Raising Test Scores for Struggling Students

A study of grade 2-5 students found that those who regularly used Reflex achieved substantially higher growth on a nationally-normed mathematics assessment than their lower using classmates and peers nationwide.

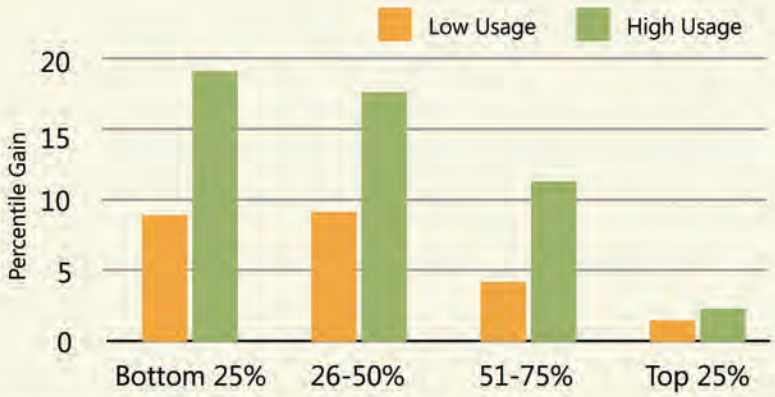
Program

Grade 2-5 students from seven Charlottesville City Schools in Virginia had access to Reflex for the 2013-14 school year. Fall and spring Measures of Academic Performance (MAP) test results of high-usage students were compared to those of students with low or no usage over the same period. Since some students had also used Reflex during the prior school year, an analysis of growth from fall 2012 to spring 2014 was also performed.

The Northwest Evaluation Association (NWEA) MAP Mathematics test is a computer-adaptive assessment used in many U.S. school districts. By administering the test multiple times during a school year, educators can gain a detailed picture of each student's current mathematical level and measure student growth over time. Because the test is nationally-normed, they can also compare their students' growth to that of students across the country.

One year study: 2013-14

Students with 40 or more days of usage, plus those who had otherwise achieved 90%+ fluency in Reflex, comprised the high usage group for the 2013-14 school year. The low usage group was made up of students with 0 to 5 days of Reflex usage. To better match student usage measures with the demands of the curriculum, only multiplication and division usage was counted for grades 3 and up.



Students in the high usage group outperformed their low usage and national peers across the board with the largest gains accruing to students who started out in the lower quartiles. Students who started out at or below the 25th percentile, for example, gained an average of 19.3 percentile points compared to their national peers as compared to a 9.1 percentile point gain for the lower usage group.

	Low Usage Group <15 days usage		High Usage Group 60+ days usage	
Initial Percentile Rank	# of Students	Percentile Gain	# of Students	Percentile Gain
0-25%	51	9.1	58	19.3
26-50%	51	9.2	64	17.6
51-75%	47	4.3	100	11.1
76-100%	43	1.4	154	2.1

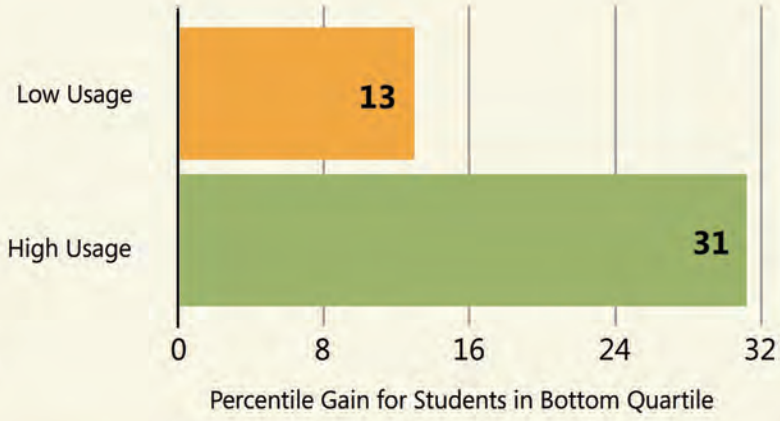
Two-year study: 2012-14

The set-up for the two year-study was identical to the 2013-14 study except for the duration and usage thresholds. The low usage group consisted of students with less than 15 days of usage over the two-year period. Students with 60 or more days of usage, plus students who had otherwise achieved 90%+ fluency in Reflex multiplication and division, comprised the high usage group.

Like the 2013-14 study above, the 2012-14 study showed increases in percentile rank across the board, with high Reflex users substantially outperforming lower users and their national peers. Percentile rank gains were again highest in the lower quartiles.

High using students that started in the lowest 25 percent of students nationally gained 31 percentile points, with **79 percent moving out of the lowest quartile and over 30 percent moving into the upper half of students nationally.**

	Low Usage Group <15 days usage		High Usage Group 60+ days usage	
Initial Percentile Rank	# of Students	Percentile Gain	# of Students	Percentile Gain
0-25%	44	13.0	48	31.0
26-50%	27	7.2	67	16.6
51-75%	27	6.6	89	9.4
76-100%	25	-0.4	147	2.6



See more results @ www.reflexmath.com/results