

Edgenuity®

Pathblazer®

WHITE PAPER

# Impact Evaluation: Mathematics

Conducted by Basis Policy Research

Basis Policy Research, an independent research firm, examined the impact of Edgenuity Pathblazer® on 421,195 students in kindergarten through eighth grade in 34 states. The firm compared NWEA™ MAP® math scores of K–8 students who used Pathblazer to those who did not during the 2014–2015 school year.

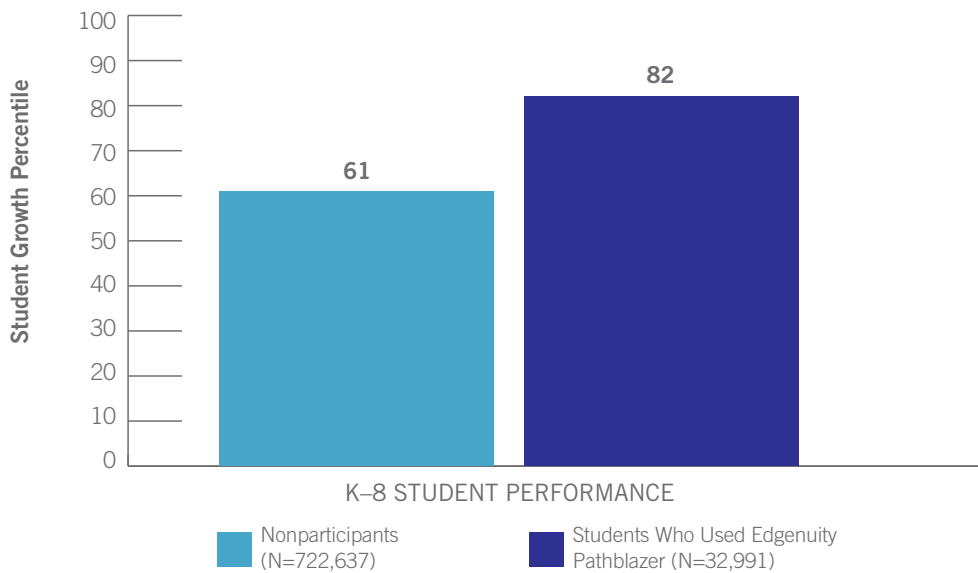
Overall, results suggest that Edgenuity Pathblazer had a quantifiable, positive effect on students' NWEA MAP assessment performance.

## RESULTS

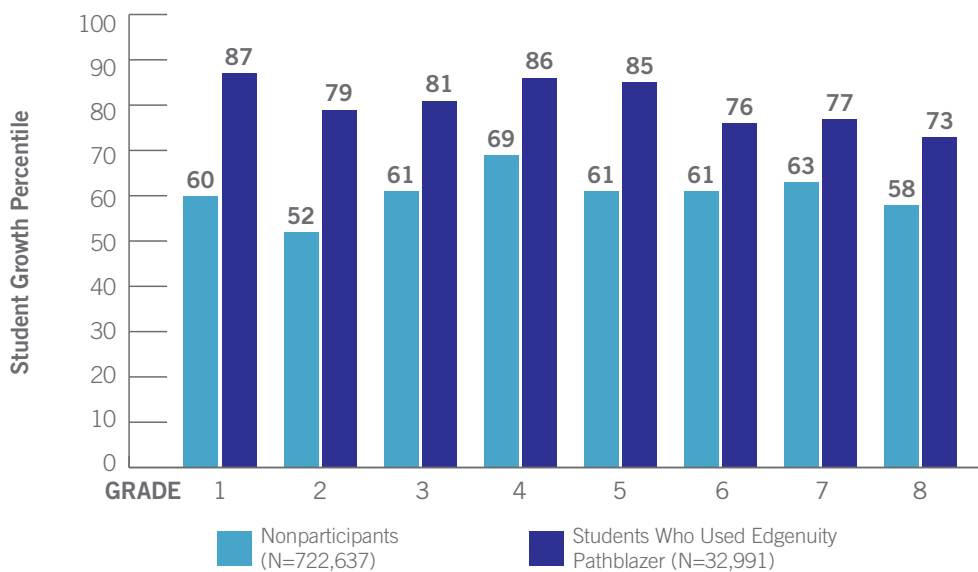
Researchers examined student growth percentiles (SGPs) to compare student growth with national norms of expected growth. The SGP is a student's percentile rank for growth.

Results showed that across all goal-strands and grades, Edgenuity Pathblazer students performed at a higher SGP, on average, than nonparticipants for all grade and goal-strand combinations. Overall, in K–8 math, the fall to spring performance growth of Edgenuity Pathblazer students was in the 82nd percentile, and the growth for students who did not use the program was in the 61st percentile. This means that Edgenuity Pathblazer students **outperformed 82 percent** of students nationally, whereas nonparticipants outperformed 61 percent of students nationally.

