

Cultivating Learning and
Positive Change

**Case Study Research of *Study Island* in
Texas**

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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 Texas. 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 Texas 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 Texas, 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 Texas specific report presents an evaluation of student achievement at Texas *Study Island* schools compared to non-*Study Island* schools within the state, and three evaluations that examine student achievement in tested-subject areas in specific *Study Island* schools within Texas.

TEXAS RESULTS

Texas Schools Using *Study Island* Versus All Other Texas Public Schools

Table 1.
School Characteristics and Demographics for Public Schools in Texas

TX Public Schools (Total Enrollment = 4,525,394)	
School Characteristics	N
Type of School	Public
Grade Span	PK–12
Number of Teachers	301,692
Demographics	Percentage
Gender	
Male	No Data
Female	No Data
English Language Learner	16%
Free or Reduced Lunch	48%
Ethnicity	
White	36%
Black	15%
Hispanic	45%
Asian Pacific Islander	3%
American Indian	<1%

Background and Analysis

Evaluators completed two analyses to determine the impact *Study Island* had on student achievement within Texas. The first analysis examined the change in AYP status of Texas schools that began using *Study Island* for the first time during the 2005–2006 school year to all non-*Study Island* schools within the state. The *Study Island* schools came from both large and small districts and included urban, suburban, and rural schools within the state. Among *Study Island* schools, the percentage of schools achieving AYP increased from 87% to 95% between 2005 and 2006, a gain of 8%. On average, the percentage of non-*Study Island* schools in Texas meeting AYP increased only 4% during this same time, and the percentage of *Study Island* schools achieving AYP within the state was 13% higher than the average of non-*Study Island* schools within the state (see Figures 1 and 2). Additionally, the percentage of schools meeting AYP within *Study Island* schools rose at a higher rate than at schools not using *Study Island*. Between 2005 and 2006, *Study Island* schools had a 54% higher improvement rate in meeting AYP than non-*Study Island* schools within the state. For those schools that did not make AYP in 2005, schools that used *Study Island* improved their AYP status at a 40% higher rate than schools that did not use *Study Island*.

A second analysis of schools in Texas that began using *Study Island* during the 2006–2007 school year examined student achievement in science between *Study Island* schools compared to the state as a whole. Results showed that between 2006 and 2007, the percentage of fifth-grade students meeting standards in science increased by 5% within *Study Island* schools and only by 2% within the state (see Figure 3). For eighth-grade students, the percentage of students meeting proficiency standards decreased by 1% within the state but increased by 4.2% within *Study Island* schools (see Figure 4). Furthermore, the percentage of students that received a rating of commended performance in eighth-grade science was 4.4% higher at *Study Island* schools than the state average.

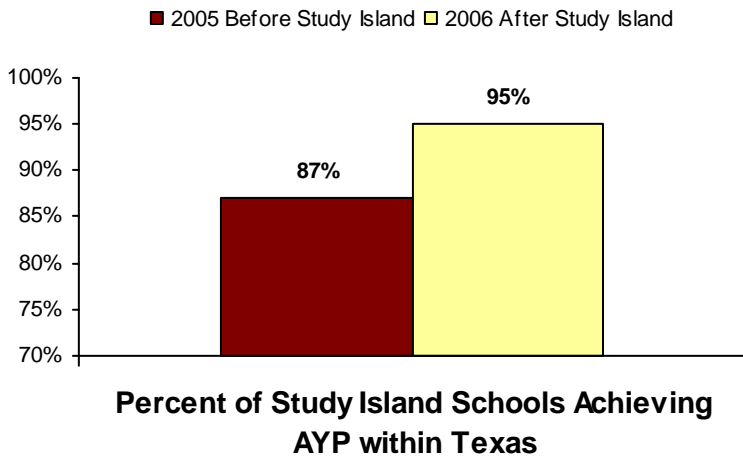


Figure 1. Increase in the percentage of *Study Island* schools meeting AYP within Texas before and after using *Study Island*.

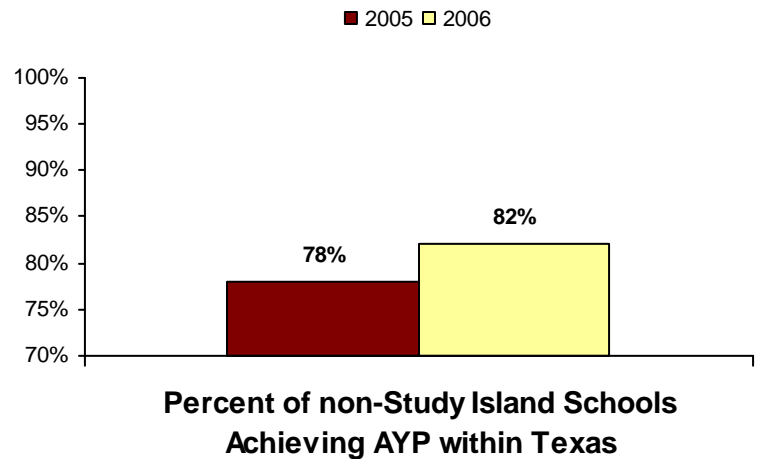


Figure 2. Increase in the percentage of schools meeting AYP in Texas from 2005 to 2006.

