

# Research Brief

## Sierra Middle School

DOUGLAS COUNTY SCHOOL DISTRICT, COLORADO



Edgenuity students exceed growth expectations on the NWEA® MAP® Growth™ assessments after one year of Hybridge

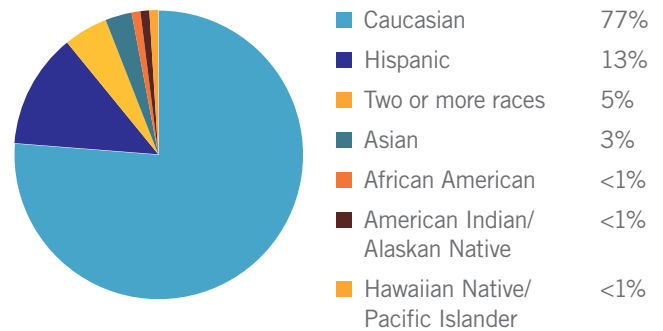
### Evaluation Overview

**Grades:** 7 and 8

**Model:** Rotational Model

**Measure:** Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) Growth Reading and Math Assessments

### Sample Demographics



### School Overview

Sierra Middle School (SMS) is located in Parker, Colorado, an affluent suburb about 24 miles south of Denver. The comprehensive middle school enrolls 972 students in 7th and 8th grade. Approximately 77 percent of students are Caucasian, 13 percent are Hispanic, 3 percent are Asian, and 5 percent are two or more races. About 18 percent of students are eligible for free or reduced-price lunch.

While SMS students have a long history of outperforming their peers in the state on standardized tests of reading and mathematics, student growth had slowed. In 2015, the school purchased Edgenuity Hybridge as a way to accelerate all students' learning. The goal was to implement a blended learning program that would provide more opportunities for students to apply academic knowledge, self-reflect, and think critically about complex problems.

### Implementation

During the 2016–2017 school year, teachers integrated Edgenuity Hybridge into 90-minute English language arts and mathematics blocks one to three days per week. During each block class period, teachers typically divided their class into three groups for rotations. While the first group used Hybridge software, a second group worked independently on reading or mathematics activities. At the same time, the teacher provided remediation, challenge, and/or support to a third group of students. After 30 minutes passed, the students switched to their second rotation, and after another 30 minutes to the final rotation.

Students performing at the 15th percentile or below on standardized assessments received an additional 90 minutes of instructional time, either during or after school. Part of this additional time was used to complete activities in Hybridge.

Teachers expected students to complete a minimum of three activities per week. Students who demonstrated significant reading or math deficiencies were encouraged to complete six to eight activities per week. To encourage students to take the content seriously, teachers assigned a grade to both the work done in Pathblazer and students' NWEA MAP Growth assessments.

## Study Sample

This report tracks the performance of 986 Sierra Middle School students who used Edgenuity Hybridge during the 2016–2017 school year.

## Measures

### Edgenuity Program Data

Edgenuity Hybridge tracks a wide array of student progress, engagement, and achievement data. This study collected data on the total number of students, the total number of activities completed in each learning path, and the average time spent per student.

### Northwest Evaluation Association Measures of Academic Progress Growth

Developed by the Northwest Evaluation Association (NWEA), the Measures of Academic Progress (MAP) Growth Reading, Language Usage, and Mathematics tests are Common Core–aligned, computer-adaptive assessments administered to students in grades K–12. If a student answers correctly, the next question is more difficult; if a student answers incorrectly, the follow-up item is easier. Tests are typically administered three times a year. Each MAP Growth assessment uses the Rasch unit (RIT), an equal interval scale score, to measure student growth and determine student mastery of various defined skills within disciplines, which inform individualized learning paths in Edgenuity Hybridge.

In 2011, the NWEA conducted a study describing how more than 5.1 million students in grades K–11 performed on the NWEA assessments at three different time points during the year. By testing students who had the same characteristics as the U.S. school population, the study provided grade-specific, rank-ordered distributions of performance. This information can be used to determine how a single student, a school, or an entire district's performance or growth compares to a much larger group—a normative sample.

