THE EFFECTS OF STUDY ISLAND ON END-OF-COURSE EXAM SCORES

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Abstract

The purpose of this study was to determine the effect of StudyIsland.com on End-of-Course exam scores, specifically American History. The exam scores were documented from the 2012-2013 school year when Study Island was not used and then compared to the 2013-2014 school year when Study Island was used as a supplement in the classroom. The study group was made up of freshmen and sophomores at a High School in Northwest Missouri. The data was provided from the scores of both years and then compared to one another. Regardless of using Study Island in 2013-2014, the test scores did not improve. In fact, the scores actually decreased slightly. There are several variables that should be taken into account such as class sizes, limited data, and comparing classes from one year to another. Another factor that could also could have played a role in the results is the test itself as the state of Missouri issues a different test every year.

Introduction

Background, Issues and Concerns

   This study focuses on the End-of-Course exam and ways to improve test scores. Since the scores from these exams became a part of schools meeting accreditation, schools are trying many things to improve their test scores. One of the ways that schools are trying to improve their test scores is by using a computer program called Study Island. Study Island is an educational program aligned with State Standards that is designed to help students improve their test scores. Students can use the program to learn at their own pace, rehearse information that students have learned before, and games that help the students reinforce topics that may be tested on the End-of-Course exam.

   The only issues and concerns with using Study Island in the classroom would be that it could 'waste' time in class working on Study Island. Many traditional style of teachers would think this because using Study Island would take away teachers' precious class time. They believe that the time used on Study Island would be better used in a more traditional manner.

      Another possible concern with using Study Island would be that if homework assignments are assigned through Study Island. Some students may not have the technology to be able to do the assignment outside of school.

Practice under Investigation

The practice under Investigation is a study of End of Course Exam scores. Will the scores be influenced by having the students use Study Island?

School Policy to be Informed by Study

Every high school is required to take End of Course exams. Each student's name will be confidential and will be noted as a number. The purpose of this study is to determine whether or not Study Island can improve our school's End of Course exam scores.

Conceptual Underpinning

The classrooms that use Study Island will have higher End-of-Course exams than classrooms that do not use Study Island. Study Island is a computer program that reinforces classroom learning by having students take tests on material that has been covered in class. It uses multiple choice answers that the students will have to determine which choice is the best answer. The students will test and play games by answering questions that could potentially be on the End-of-Course exams. This practice will improve the recollection for the students of the material when they take the End-of-Course exam. It will also help students improved their test taking ability by removing possible answers that they know are incorrect.

Statement of the Problem

The problem is that our school and all schools in the state of Missouri need to improve our End of Course exams.

Purpose of the Study.

The Purpose of this study is to determine if Study Island and other Test taking computer programs will increase End-of-Course exam scores.

Research Question.

Is there a significant difference between classrooms that use Study Island compared to classrooms that do not use Study Island in terms of End of Course Exam scores?

Null Hypothesis.

There is not a significant difference between classrooms that use Study Island compared to classrooms that do not use Study Island in terms of End of Course Exam scores.

Anticipated Benefits of the Study.

There are many benefits expected from this study. The main benefit would be to see if the increased use of Study Island would increase End of Course exams. If they do, then than the experimenter would continue using Study Island in their classroom. They would also suggest using Study Island for other classrooms at their school. If the

test scores do not prove to be useful, then that class time devoted to Study Island could be used in a more valuable way.

Definition of Terms

End-of-Course exam(EOC)- annual state exam aligned with state standards that is given to high school students in the areas of Government, Algebra I, English I, English II, Biology I, Geometry, and American History.

StudyIsland.com- computer program that is designed for educators to use in their classroom. Can be used to give tests, quizzes, and students can play games to refresh their memories before tests and exams.

Summary

A study was conducted to determine if the use of Study Island in classrooms would increase the results of the End of Course Exam scores. The students were compared from the 2012-2013 school year when Study Island was not used, to the 2013-2014 school year, when Study Island was used. If the t-test shows that there is a big difference between the two school years, then it would show that schools should use Study Island to improve their test scores. School districts could benefit greatly from looking at these results.

Review of Literature

Since school's state accreditation has become tied to state testing, schools have begun looking for ways to improve their student's test scores. In elementary and middle schools in the state of Missouri, the test is the MAP test. It tests students' knowledge in Math, English, Science, and Reading. In high schools in the state of Missouri, the state test that is given is called the End-of-Course exam. The End-of-Course exam or EOC has shifted several times in terms of which subjects it tests. As of 2012, the state tested English I, English II, Biology, Algebra I, Geometry, Government, and American History. The state originally planned to expand the amount of subjects tested because of the Common Core which was to be implemented soon thereafter. However, state funding fell short, therefore the state decided to push back the amount of tests that would be given. One of the main ways that schools are preparing their students for taking these standardized test is by using computer programs to review their learned information. One of the main programs used, is called Study Island.