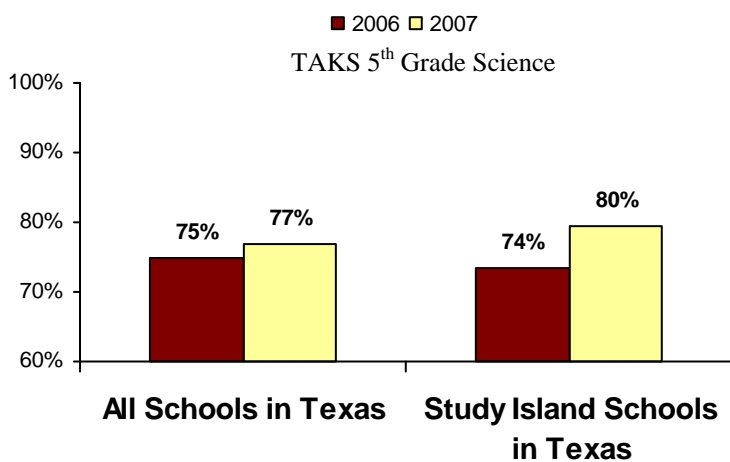


Figure 3. Percentage of fifth-grade students meeting standards on the TAKS science assessment from 2006 to 2007. *Study Island* schools in Texas compared to all other schools in Texas.

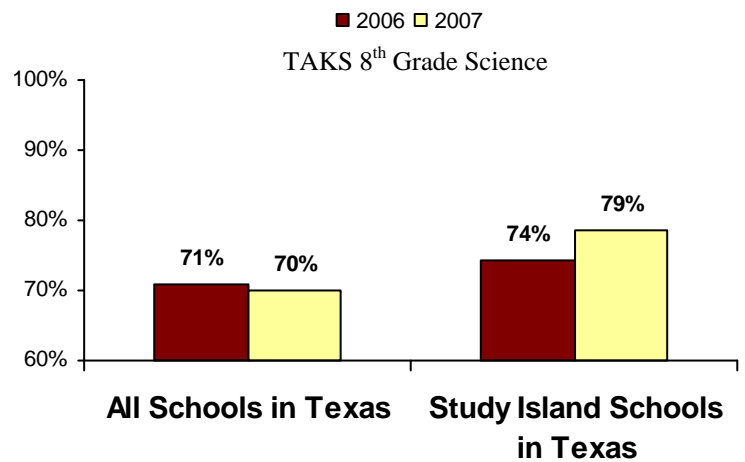


Figure 4. Percentage of eighth-grade students meeting standards on the TAKS science assessment from 2006 to 2007. *Study Island* schools in Texas compared to all other schools in Texas.

Crockett Elementary School

San Marcos Consolidated School District — San Marcos, TX

Table 2.
School Characteristics and Demographics for Crockett Elementary in San Marcos, TX

Crockett Elementary San Marcos Independent School District, TX (Total Enrollment = 733)	
School Characteristics	N
Type of School	Public
Metropolitan Status	Urban Fringe
Grade Span	K–4
Number of Teachers	47
Demographics	Percentage
Gender	
Male	50%
Female	50%
English Language Learner	No Data
Free or Reduced Lunch	61%
Ethnicity	
White	31%
Black	5%
Hispanic	63%
Asian Pacific Islander	<1%
American Indian	<1%

Background and Analysis

This Texas elementary school began using *Study Island* during the 2006–2007 school year. The year prior to implementing *Study Island*, 73% of fourth-grade students were meeting standards on the Texas Assessment of Knowledge and Skills (TAKS) test and only 7% met the requirements for commended performance (see Figure 5). After students used *Study Island* for one school year, the percentage of students meeting standards increased to 81%, a marginally significant gain ($\chi = 1.57, p < 0.10$), but the percentage of students with commended performance on the 2007 TAKS rose significantly to 16% ($\chi = 2.33, p < 0.05$).

