MIND Research Institute

ST Math Project: Silicon Valley Cohort 1 Growth 2009-2011
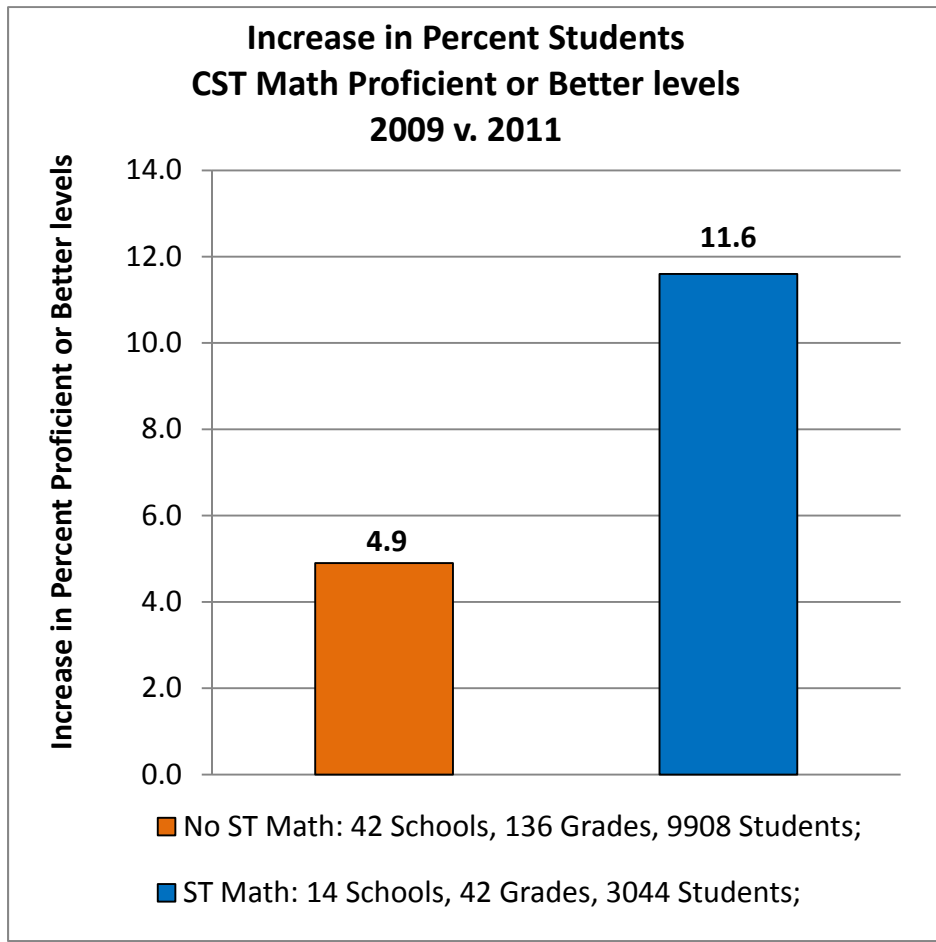
Subjects: MIND Research Institute analyzed schools in the Silicon Valley area for California Standards Test (CST) math proficiency growth in the 2010/11 school year. Eligible schools from a list of the lowest 30% in CST math performance were invited to a launch event and applied for startup grants for MIND's ST Math software. This Math Project is funded by local philanthropy, and designed to increase math achievement at lower performing schools through deployment of a research-based math teaching and learning approach, implemented via student use of visual math instructional software. All grants-funded schools that began to use ST Math in the 2009/10 school year, and covered on average 50% or more of the software content were analyzed. This report focuses on 14 of these schools implementing the program at grade 2, 3, 4, and/or 5 for 2 years, with altogether 42 grades and 3044 students. The comparison set was chosen to be similarly performing schools in the Silicon Valley area, also in the bottom 30% of math performance statewide, which did not participate: 42 schools, 136 grades, 9908 students.

Increase in Percent Students CST Math Proficient or Better levels 2009 v. 2011

No ST Math: 42 Schools, 136 Grades, 9908 Students; — 4.9

ST Math: 14 Schools, 42 Grades, 3044 Students; — 11.6

Program: In each grade using the program, all students and teachers are licensed to participate. The ST Math program consists of supplemental math instructional software which covers California 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 the conventional language-intensive math instruction.

Data Collection: The average CST math achievement scale scores, proficiency levels distributions, and student enrollment, were collected for each grade level for the years since 2008/09 from the California Department of Education website. Each year the data indicate the percentage of students at each grade who tested into the 5 different levels of math achievement. The average MIND Research Institute program implementation percentage and student enrollment in the MIND software were collected from MIND's usage data.

Analysis Summary: The average changes for 2 years in mean scale score and the average changes for 2 years in percentage of students at proficient or advance levels among treatment schools were compared to the same measurements among control groups. A grade-wise growth comparison was evaluated (i.e. 2 years growth in the same grade, at the same school, from the 2008/09 school year to 2010/11 school year) and then aggregated across grades and schools.

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Results: *Above*: the grades implementing ST Math grew 11.6 points in percentage of students at proficient or above as compared to 4.9 points in the comparison group (p-value <0.01). *Below*: Grades that used ST Math had an average increase of 27.5 units in their CST scale score (from 363.5 to 390.9,), as compared to an increase of 12.3 points in the comparison group (p-value < 0.01).

Grade 2-5 CST Math Mean Scale Score 2009 to 2011

No ST Math (42 schools, 136 grades, 9908 students)
ST Math (14 schools, 42 grades, 3044 students)

Grade 2-5 CST Math Scale Score Growth 2009 to 2011

No ST Math: 42 Schools, 136 Grades, 9908 Students;
ST Math: 14 Schools, 42 Grades, 3044 Students;