Imagine Math: Usage Correlated with Higher Proficiency Scores on STAAR Assessment

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Background

Imagine Math is a rigorous, standards-aligned math program that personalizes learning for each student. Students are immersed in a language-rich curriculum that uses data to scaffold concepts for each learner, ultimately leading to deep understanding of math concepts and college- and career-readiness. Because the system is adaptive, students learn in their zone of proximal development with the right degree of challenge.

The State of Texas Assessments of Academic Readiness (STAAR) program is the state testing program in Texas. It was implemented in the 2011–2012 school year and includes assessments in various grades for reading, mathematics, writing, science, and a collection of end-of-course assessments. In addition to a student needing to pass each end-of-course assessment to qualify for high school graduation, students in fifth and eighth grade also need to pass the assessments in those years to qualify for promotion to the next grade. Districts are accountable for student performance on the STAAR assessments.

Method

This study examines the correlation between student usage of Imagine Math and performance on the STAAR Mathematics assessment during the 2017–2018 academic year. A total of 9,176 fifth-grade students in three school districts in Texas used Imagine Math during the 2017–2018 academic year and completed the STAAR Mathematics assessment.

Results

The results of this study indicate a moderate positive relationship between the total number of Imagine Math lessons passed and the STAAR Mathematics assessment scale score (Pearson's correlation coefficient is 0.40).

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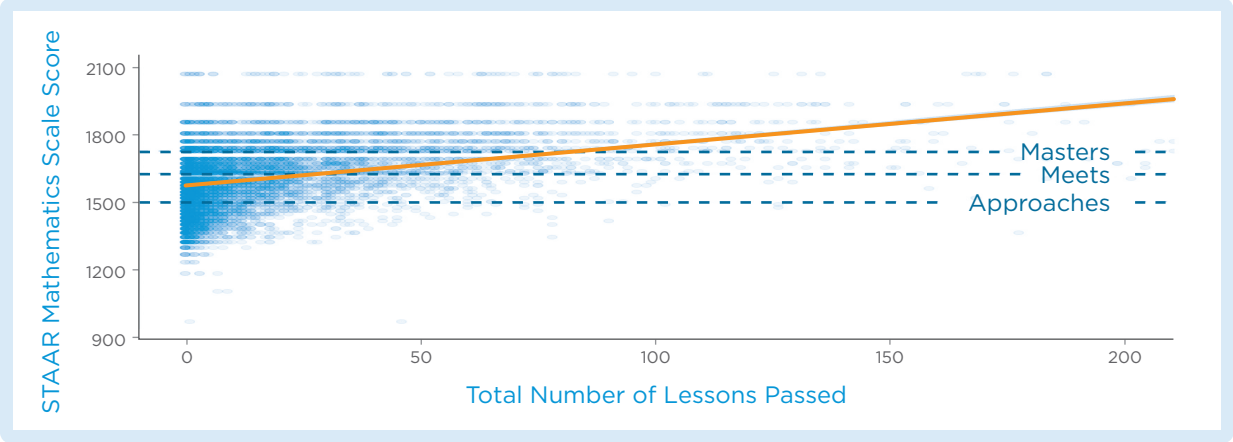
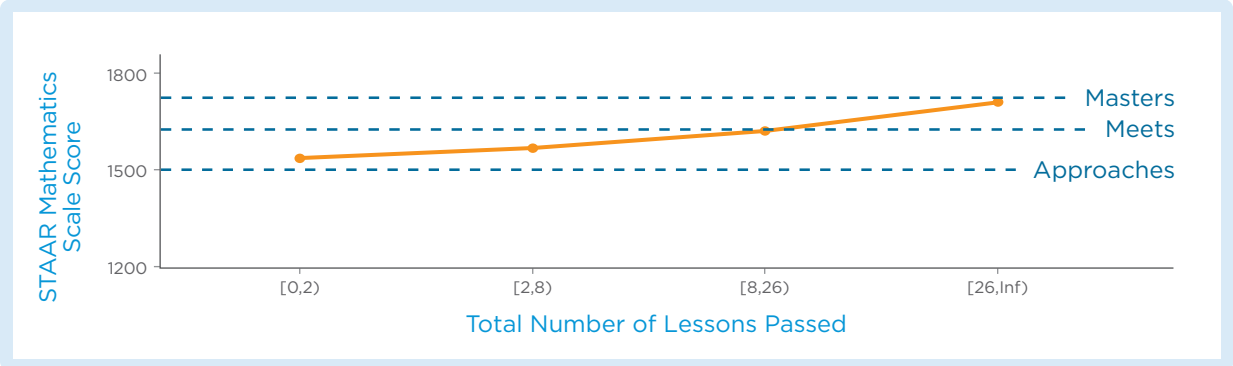
Figure 1 illustrates this correlation. The horizontal dashed lines represent the threshold scale scores for achieving the "Approaches," "Meets," and "Masters" levels of proficiency. Achieving at least the "Approaches" level is required to pass.

Figure 1: STAAR Mathematics scale score versus total number of lessons passed.



The positive relationship between the total number of Imagine Math lessons passed and the STAAR Mathematics scale score is also illustrated in Figure 2. In this figure, the results are presented in intervals of numbers of lessons passed. Four groups were created for the analysis by calculating the quartiles of lessons passed, which show the average scale score for students in the associated group. Students who passed more lessons achieved higher scale scores than students who passed fewer lessons. The horizontal dashed lines represent the threshold scale scores for achieving the "Approaches," "Meets," and "Masters" levels of proficiency. Achieving at least the "Approaches" level is required to pass.

Figure 2: STAAR Mathematics scale score versus quartile of total number of lessons passed.



Conclusions

The results of this study demonstrate that STAAR Mathematics scale scores have a moderate positive correlation with the total number of lessons passed in Imagine Math. Students who passed more Imagine Math lessons demonstrated higher scale scores than students who passed fewer lessons. This provides promising evidence that Imagine Math is effective for fifth-grade students.

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