As shown in Figures 6–8, there was a similar pattern of results within the content area tests of the TAKS after students began using *Study Island*. Although the gains on the reading and writing tests were not statistically significant, fourth-grade students made consistent and positive gains in both of these areas. Fourth-grade students experienced the most robust gains in math the year they used *Study Island*, with an increase of 11% in the number of students meeting the criteria for commended performance. (This gain, although large, only approached statistical significance, $\chi = 1.86, p < 0.10$). However, fourth-grade students

made statistically significant gains in the percentage of students meeting standards after using *Study Island* ($\chi = 2.33, p < 0.05$).

Figures 9–12 demonstrate the change in the percentage of fourth-grade students meeting standards on the TAKS from 2006 to 2007 within the school, district, and surrounding region and provide a means to compare proficiency between the school, district, and region in 2007 after students within the school had used *Study Island* for one school year. Although fourth-grade students generally made gains in achievement in the school, district, and region between 2006 and 2007, students within the *Study Island* school consistently had higher gains than the district or region in the percentage of students meeting proficiency standards on all subtests of the TAKS.

In 2007, students within the *Study Island* school had a higher percentages a higher percentage of students that met standards in fourth grade than in the district or region on all TAKS subtests. On the overall TAKS assessment and the TAKS reading assessment, the differences between the *Study Island* school and the district and region were not significant; however, on the TAKS math and TAKS writing tests, the differences between the *Study Island* school and the region were marginally significant ($\chi = 1.69, p < 0.10$; $\chi = 1.86, p < 0.10$, respectively).

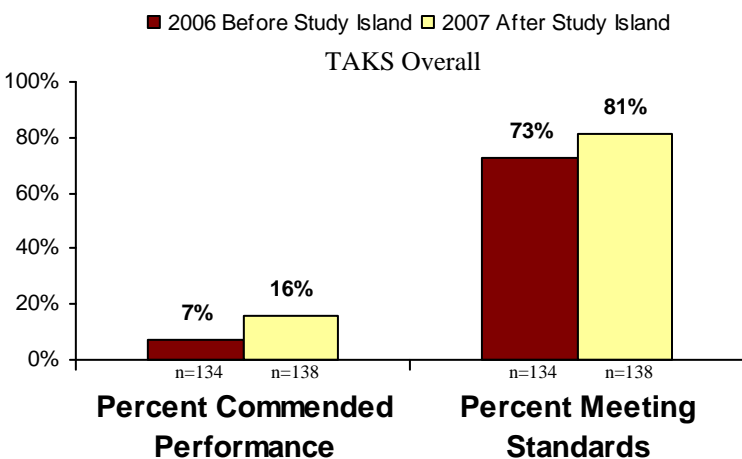


Figure 5. Percentage of fourth-grade students meeting commended performance and standards on the TAKS overall assessment before and after using *Study Island*.

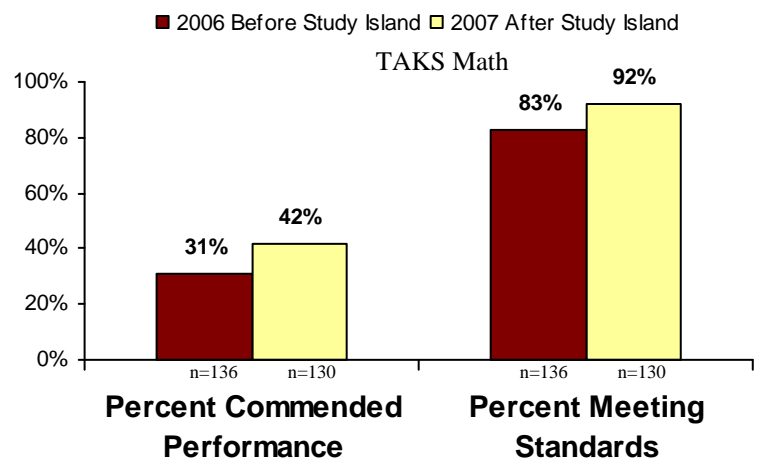
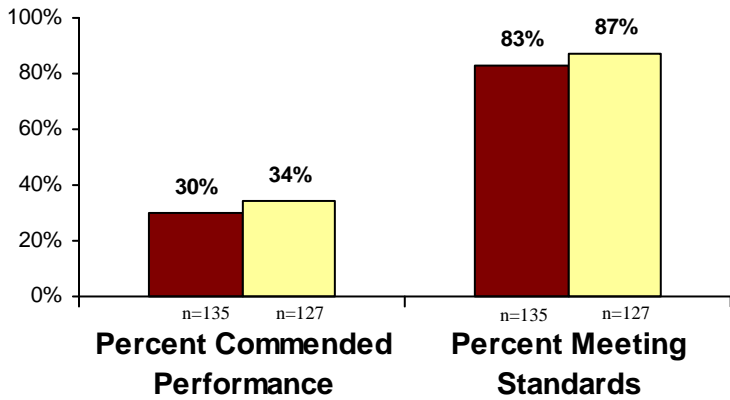


Figure 6. Percentage of fourth-grade students meeting commended performance and standards on the TAKS math assessment before and after using *Study Island*.

