confirmed schools/districts to the research team.

To evaluate the impact of *enVision Mathematics*, a comparison group was identified using Propensity Score Matching (PSM). Specifically, confirmed treatment schools were matched to schools that were similar in terms of school enrollment, student subpopulation distributions, and baseline (2022) math performance within their respective state. This was conducted separately for each grade-level.

Measures

The New Jersey Student Learning Assessments (NJSLA) have been in use since the 2018–19 school year to assess students' progress toward the New Jersey Student Learning Standards in grades 3–8. According to the New Jersey Department of Education, the mathematics portion of the assessment focuses on applying skills and concepts and understanding multi-step problems that require abstract reasoning and modeling real-world problems, precision, perseverance, and strategic use of tools.

The North Carolina End-of-Grade (EOG) Tests are designed to measure student grade level proficiencies on the North Carolina Standard Course of Study for reading, and math. The EOG mathematics test has been in use since the 2018–19 school year and standards were set as a collaborative effort by North Carolina educators. Cut scores were established to identify four proficiency levels as well as college and career readiness standards.

Ohio's State Tests (OST) in English Language Arts, Mathematics, Science and Social Studies have been in use since the 2015–16 school year to measure state learning standards in grades 3–8. Each item in the assessment is rated on a scale for Depth of Knowledge (DOK) or complexity of thinking required to complete an item. Each assessment includes a mix of items that require recall, skills/concepts and strategic thinking.

The present study uses math proficiency rates from the NJSLA, NCEOG, OST.

Sample

The study's sample includes schools with grade 6–8 students in NJ, NC and OH.

Table 2 displays the baseline characteristics for each group and student subpopulation. Given that schools were matched on key demographic variables, it is not surprising that *enVision Mathematics* schools were very similar (and not significantly different) to matched schools. Of note, the state education departments block access to test scores for students within subpopulations (and combinations thereof) when there are less than 10 students. As a result, the schoolwide sample sizes

are smaller than the actual data that is available for each school. As a result, the schoolwide sample sizes are smaller than the actual data that is available for each school. There were 353 *enVision Mathematics* and 715 control schools (total of 1068 schools) represented in the sample.

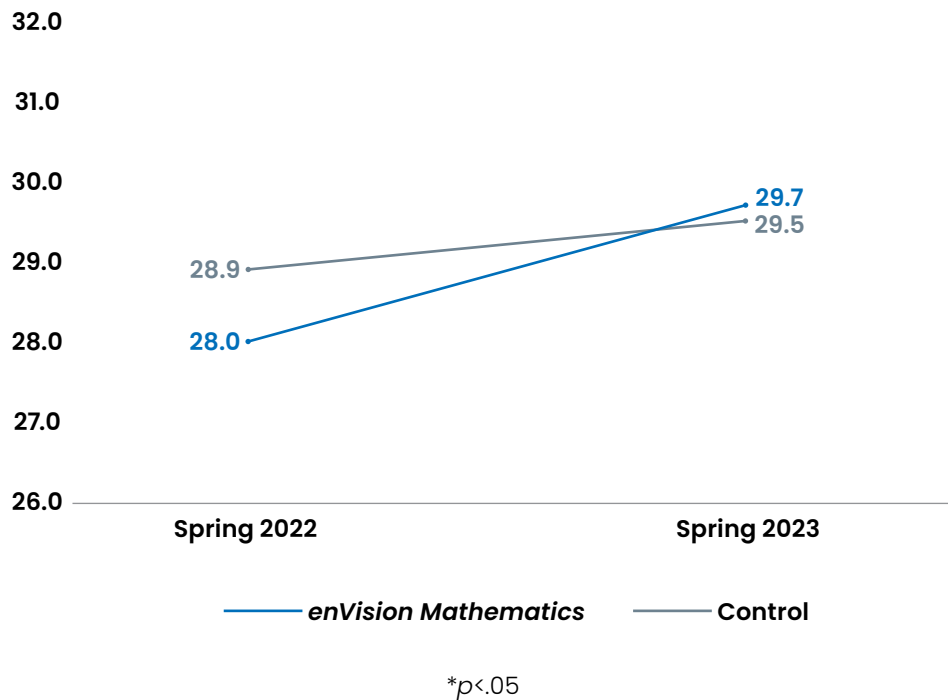
Table 2. Study Sample Characteristics

Group	Category	<i>enVision Mathematics</i>	Control	Total
Total	All Students	929	929	1858
Grade (# of Schools within Grade)	6	332	332	664
	7	314	314	628
	8	283	283	566
Gender (%)	Male	51.24%	51.18%	51.21%
	Female	48.54%	48.57%	48.55%
Race/ Ethnicity (%)	African American	22.34%	23.01%	22.68%
	Hispanic	28.74%	28.09%	28.42%
	White	41.34%	41.08%	41.21%
	Asian, Not Hispanic	4.26%	4.60%	4.43%
	American Indian or Alaska Native	0.96%	1.07%	1.02%
	Native Hawaiian or Pacific Islander	0.14%	0.14%	0.14%
Subpopulations (%)	Students with Disabilities	16.15%	16.07%	16.11%
	Economically Disadvantaged	54.14%	55.01%	55.58%
	English Language Learner	9.50%	9.04%	9.27%

Results

To examine differences in math performance in Spring 2023 between schools using *enVision Mathematics* relative to schools that did not use *enVision Mathematics*, linear regression models were determined after controlling for Spring 2022 performance. The percent of students proficient in math among *enVision Mathematics* schools and comparison schools in Spring 2022 and Spring 2023 are presented in Figure 1. As shown, schools that used *enVision Mathematics* demonstrated statistically significantly higher scores than schools that did not use *enVision Mathematics*, $p < .05$. In particular, the average percentage of students in *enVision Mathematics* schools that were proficient in math in 2023 was higher (1.0%) as compared to comparison schools.

Figure 1. Comparing Performance on State Math Assessments
in *enVision Mathematics* and Control Schools



Conclusions

The relationship between student math performance in grades 6–8 and the efficacy of *enVision Mathematics* was investigated in a quasi-experimental research study. Findings demonstrated that *enVision Mathematics* has a positive effect on students' mathematical proficiency. Overall, *enVision Mathematics* students demonstrated greater statistically significant Spring 2023 scores as compared to students in comparison schools, after controlling for Spring 2022 performance. The findings of this quasi-experimental study broaden the body of knowledge and offer further evidence in favor of the link between improved student math performance and *enVision Mathematics*.