

Cultivating Learning and
Positive Change

**Case Study Research of *Study Island* in
California**

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INTRODUCTION

Study Island is a web-based standards mastery program that combines highly specific and dynamic content with real-time reporting to create a customized assessment, diagnostic, and instructional program based on each state's standards. The content of the *Study Island* program is unique to each state and provides assessment and skill practice in all major subject areas in both tested and untested grade levels.

During program implementation, students answer a customizable set of questions that correspond to a state's standards and learning objectives. If students answer a question incorrectly, the program provides immediate feedback and opportunities for remediation and further learning. The *Study Island* system also uses adaptive testing technology to create individualized learning paths for each student, cycling students down, as needed, to lower levels of practice in skill areas that are building blocks for more difficult skills. This allows students the opportunity to practice continually, build their skills until they reach mastery level for each standard, and demonstrate proficiency at state-required levels. The *Study Island* program also uses motivation tools such as gaming and student-controllable instructional sequences both to engage students and provide students with autonomy over their learning environment.

Through a comprehensive system of assessment and instructional practice tools, the program functions both as an instructional program and a progress-monitoring tool, providing instructors with ongoing and in-depth feedback regarding student progress toward mastery of content standards. Educators can use the system as a stand-alone tutorial program or as a supplement to their classroom curriculum. The flexible nature of the program creates a personalized learning experience for each student, helping instructors to individualize and differentiate instruction in order to meet the needs of all students and target remediation to the areas that are most critical. The web-based platform of the program creates a learning environment that is accessible from any computer connected to the internet, allowing students to practice skills both at school and at home. Through its interactive and flexible instructional platform, *Study Island* provides engaging, ongoing practice and remediation to help students meet their required standards in all major content areas.

Study Island strongly believes that its products must demonstrate proven effectiveness in increasing student learning. As such, it has contracted with Magnolia Consulting, LLC, an external, independent consulting firm specializing in educational evaluation, to provide a summary and extension of pre-existing case study evaluations within the state of California. The purpose of this work is to examine the impact of *Study Island* on student achievement at schools using *Study Island* in order to illustrate the effectiveness of *Study Island*. This California specific report is part of a larger nationwide report, *Case Study Summaries of Study Island*, available through Study Island.

METHOD

The methodology of the full nationwide report, *Case Study Summaries of Study Island*, uses extant data that is available to the public through the state Department of Education databases. The evaluation in the full report employs a quasi-experimental framework with design variations by each case. Data sources for this study include historical, state-level, aggregated achievement data, as well as demographic information for either states or individual *Study Island* schools.

Analyses also vary for each case but include:

- comparisons of student achievement before and after *Study Island* use
- comparisons between schools using *Study Island* and local or state norms
- comparisons of changes in proficiency between schools using *Study Island* and other schools in the district or region not using *Study Island*
- trends in growth of student achievement over time at *Study Island* schools

Specifically, the full study addresses the following overarching evaluation question(s) for each case study exemplar (depending on the data available):

1. Is there significant growth over time in student achievement after the students have used *Study Island*?
2. Is there a significant difference in student achievement between schools using *Study Island* and schools not using *Study Island*?

Evaluators conducted statistical analyses in the full study when possible to quantify changes in achievement or differences in achievement between groups. Because state departments of education typically report student results from state testing in the format of the percentage of students meeting proficiency levels, evaluators chose statistical procedures that evaluate the magnitude of the difference between two percentages to analyze these data points. For example, these procedures allow one to compare the change in the percentage of students meeting standards from one year to the next to determine if there was statistically significant growth in the percentage of students meeting proficiency standards before and after program use. Likewise, one can use these procedures to determine if there was a difference in the percentage of students meeting standards between a school using the program and those schools that did not use the program.

Due to the inherent nature of case study analysis using extant aggregate data, limitations exist with regard to the conclusions that one can draw from these analyses. Without a true experimental design that controls for confounding factors and examines data at a student level, other variables may be interacting with those of interest to produce these results. Although the present report presents findings only from the state of California, the full report includes data and analyses from a variety of states, grade levels, content areas, and learning environments. One can descriptively examine the findings of these analyses together to determine if overarching patterns exist within the data that can support the overall effectiveness of *Study Island*.

This California specific report presents an evaluation of student achievement in science, reading and math at a *Study Island* school in California before and after using *Study Island*.