TAKS Reading

■ 2006 Before Study Island □ 2007 After Study Island



TAKS Writing

■ 2006 Before Study Island □ 2007 After Study Island

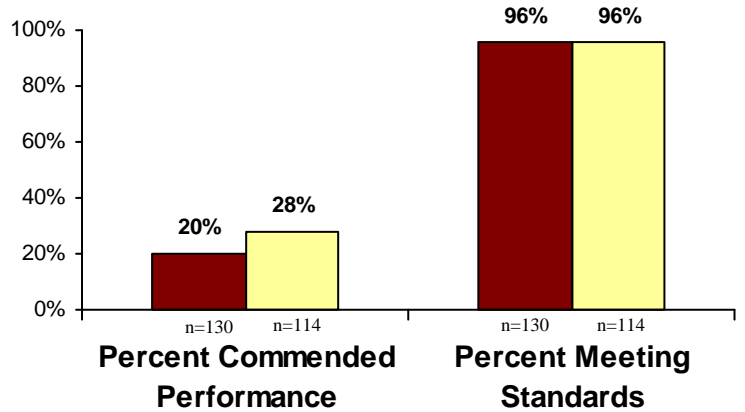
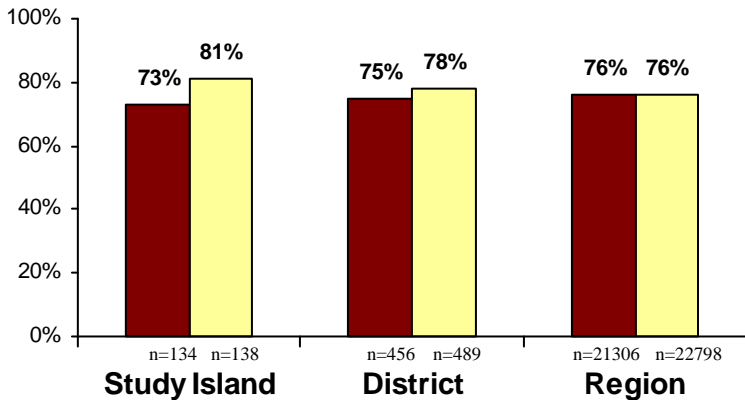


Figure 7. Percentage of fourth-grade students meeting commended performance and standards on the TAKS reading before and after using *Study Island*.

Figure 8. Percentage of fourth-grade students meeting commended performance and standards on the TAKS writing assessment before and after using *Study Island*.

TAKS Overall

■ 2006 □ 2007



TAKS Math

■ 2006 □ 2007

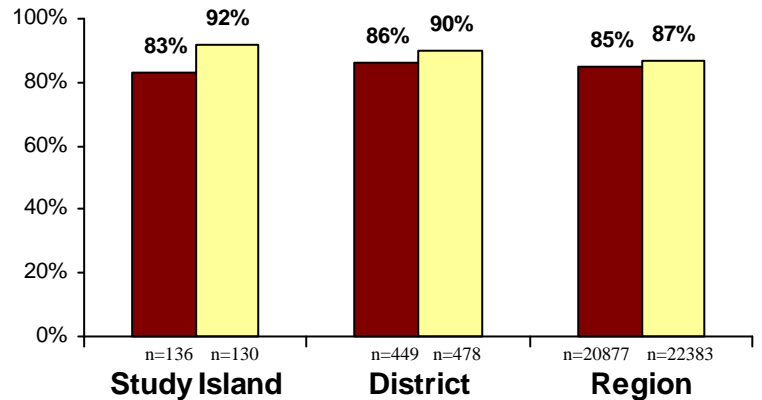


Figure 9. Percentage of fourth-grade students meeting standards on the TAKS overall assessment from 2006 to 2007. The *Study Island* school compared to its district and surrounding region.

Figure 10. Percentage of fourth-grade students meeting standards on the TAKS math assessment from 2006 to 2007. The *Study Island* school compared to its district and surrounding region.

