

Improving Student Learning Through Creative Collaboration:

A Study of the Impact of Tech4Learning's Pixie Software on Student Achievement

2011 Executive Summary



This study was conducted by SEG Measurement, an independent educational research firm located in New Hope, Pennsylvania. This study was supported by a grant from Tech4Learning, Inc.

Executive Summary

Introduction

Schools are under increasing pressure to develop students' academic skills. One way to achieve these goals is through the effective integration of technology in instruction. Tech4Learning designed Pixie, a collaborative creativity tool, to address this challenge. Pixie provides a rich environment for students to create projects and work collaboratively.

During the 2010-2011 school year, SEG Measurement conducted a national study with approximately 1,000 3rd, 4th, and 5th grade students, in 38 classrooms, in California, Georgia, Ohio, South Carolina, and Texas to evaluate the impact of using Pixie on student achievement.

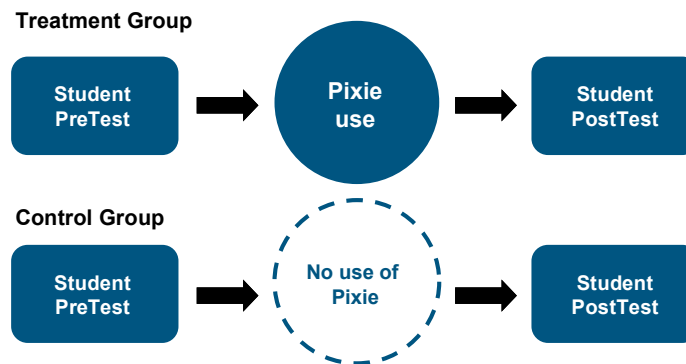
The goal of this study was to evaluate the impact of using Pixie on student learning. The results show that students who use Pixie learn significantly more than students who do not use Pixie. Students who used Pixie showed about one half year more of growth in Language Arts and in Mathematics than students who did not use Pixie.

Study Design

The primary question answered by this study is: Do students in grades 3, 4, and 5 show larger gains in Reading Comprehension and Mathematics skills if they use Pixie? The study also explored potential differences in growth between boys and girls and among students of different ethnic backgrounds.

The study compared two groups of students, matched in ability. The Treatment Group consisted of students who used Pixie; the Control Group consisted of students who did not use Pixie. The students in both groups were administered a pre-test in January 2011 and a post-test in May/June 2011 to evaluate the impact of Pixie use on their Reading Comprehension and Mathematics growth. This is illustrated below.

Figure 1: Study Design



The study compared the growth in Reading Comprehension and Mathematics Stanford 10 Achievement Test™ scores from the middle of the school year to the end of the school year. The results from the pretest and posttest were compared statistically to determine the level of growth in Reading Comprehension and Mathematics skills. In addition, a qualitative survey of teachers was conducted to obtain additional information and context for the study.

Students in the Treatment Group used Pixie about one to two hours weekly, while students in the Control Group did not use Pixie.

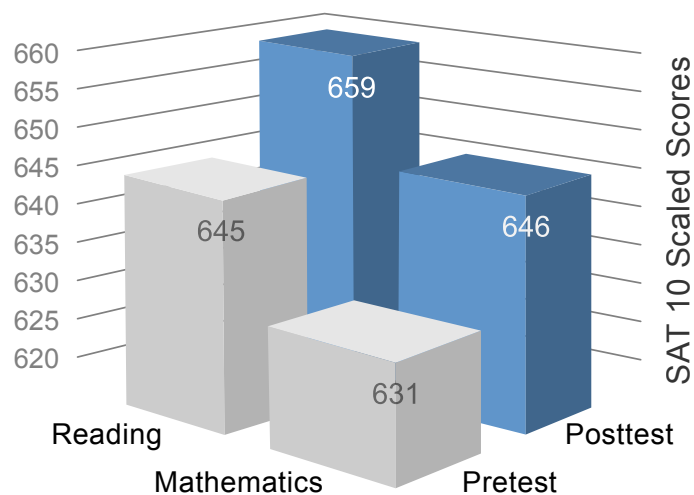
Results

The Treatment Group students who used Pixie showed substantial growth in Reading Comprehension and Mathematics during the course of the study (see Figure 2). During the course of the study, students in classes using Pixie increased their SAT 10 Reading Comprehension scale-scores by 14 points (Mean pretest=645; Mean posttest score = 659) and their Mathematics scale-scores by 15 points (Mean pretest=631; Mean posttest score = 646). This means that the students in Pixie classes, on average, achieved about a full year of growth (for the typical student at the 50th percentile), during the second semester of the 2010-2011 school year in which the study was conducted.

