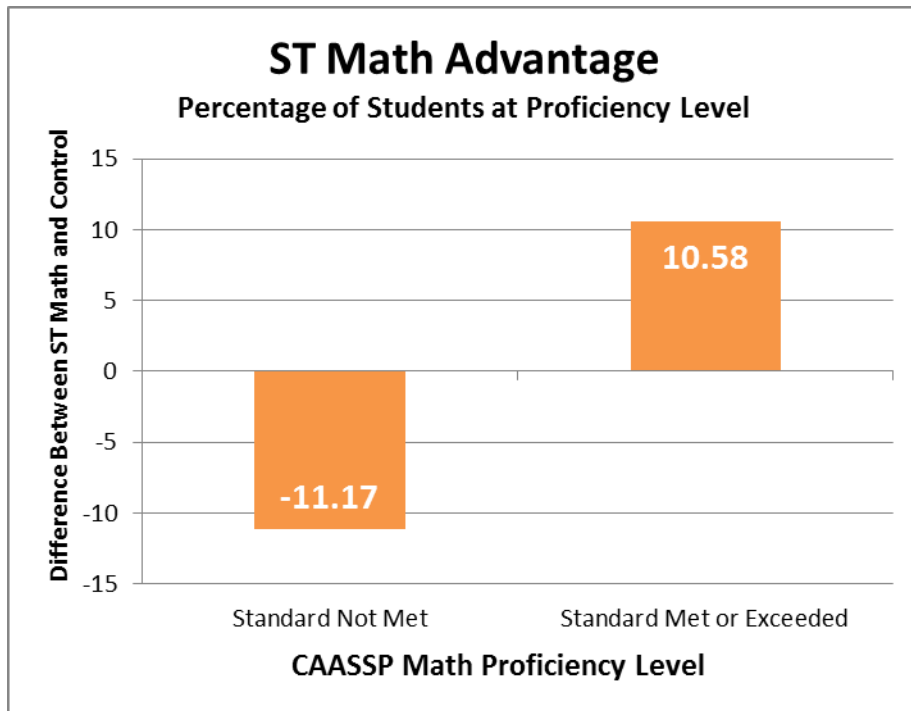


Program: The ST Math® program is based on supplemental math instructional software which covers math standards at each grade level. The software presents the mathematics as a year-long curriculum of interactive, animated visual diagrams, or puzzles, for the students to solve. The students use the self-starting, self-paced instructional software twice per week under the teacher’s supervision. The teacher is trained to also use the software’s visual representations of mathematics concepts during regular classroom lessons, to connect to conventional language-intensive math instruction.

Subjects: The unit of analysis is grade-average math performance. All LAUSD-South ST Math grades 3, 4, or 5 using ST Math from 2013/14 through 2014/15, and reaching average 2014/15 ST Math program content coverage of 50% and grade-level ST Math enrollment of at least 85% were identified – 12 grades at 9 schools representing 1101 students. This ST Math treatment group was then randomly 1:1 matched, by baseline 2012/13 math performance, to a comparison group of grades (Control) from LAUSD that had never used the ST Math program – 12 grades at 12 schools representing 1044 students.

Data Collection: Each ST Math grade’s ST Math user count and average percentage coverage of ST Math content were extracted from MIND’s 2014/15 usage history. Each grade’s CST (2012/13) and CAASSP (2014/15) math proficiency level distributions and student testing counts were downloaded from the California Department of Education website.



Analysis: For each of California’s four* math proficiency levels, the difference in percent of students at that level from 2012/13 to 2014/15 was evaluated using a two-sample t-test comparing the ST Math group to the Control group. Similarly grade average math scale score changes were evaluated. The differential effect of ST Math at each math proficiency level was estimated:

	Estimate	P-Value
Proficient or Advanced	10.58	0.03*
Scale Score	16.06	0.4
Z-Score	0.39	0.09
L1	-11.17	0.02*
L2	0.33	0.94
L3	8.42	0.04*
L4	2.17	0.63

Results: The figure to the left charts the estimated differential effect of ST Math for three different math proficiencies. The left bar shows an effect of 11.17 percentage points ($p < .02$) fewer students using ST Math at the lowest math proficiency Level 1. The right bar shows an effect of 10.58 percentage points more ST Math students who met or exceeded math proficiency Level 3 ($p < .03$).

*To compare 2012/13 with 5 Levels to 2014/15 with 4 Levels, 2012/13 Level 1 (Far Below Basic) & Level 2 (Below Basic) were combined and compared to 2014/15 Level 1.