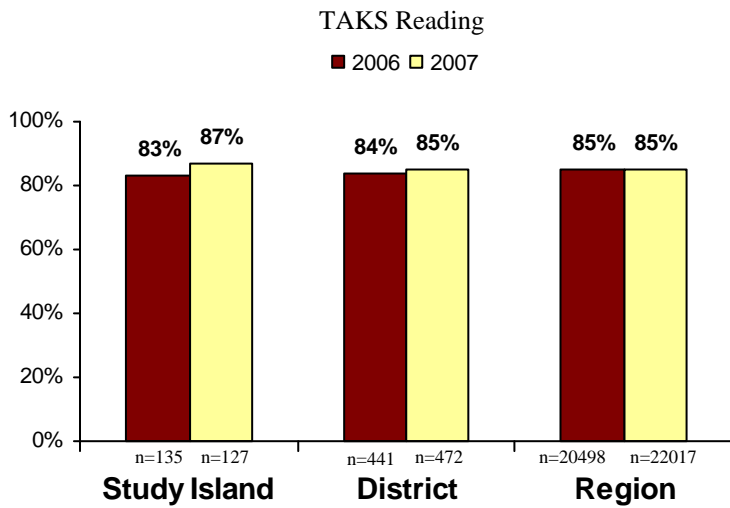


Figure 11. Percentage of fourth-grade students meeting standards on the TAKS reading assessment from 2006 to 2007. The *Study Island* school compared to its district and surrounding region.

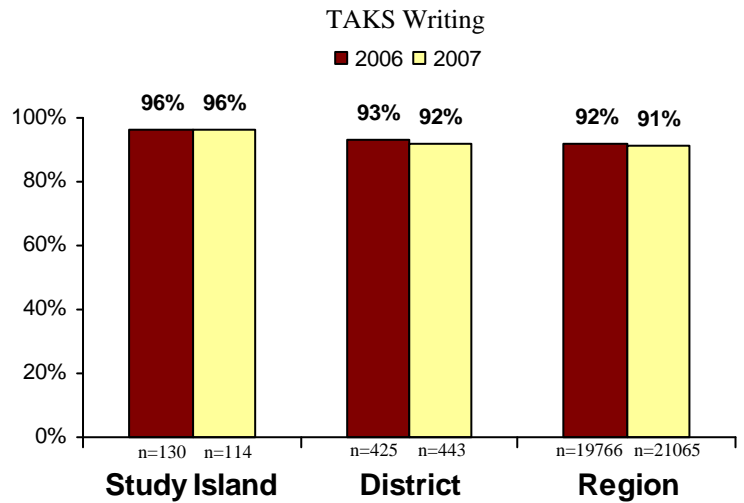


Figure 12. Percentage of fourth-grade students meeting standards on the TAKS writing assessment from 2006 to 2007. The *Study Island* school compared to its district and surrounding region.

Childress Junior High School

Childress Independent School District — Childress, Texas

Table 3.

School Characteristics and Demographics for Childress Junior High School in Childress, Texas

Childress Junior High Childress Independent School District, TX (Total Enrollment = 261)	
School Characteristics	N
Type of School	Public
Metropolitan Status	Small Town
Grade Span	6–8
Number of Teachers	23
Demographics	Percentage
Gender	
Male	54%
Female	46%
English Language Learner	No Data
Free or Reduced Lunch	52%
Ethnicity	
White	63%
Black	10%
Hispanic	26%
Asian Pacific Islander	<1%
American Indian	<1%

Background and Analysis

Students at this Texas junior high have been using *Study Island* for many years as part of their curriculum and as preparation for the Texas TAKS test. This analysis focused on the TAKS performance of eighth-grade students in 2006 and 2007.

As shown in Figures 13 and 14, the overall results of the analysis found that students using *Study Island* made consistent gains in achievement from 2006 to 2007 in all tested subject areas on the TAKS. Additionally, a higher percentage of students met standards and reached commendable levels of performance over time. The most significant gains occurred in math. The percentage of students meeting standards in math grew significantly from 61% to 80% ($z = 2.41, p < 0.05$) and the percentage of students meeting the requirements for commendable performance in math, although not statistically significant, doubled over the course of one year. Additionally, when looking at the TAKS test as a whole, the percentage of students meeting standards grew 15 percentage points, from 54% to 69%, which was a gain that approached statistical significance ($z = 1.84, p < 0.10$).

Additionally, eighth-grade students within this *Study Island* school had higher rates of growth than the region from 2006 to 2007 in all TAKS subject areas except social studies. The growth in math achievement was the most substantial (18% compared to the region's growth of 3%) and students within the *Study Island* school gained 4% in science while the region lost ground (see Figure 15). In 2007, a higher percentage of students within this *Study Island* school than the region met standards on the TAKS in all areas except science (see Figure 16). Although a significantly higher percentage of eighth-grade students within the region met standards in science in 2007 ($\chi = 2.76, p < 0.05$), as shown in the previous analysis, eighth-grade students within the region generally lost ground in science from 2006 to 2007 while students within the *Study Island* schools made gains. The difference seen on the social studies subtest was significant in favor of the *Study Island* school, indicating a significantly higher percentage of students met standards in social studies within the *Study Island* school than in the region in 2007 ($\chi = 2.76, p < 0.01$).