## Results

### Software Usage

Edgenuity usage data were collected for 978 Sierra Middle School students who were assigned online reading activities and 960 students who were assigned online math activities. Results showed that on average students spent just over an hour and completed 2.3 activities per week in each subject (Figure 1).

**Figure 1. Sierra Middle School Edgenuity Hybridge Students, Grades 7–8**

Edgenuity Hybridge Online Reading and Math Activity Data, Fall 2016 to Spring 2017

Subject	Number of Students	Average Time Spent per Student per Week (minutes)	Average Number of Activities Completed per Student per Week
Reading	978	67.1	2.7
Math	960	68.3	1.8

### Northwest Evaluation Association Measures of Academic Progress Growth

To measure changes in student achievement, NWEA MAP Growth data were obtained from 855 Sierra Middle School reading students and 692 math students who used Edgenuity Hybridge and had fall 2016 and spring 2017 reading and mathematics assessment data. Findings show that Edgenuity Hybridge students demonstrated statistically significant gains on the NWEA MAP Growth Reading and Math assessments. The two tables below show how the grade level performance of Edgenuity Hybridge students on the NWEA MAP Growth tests compared to their peers in the national norm group. In Reading, Edgenuity 7th grade students improved 4.7 points versus the 3.1 points expected based on national norms, while 8th grade students improved 4.1 points versus the 3.4 points expected based on national norms (Figure 2). In Math, Edgenuity 7th grade students improved 7.6 points versus the 4.9 points expected by national norms, while 8th grade students improved 4.8 points versus the 4.3 points expected by national norms (Figure 3).

**Figure 2: Sierra Middle School Edgenuity Hybrid Students, Grades 7–8 (N = 855)**

Performance on the NWEA MAP Growth Reading Assessment, Fall 2016 to Spring 2017

Grade	Number of Students	Fall 2016 RIT	Spring 2017 RIT	RIT Gain (*p<0.05)	Expected RIT Gain (National Norm)
7	408	217.5	222.1	4.7*	3.1
8	447	222.0	226.2	4.1*	3.4
<b>All Students</b>	<b>855</b>	<b>219.8</b>	<b>224.2</b>	<b>4.4*</b>	—