CALIFORNIA RESULTS

James Madison Elementary

San Leandro Unified School District — San Leandro, California

Table 1.
School Characteristics and Demographics for James Madison Elementary in San Leandro, California

James Madison Elementary (Total Enrollment = 350)	
School Characteristics	N
Type of School	Public
Metropolitan Status	Suburban
Grade Span	PK–5
Number of Teachers	15
Demographics	Percentage
Gender	
Male	54%
Female	46%
English Language Learner	
	26%
Free or Reduced Lunch	
	30%
Ethnicity	
White	16%
Black	13%
Hispanic	25%
Asian Pacific Islander	46%
American Indian	<1%

Background and Analysis

After fifth-grade students at James Madison Elementary began using *Study Island* in the 2006–2007 school year, student achievement scores on the science, reading, and math subtests of the California Standards Test (CST) rose. Specifically, as shown in Figure 1, the percentage of fifth-grade students meeting or exceeding proficient scores in math rose significantly from 35% to 66% ($\chi = 3.30, p < 0.01$) while growth in science and reading, although large, was not significant. Advanced achievement in math was even more pronounced, as shown in Figure 2, the percentage of fifth-grade students reaching advanced proficiency rose significantly ($\chi = 2.61, p < 0.01$) from 10% to 30% after students began using *Study Island*.

Comparing the results of this school to those of the county as a whole, the growth in the percentage of fifth-grade students meeting or exceeding standards in math, science, and reading from 2006–2007 was much greater in the *Study Island* school than within the county as a whole. Within the *Study*

Island school, the change in science was almost triple the gain within the county. The gain in reading was five times the gain within the county, and in math, the *Study Island* school gained 31% while the students within the county only gained 2% (see Figure 3). For fifth-grade students meeting advanced proficiency, the gains from 2006 to 2007 were also greater within the *Study Island* school than the county as a whole with the greatest difference seen on the math subtest. Fifth-grade students at the *Study Island* school gained 20% in the number of students meeting advanced proficiency from 2006 to 2007 while the county experienced 0% growth within this proficiency category (see Figure 4).

Examining just those students in the lowest percentiles (see Figure 5), the percentage of fifth-grade students scoring below basic or far below basic significantly decreased in the areas of reading and math once *Study Island* was introduced ($\chi = 2.47, p < 0.05$; $\chi = 2.09, p < 0.05$, respectively) and this decrease approached significance in science ($\chi = 1.73, p < 0.10$). Reading and math scores showed the most improvement for students at this level (see Figure 6) with the percentage of fifth-grade students scoring far below basic significantly decreasing from 18% to 3% for reading ($\chi = 2.71, p < 0.01$) and from 18% to 5% for math ($\chi = 2.23, p < 0.05$).

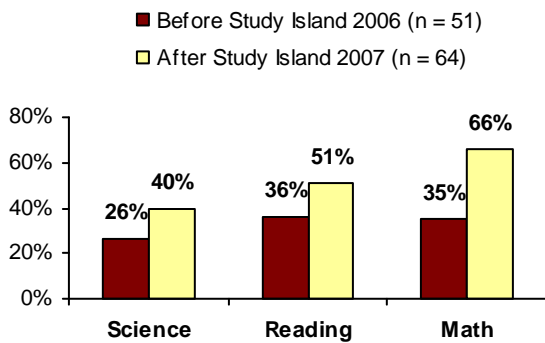


Figure 1. Percentage of fifth-grade students meeting or exceeding proficient performance in science, reading, and math on the CST before and after using *Study Island*.

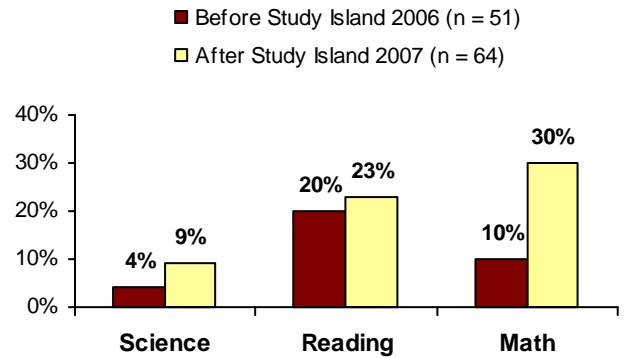


Figure 2. Percentage of fifth-grade students meeting advanced performance in science, reading, and math on the CST before and after using *Study Island*.