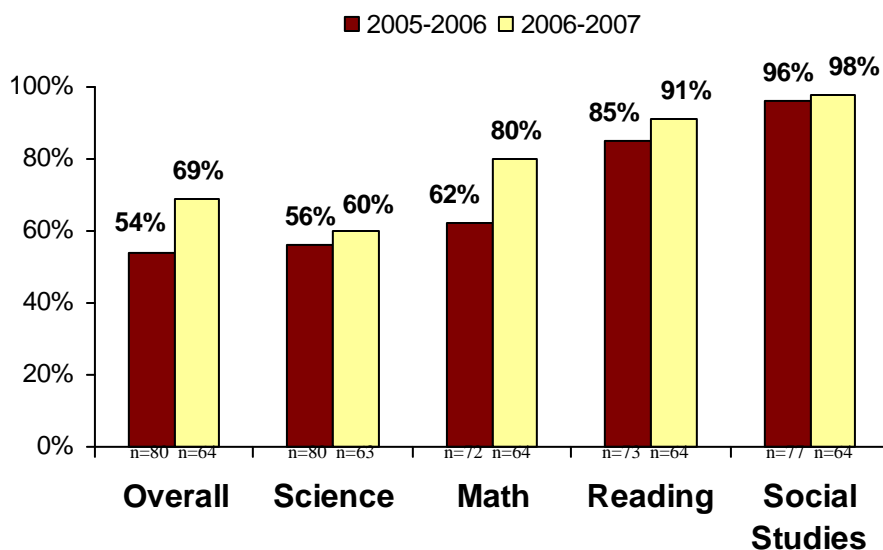


Figure 13. Percentage of eighth-grade students meeting standards on the TAKS subtests in 2006 and 2007 using *Study Island*.

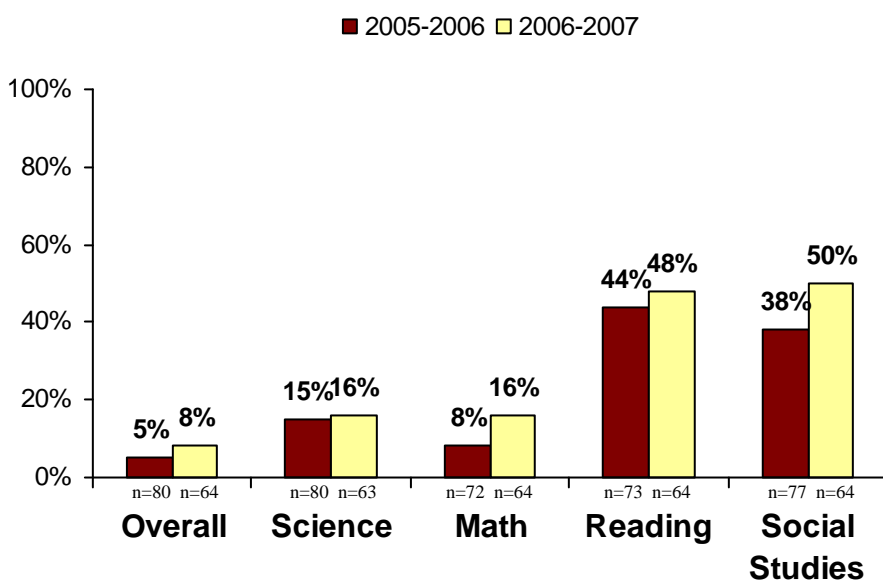


Figure 14. Percentage of eighth-grade students meeting requirements for commendable performance on the TAKS subtests in 2006 and 2007 using *Study Island*.