**Figure 3: Sierra Middle School Edgenuity Hybrid Students, Grades 7–8 (N = 692)**

Performance on the NWEA MAP Growth Math Assessment, Fall 2016 to Spring 2017

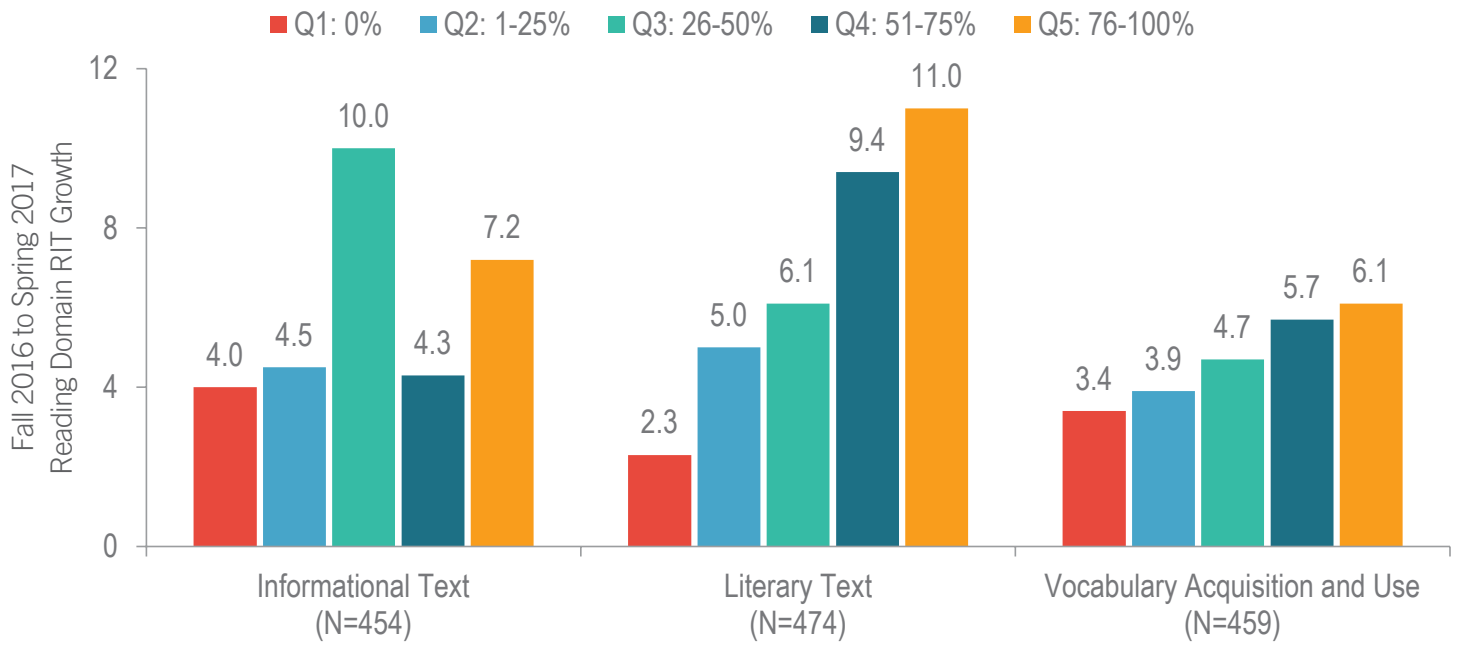
Grade	Number of Students	Fall 2016 RIT	Spring 2017 RIT	RIT Gain (*p<0.05)	Expected RIT Gain (National Norm)
7	406	226.0	233.6	7.6*	4.9
8	286	230.7	235.5	4.8*	4.3
<b>All Students</b>	<b>692</b>	<b>228.0</b>	<b>234.4</b>	<b>6.4*</b>	—

Work was assigned to students in folders, or units of conceptually grouped activities. Data showed that there was a relationship between the percentage of Hybrid folders completed and improvement on the NWEA MAP Growth domain assessments. For the large majority of participants in grades 7 and 8, SMS students who completed 75 percent or more of the instructional learning path (ILP) activities in an NWEA domain area improved 1.8 to 7.25 times more on the NWEA MAP Growth domain assessments (fall 2016–spring 2017) than their peers who had only classroom instruction in the same domain area (Figures 4 and 5).

For example, SMS students who completed 75 percent or more of their ILP in Data Analysis: Statistics and Probabilities showed 11.6 points improvement, compared to their peers who only had classroom instruction and improved an average of 1.6 points.