Student Performance on the NWEA MAP Math Assessment, 2014 and 2015



Student Performance on the NWEA MAP Math Assessment, by Grade, 2014 and 2015



For each grade level and goal-strand combination, the study estimated the impact of participation in Edgenuity Pathblazer compared to nonparticipation on spring NWEA MAP Math performance. Researchers calculated a statistical estimate, or the average spring performance score difference between participants and nonparticipants. They also calculated the effect size estimates, to provide insight into the magnitude of the findings.

	STATISTICAL ESTIMATE	EFFECT SIZE
<b>KINDERGARTEN</b>		
Geometry	7.34	0.58
Measurement and data	8.40	0.65
Numbers and operations	6.25	0.50
Operations and alg. thinking	7.31	0.61
<b>1ST GRADE</b>		
Geometry	6.42	0.53
Measurement and data	7.57	0.61
Numbers and operations	5.82	0.49
Operations and alg. thinking	4.16	0.38
<b>2ND GRADE</b>		
Geometry	6.03	0.49
Measurement and data	3.49	0.30
Numbers and operations	3.63	0.31
Operations and alg. thinking	3.53	0.30
<b>3RD GRADE</b>		
Geometry	7.20	0.57
Measurement and data	1.94	0.18
Numbers and operations	3.64	0.30
Operations and alg. thinking	3.15	0.27

	STATISTICAL ESTIMATE	EFFECT SIZE
<b>4TH GRADE</b>		
Geometry	6.85	0.51
Measurement and data	1.41	0.14
Numbers and operations	3.25	0.26
Operations and alg. thinking	1.73	0.16
<b>5TH GRADE</b>		
Geometry	6.02	0.42
Measurement and data	1.22	0.12
Numbers and operations	3.96	0.30
Operations and alg. thinking	1.52	0.15
<b>6TH GRADE</b>		
Geometry	2.66	0.20
Operations and alg. thinking	2.45	0.19
<b>7TH GRADE</b>		
Geometry	2.36	0.18
Operations and alg. thinking	2.24	0.17
<b>8TH GRADE</b>		
Geometry	2.21	0.16
Operations and alg. thinking	1.60	0.13

Results showed that math effect sizes ranged from 0.12 to 0.65 for participants, suggesting a modest to strong impact on student learning. Standards vary, but the U.S. Department of Education’s What Works Clearinghouse defines those interventions with effect sizes above 0.25 as “substantively important.”

**NOTE:** The statistical estimate is from the hierarchical linear modeling (HLM) model for a particular grade level and goal-strand analysis. The effect size was calculated by dividing the product effect by the norm-referenced standard deviation for spring NWEA RIT Math scores for specific grade levels.

## RESEARCH METHOD

To assess the impact, as well as compare this program to others, Basis Policy Research compared the outcomes of Edgenuity Pathblazer participants with those of nonparticipants within each goal-strand and grade combination. “Participants” were defined as students who have completed 18 to 25 activities within a goal-strand or completed all of the 12 to 17 assigned Edgenuity Pathblazer activities in their learning path. “Nonparticipants” were defined as students who did not use Edgenuity Pathblazer.

To conduct this study, the researchers used data from Northwest Evaluation Association™ (NWEA) Measures of Academic Progress® (MAP) assessments administered in the fall and spring. Only students who had scores for both assessments were included in the sample, and some grade levels had to be dropped from certain goal-strand analyses due to low participant counts. Using this data, they conducted several analyses to compare participant performance to nonparticipants: a descriptive analysis, an inferential analysis using HLM, and an SGP analysis.

## RESULTS

Overall, the results suggest that Edgenuity Pathblazer’s learning acceleration solutions had a quantifiable, positive effect on students’ NWEA MAP assessments. SGP analyses revealed that nonparticipants and participants exceeded the national fall-to-spring growth average, and Edgenuity Pathblazer participants had higher average SGPs than nonparticipants.

Standards vary, but the U.S. Department of Education’s What Works Clearinghouse defines those interventions with effect sizes above 0.25 as “substantively important.” Results for math at goal-strands resulted in effect sizes up to .65 for participants.

Average participant SGPs ranged from the 71st to 95th percentile, while average nonparticipant SGPs ranged from the 47th to 73rd percentile. Contextually, this finding implies that participating students’ fall-to-spring average math performance growth was higher than 71 percent to 95 percent of U.S. students.

## ABOUT EDGENUITY

Edgenuity is a leading provider of digital curriculum and instructional services for the K–12 market. Our products are used in nine of the top 15 U.S. school districts to help educators address their students’ most critical academic needs. School districts use Edgenuity online solutions to improve student outcomes, including Edgenuity’s Courseware™ for initial credit and credit recovery, Pathblazer® and MyPath™ for intervention, and UpSmart™ to prepare for state assessments.