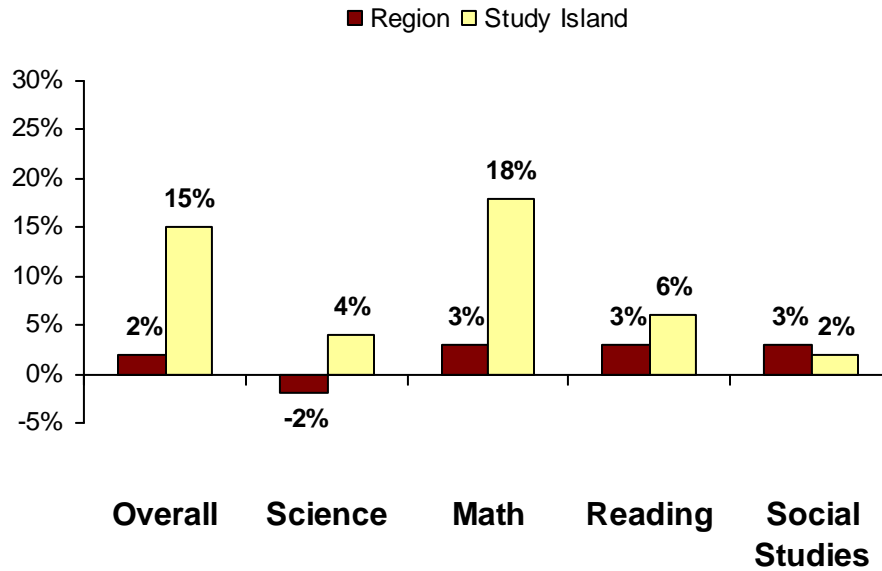


Figure 15. Change in the percentage of eighth-grade students meeting standards on the TAKS subtests from 2006 to 2007. Study Island school versus the surrounding region.

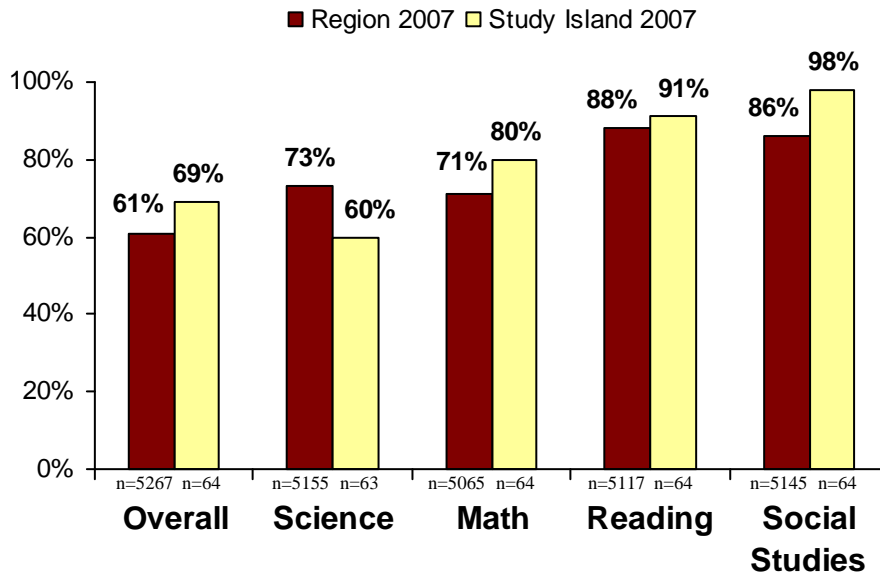


Figure 16. Percentage of eighth-grade students meeting standards on the TAKS assessment subtests in 2007. Study Island school compared to the surrounding region.

Alamo Elementary

Fort Stockton Independent School District — Fort Stockton, TX

Table 4.
School Characteristics and Demographics for Alamo Elementary in Fort Stockton, Texas

Alamo Elementary Ft. Stockton Independent School District, TX (Total Enrollment = 508)	
School Characteristics	N
Type of School	Public
Metropolitan Status	Small Town
Grade Span	PK–3
Number of Teachers	36
Demographics	Percentage
Gender	
Male	47%
Female	53%
English Language Learner	No Data
Free or Reduced Lunch	74%
Ethnicity	
White	15%
Black	<1%
Hispanic	84%
Asian Pacific Islander	<1%
American Indian	0%

Background and Analysis

This elementary school in Texas began using the *Study Island* program during the 2006–2007 school year to help students prepare for the TAKS assessment. The year before students began using the *Study Island* program, 80% of third-grade students within this school met standards on the overall TAKS test, which was comparable to the performance of third-grade students in the surrounding region. After third-grade students used *Study Island* over the course of the next year, students' overall performance on the TAKS increased by 6%, resulting in 86% of students meeting proficiency standards. Although this gain was not statistically significant, the percentage of third-grade students meeting proficiency within the region remained the same that year (see Figure 17).

There was a similar pattern of results on the math portion of the TAKS assessment from 2006 to 2007. Eighty-percent of third-grade students within the region met standards in math in both years, while third-grade students within the *Study Island* school gained 6% (see Figure 18). On the TAKS reading assessment, third-grade students within the *Study Island* school outperformed students within the region (see Figure 19).