Figure 2

Comparison of Pretest and Posttest Scores for Students Using Pixie (Treatment Group)

	Pretest	Posttest
Reading	645	659
Mathematics	631	646

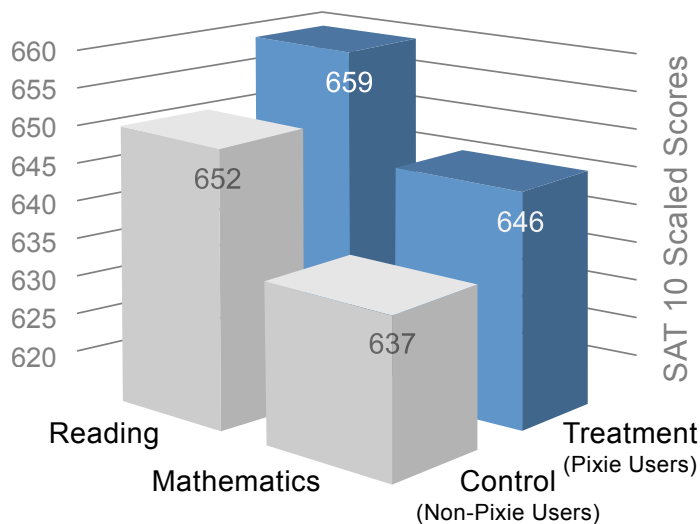


The greater academic growth observed for students in Pixie classes becomes even more visible when comparing these students against the Control Group, who did not use Pixie. The Treatment Group students showed statistically greater gains in Reading Comprehension (7 scale score points; Effect Size = .13) and Mathematics (9 scale score points; Effect Size = .16) than the Control Group classes (see Figure 3). **This means that, on average, students who used Pixie showed about a half year's more growth than their peers who did not use Pixie.**

Figure 3

Comparison of Posttest Scores for Treatment and Control Group Students

	Control (Non-Pixie user)	Treatment (Pixie User)
Reading	652	659
Mathematics	637	646



Summary

During the 2010-2011 school year (between January and June 2011), SEG Measurement conducted a national study with approximately 1,000 3rd, 4th, and 5th grade students, in 38 classrooms, in California, Georgia, Ohio, South Carolina, and Texas. Students who used Pixie showed meaningful growth in Reading Comprehension and Mathematics during the course of the study. Students in the Treatment Group classes increased their SAT 10 scores between 14-15 points, or about one year worth of growth. More significantly, Treatment Group students enrolled in classrooms using Pixie showed about one half year more of growth in Reading Comprehension and Mathematics than the Control Group students enrolled in classes not using Pixie. The Pixie users finished the year with scores that were 7 scale-score points higher in Reading Comprehension and 9 scale-score points higher in Mathematics on the SAT 10 assessments. The study also found that Pixie is equally effective for boys and girls and for students of different ethnic backgrounds.

The quantitative results were reinforced by the qualitative data provided by teachers in classes using Pixie. All of the teachers indicated that they were likely to use Pixie in the future, and nearly all of the teachers (92%) said they would recommend Pixie for use by others. Almost all (85%) of the teachers indicated that that Pixie was effective in improving student's attitudes toward school and learning. Nearly two thirds (61%) of the teachers indicated that Pixie was effective in increasing their students' cognitive/intellectual growth.

The findings of this study provide substantial support for the effectiveness of Pixie in improving student Reading Comprehension and Mathematics skills.

Download the complete, peer-reviewed, research report at: www.tech4learning.com/pixie/research