Study Island is a computer program that is accessible by students and teachers to answer questions in a multiple choice style of testing. Hayden (2008) says that "Study Island is a web-based computer program that allows students to practice state standards and indicators (pg. 1)." This allows for the students to be prepared to take tests that are very similar to the State Exams and also includes the standards that will be required on the exams as well. The style of testing is also very similar to the Missouri State tests in that both are in multiple choice formats. Therefore, the students are not

only learning the material, but also learning how to perform well on multiple choice tests.

Rivero in an interview with Tim McEwen, the CEO of the company that created Study Island, explains that Study Island helps student's master academic standards in a fun and engaging way. As quality teachers in today's world know, we have to be innovative in our classrooms to keep our student's attention. As part of keeping our student's attention, we have to at times entertain them. Part of this is, is making our lessons interactive and fun for our students. Some of the best learning can come from having our students use interactive programs to learn. Study Island is one of these programs that can make learning engaging and fun for students.

Study Island has many different facets involved in its program. For instance a teacher can send a test to their students to perform on the site, finish a homework assignment, and even allow for the students to play games while learning classroom material. Hayden (2008) mentioned that "Study Island allows students to practice and to build skills over time toward mastery (pg. 1)." This is another important and useful tool that Study Island offers educators and students. Tatum (2012) mentioned that Study Island provides students instance feedback when they answer questions. When a student answers a question incorrectly, a window pops up on the screen and explains why they got the question wrong. This is especially important for students that struggle with assessment to understand why they answered incorrectly, this can be very valuable to learn for the future. Hopefully, by understanding why they answer the question wrong, they will be able to learn why they should have chosen a different answer. In the article "New Study Island Products to Help Students Prepare for Texas

Assessments of Academic Readiness Tests," (2011),it mentions that "Study Island offers inventive practice activities, customized assessments, and productivity tools that improve the performance of K-12 students and their teachers" (p. 1).

Bendernagel (2008) states that students can log into Study Island at home and that their parents can help them learn outside of the classroom. Hayden (2008) also mentions another useful part of Study Island. It keeps track of the student's progress and records their scores. This not only allows the student to be able to tell how they are performing, but it also gives parents and teachers an idea about what they are excelling at. It also informs them what the student needs help with. For instance, a teacher could give their class a Study Island Assessment prior to the class taking a state exam and be able to tell what they may need help with. This would let the teacher know if the class needs more reinforcement over a specific topic or lesson. Another important aspect of Study Island is that it keeps parents aware of their student's progress. This is always a positive thing because it keeps the parent involved in their child's education. Dube (2011) wrote in his Master's thesis that parental communication during student's adolescent years has positive results on the student's grades and test scores. Therefore, just having the students use Study Island at home gives parents the ability to see how their students are doing in each specific class. They can encourage their children to use Study Island regularly at home and review for upcoming tests. Having students work on their knowledge outside of school hours has always been proven to help on their test scores. By using Study Island and keeping parents up to date on their progress it should in general help the student's performances when it comes time to take the state test.

In "A Review of Study Island", Derrick Meador wrote that Study Island is not meant to be the primary means for education but should be used as a supplemental piece to help reinforce learning that has previously taken place. He believed that Study Island gave students a quick refresher over information that they may have learned in the past or as a review before testing. This would suggest that by using Study Island, that students should recall information that they have learned throughout the school year and in past years.

Study Island can also be a very valuable tool for teachers. In "Common Formative Assessments Using Study Island" from Douglas Walker's blog, he mentions that teachers have the ability to create their own tests and share these tests with other teachers within their district. Walker also mentioned that teachers can customize tests that will automatically grade the tests. By putting their assessments online, teachers have many more options when they put together a test.

Palmer (no date) wrote in her Specialist's Thesis that using Study Island in her fourth grade classroom has improved their math test scores. She believed that the reason that it improved their scores was because the students didn't get bored using Study Island. She stated that her students enjoyed using Study Island and that it made the learning fun for them. Sometimes subjects such as math and social studies can at times become boring for students to repetitively go over the same information or problems over and over again. Study Island can then become a way to break up the monotonous days of reviewing previously learned information. Jenny Bushman states in Squires (2011) article "Study Island: Improving kids scores with fun and games" that

Study Island alone cannot improve student's test scores but that it can definitely help. She believes that it can be a very good tool to supplement classroom time.

Study Island has shown that it can improve student's test scores when it comes to State testing at the elementary, middle, and high school levels. While it won't replace learning in the classroom it can be a very valuable tool for students to use outside of the class and as a tool to break up 'classroom' learning. In today's technological world, it is important for us to use technology in the classroom to enhance our students learning and Study Island is a way that we can achieve that.