**Figure 4: Sierra Middle School Edgenuity Hybrid Students, Grades 7–8**

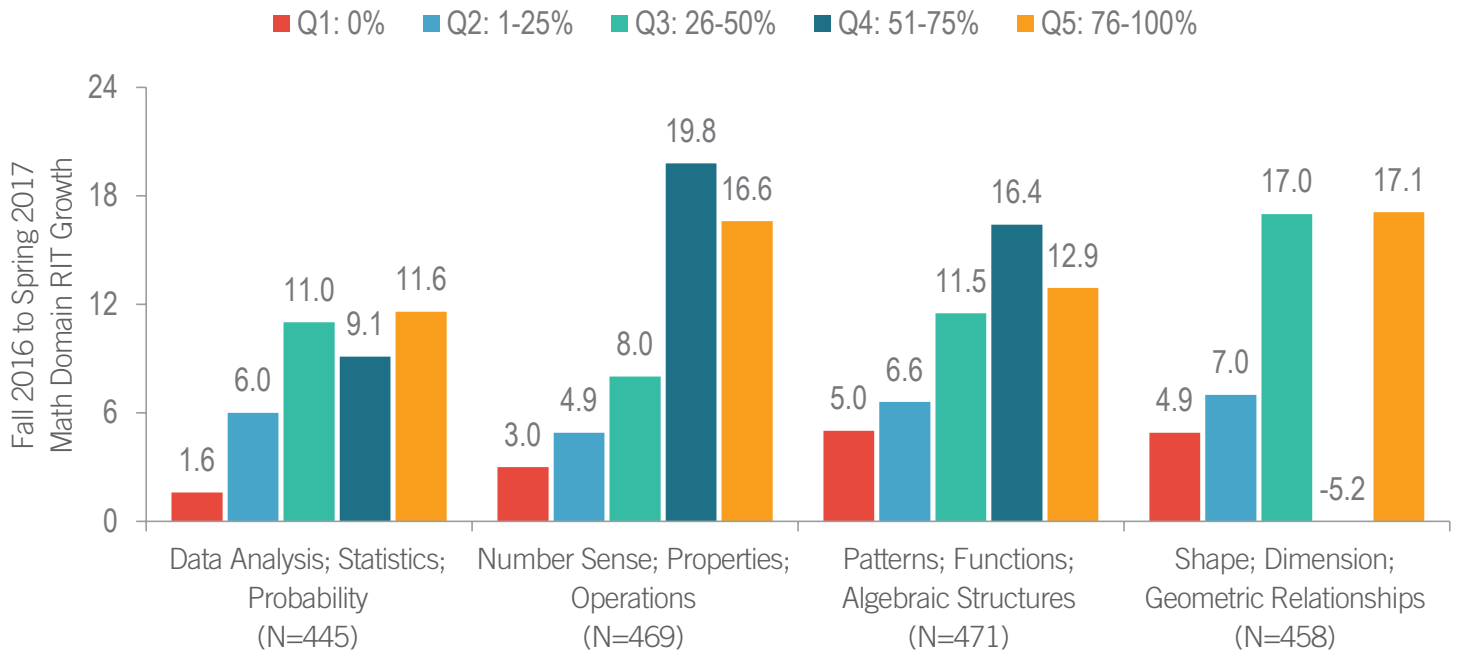
Average on the NWEA MAP Growth Reading Assessment, by Domain, by Percentage of Activities Completed, Fall 2016 to Spring 2017



Number of Students per Domain	Q1: 0%	Q2: 1-25%	Q3: 26-50%	Q4: 51-75%	Q5: 76-100%
Informational Text	82	261	65	20	26
Literary Text	144	184	77	39	30
Vocabulary Acquisition and Use	92	94	105	66	102

**Figure 5: Sierra Middle School Edgenuity Hybrid Students, Grades 7–8**

Average on the NWEA MAP Growth Math Assessment, by Domain, by Percentage of Activities Completed, Fall 2016 to Spring 2017



Number of Students per Domain	Q1: 0%	Q2: 1-25%	Q3: 26-50%	Q4: 51-75%	Q5: 76-100%
Data Analysis; Statistics; Probability	207	157	45	17	19
Number Sense; Properties; Operations	223	188	37	10	11
Patterns; Functions; Algebraic Structures	246	175	36	7	7
Shape; Dimension; Geometric Relationships	249	174	22	4	9

## Conclusion

In conclusion, results from this study provide evidence that SMS students benefited from participation in Edgenuity online Hybrid activities. From fall 2016 to spring 2017, SMS students enrolled in Hybrid made significant improvements in their reading and math skills, as measured by the NWEA MAP Growth assessments. Findings also show that after using Edgenuity for a year, students outperformed their peers on the Reading and Math RIT scales.

Moreover, students who completed more than 75 percent of their assigned folders typically demonstrated greater growth on the NWEA MAP Growth Reading and Math assessments than their peers who received only face-to-face instruction.