The percentage of third-grade students meeting proficiency standards in reading within the *Study Island* school rose by 3%, and in the surrounding region, it decreased significantly by 2% ($\chi = 4.18, p < 0.01$). Although the gains in achievement seen at the *Study Island* school on both the math and reading portions of the TAKS test were not significant, third-grade students within this school made progress while performance in the region remained flat or declined for third-grade students. Examining just the achievement scores in 2007, students within the *Study Island* school had a higher percentage of third-grade students that met standards on the TAKS than in the surrounding region. This difference was marginally significant for the both the overall TAKS test and the math subtest ($\chi = 1.71, p < 0.10$; $\chi = 1.74, p < 0.10$, respectively).

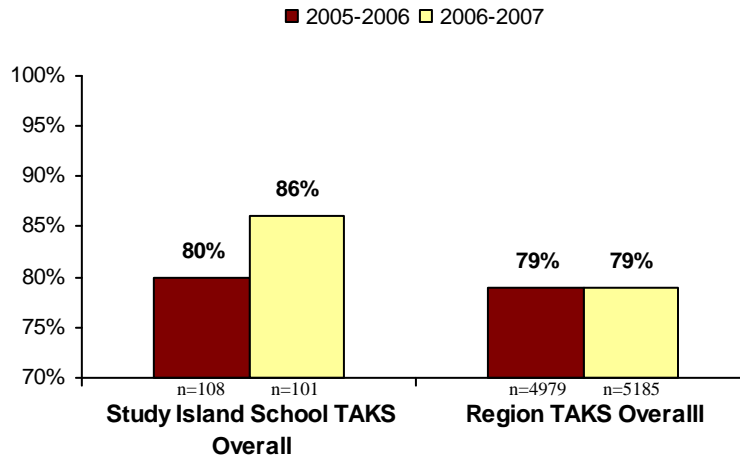


Figure 17. Percentage of third-grade students meeting proficiency standards in 2006 and 2007 on the TAKS overall test. A *Study Island* school compared to the surrounding region.

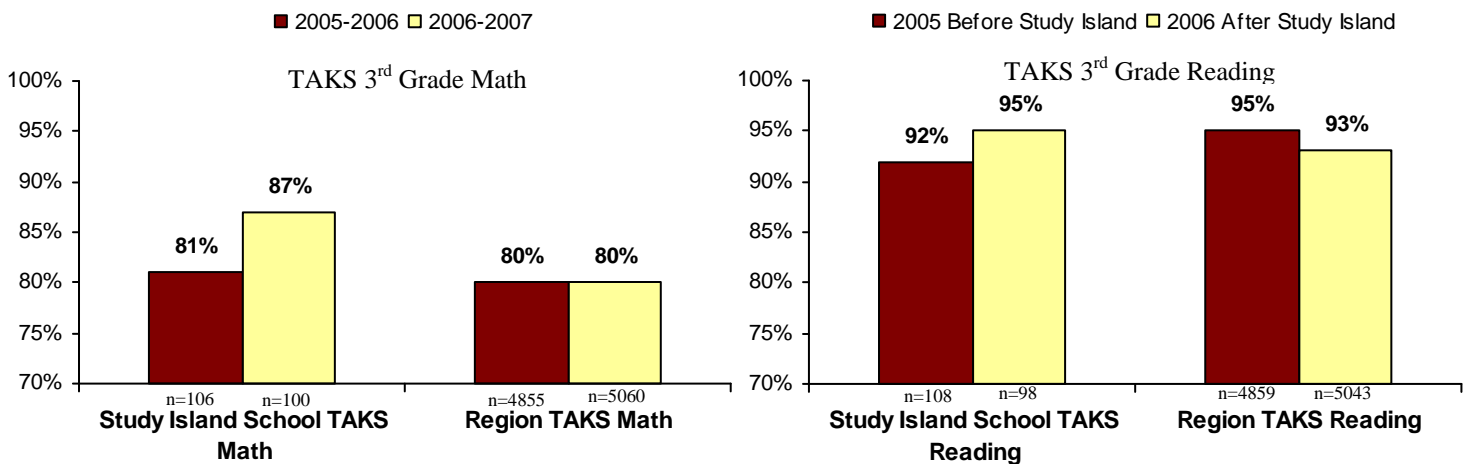


Figure 18. Percentage of third-grade students meeting proficiency standards in 2006 and 2007 on the TAKS math test. A *Study Island* school compared to the surrounding region.

Figure 19. Percentage of third-grade students meeting proficiency standards in 2006 and 2007 on the TAKS reading test. A *Study Island* school compared to the surrounding region.