Research Methods

Research Design

The End of Course Exam results from the school year 2012-2013 will be compared to the results of 2013-2014. In the 2012-2013 school year, Study Island was not used in American History at all. In 2013-2014, Study Island was used throughout the school year. The independent variable would be the use of Study Island used in the classroom. The dependent variable would be the End-of-Course exam scores.

Study Group Description

The group was made up of male and female students in American History at Plattsburg High School. The groups were freshmen and sophomores during the school years of 2012-2013 and 2013-2014. Plattsburg is a rural school district north of Kansas City, Missouri. The student population consists of 93% White, 5% African-American, and 1% Mixed. Plattsburg's high school population is 49% male and 51% female. Twenty percent of Plattsburg's high school students qualify for free or reduced lunch.

Data Collection and Instrumentation

The End-of-Course exam results were used to gather the data. The results from 2012-2013 and 2013-2014 were collected from the High school principal.

Statistical Analysis Methods

The t test was created to determine if there would be a difference on End of Course exam results between students who use Study Island and students who do not use Study Island.

Findings

A t-test was used to evaluate the students who participated in the End of Course Exam were affected by using Study Island. The following charts shows the collected data and findings based on the information taken from the students.

A t-test Analysis Result for Question:

Is there a difference between classrooms that use Study Island compared to classrooms that do not use Study Island in terms of End of Course Exam scores?

Table 1

Source	Mean	Mean D	t-test	df	p-value
2012-2013	194.93				
2013-2014	197.12	2.19	17.48	118	0.299712

Note: significant when p <= 0.25

According to the data, there were sixty students who did not use Study Island throughout the 2012-2013 school year. These students scored an average of 194.93 with a standard deviation of 22.01 on their End of Course Exam. There were also sixty student who used Study Island during the 2013-2014 school year. These students scored an average of 197.12 with a standard deviation of 23.37 on the End of Course Exam. The Mean d, or difference between the means was 2.19. The t-test showed at 17.48 and the degree of freedom was 118. The Null hypothesis must be accepted because the p-value, 0.2999712, was greater than the alpha level required of 0.25. Therefore, the group that did not use Study Island did not have significantly lower scores than the students who did use Study Island. The difference between the

averages of the students who used Study Island compared to the average of the

students who did not use Study Island was not beyond the alpha level.

Table 2- Percentages of Students Scoring Advanced or Proficient on the EOC

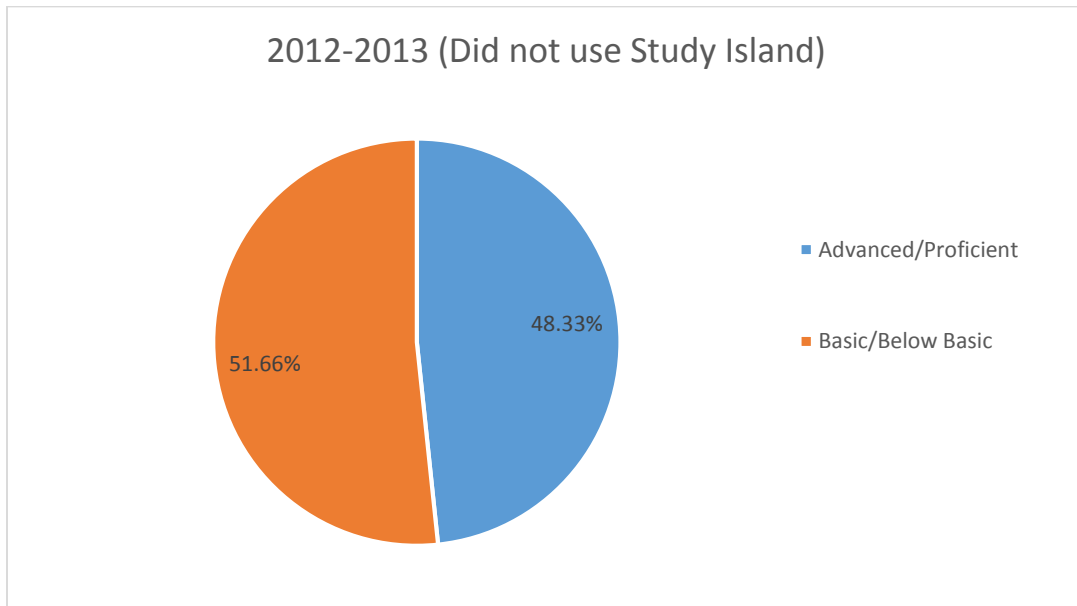2012-2013 (Did not use Study Island)

- Advanced/Proficient
- Basic/Below Basic

48.33%

51.66%

Table 3-Percentages of Sudents Scoring Advanced or Proficient on the EOC

2013-2014 (Used Study Island)