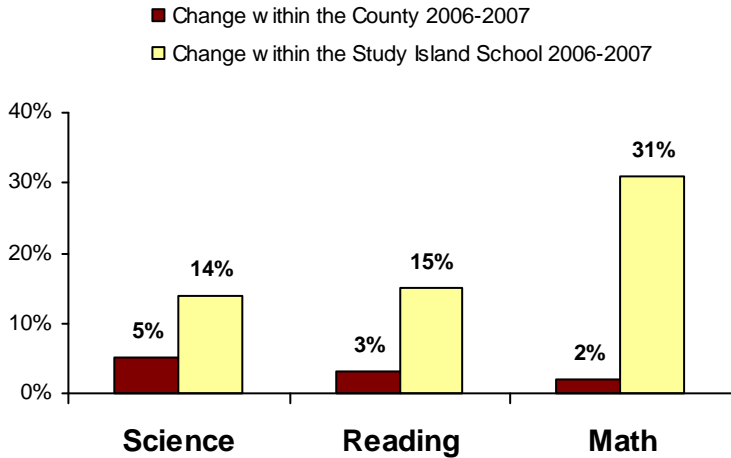


Figure 3. Change in the percentage of students meeting or exceeding proficient performance in science, reading, and math on the CST from 2006 to 2007. A *Study Island* school compared to its district.

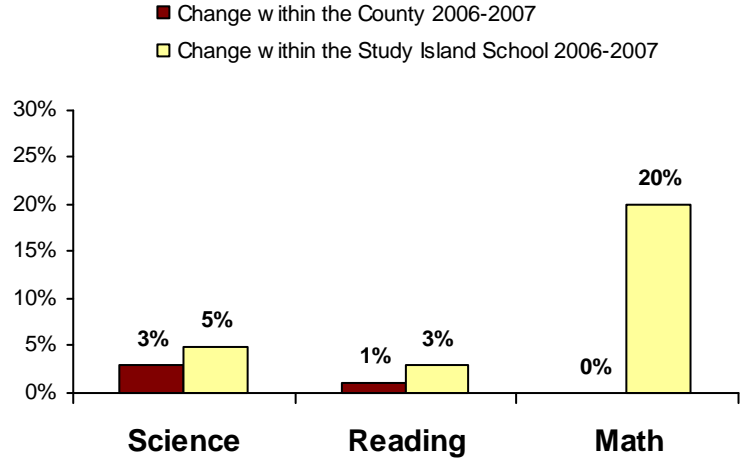


Figure 4. Change in the percentage of students with advanced performance in science, reading, and math on the CST from 2006 to 2007. A *Study Island* school compared to its district.

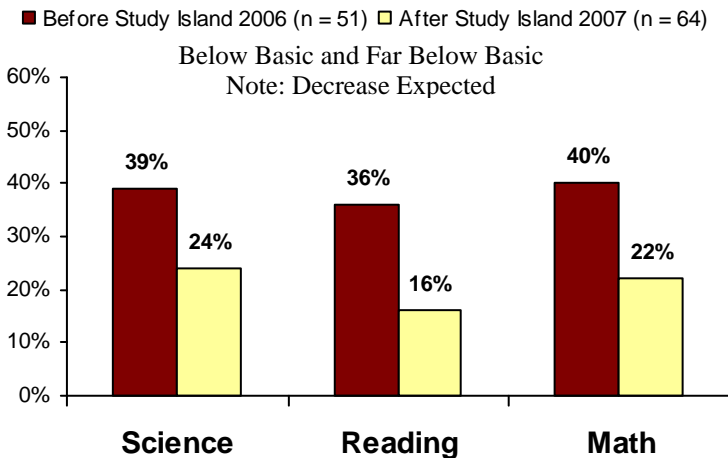


Figure 5. Percentage of fifth-grade students scoring at below basic or far below basic in science, reading, and math on the CST before and after using *Study Island*.

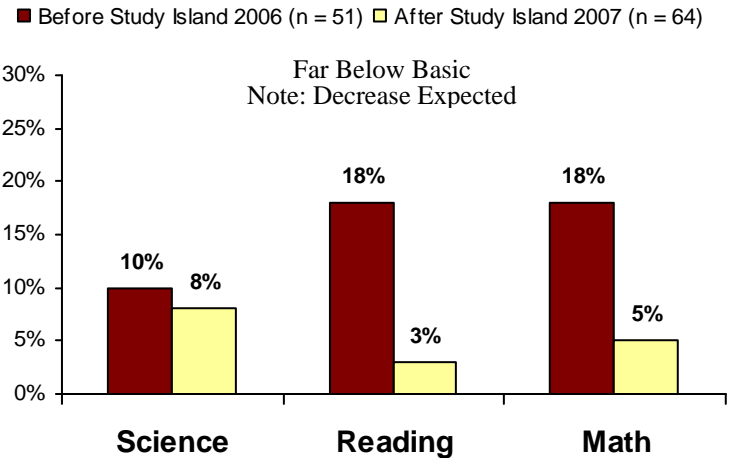


Figure 6. Percentage of fifth-grade students scoring at far below basic in science, reading, and math on the CST before and after using *Study Island*.