- Advanced/Proficient
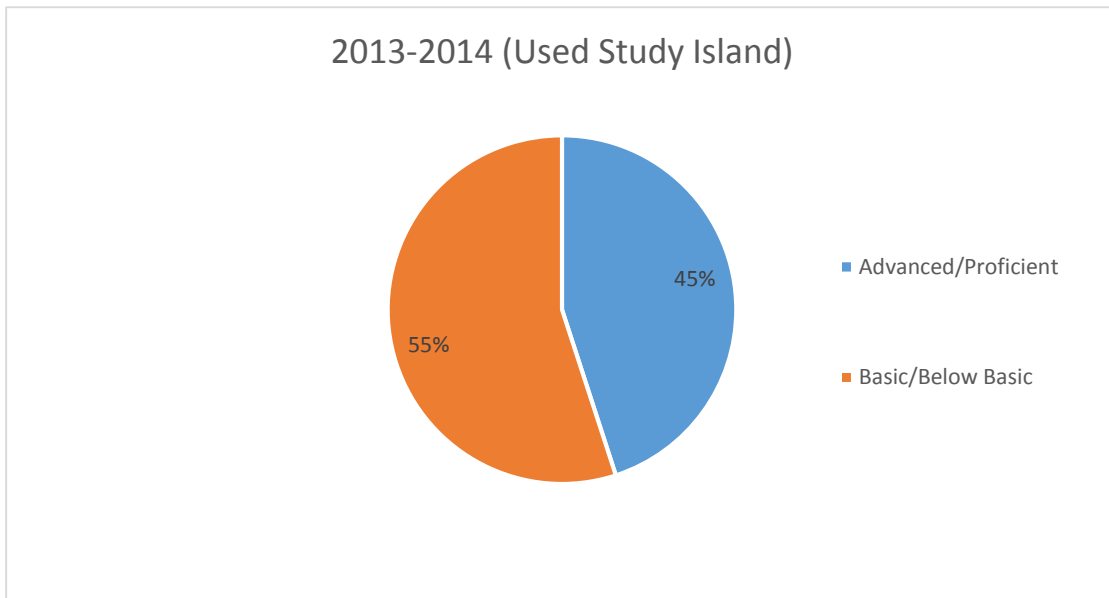- Basic/Below Basic

45%

55%

Table 2 and table 3 represent the percentage of students from each grade year that tested in the Advanced or Proficient category. The student's scores determine which place they fall under. The four categories are Advanced, Proficient, Basic, and Below Basic. In order to achieve Advanced or Proficient each student must score above 200 on a scale between 100 and 250. As the graphs show, the students who did not use Study Island actually had more students test in the Advanced/Proficient category than the students who used Study Island throughout the school year in 2013-2014. These findings were interesting because even though the Null hypothesis was accepted, the average score did increase slightly when Study Island was used. Even though the averages increased, the amount of students scoring in the Advanced or Proficient categories still decreased.

Conclusions and Recommendations

This study was done to determine if Study Island could be used in classrooms to improve state test scores. Schools throughout the United States are being evaluated on their students' test taking ability at the end of the school year. If Study Island could be proven that it will in fact help schools and their scores, it could become an extremely valuable tool to schools.

The study was extremely helpful in comparing using Study Island in class compared to not using it. However, there are several recommendations for future research and studies pertaining to Study Island and technological programs in general.

First, the sample only included a total of 120 participants. The sample will need to be much larger and more diverse to prove any hypothesis about the use of Study Island. Second, the study would be more valid by comparing other classes and data from more years. For instance, the current group of students who participated in the test tend to be poor test takers. The study could also be more improved by testing it on the other subjects that use the End of Course exam as a state assessment. Lastly, a variety of other instruments could have been used to evaluate and analyze the effectiveness of other computer programs that could enhance classroom instruction. More research pertaining to similar studies must be conducted in order to analyze which programs would be best to use.

The conceptual underpinning stated that Study Island would improve the EOC scores. It stated that rehearsing the information would aid students in their test taking abilities and overall knowledge in American History. While the statistics show that the

test scores did in fact improve, there was not a significant difference between the groups of students. While the conceptual underpinning was not inaccurate as the scores did improve, it also was not completely accurate because the data changed very little.

In conclusion, overall the study suggested that Study Island does not improve End of Course exam scores. The Null Hypothesis was accepted and proved that Study Island would not improve the students' scores, at least not significantly enough. The results did not support the classroom observations of the students during the study. Students seemed to be more engaged, motivated and able to obtain higher academic achievement when the teaching and learning process was included in daily lessons. However, more research and analysis is suggested to get more extensive results.

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assessments-using-study-island/

Appendix A

2012-2013 Score	Student Number	2013-2014 Score
200	1	229
182	2	203
206	3	185
185	4	203
165	5	203
225	6	176
179	7	191
231	8	173
188	9	194
209	10	179
215	11	197
221	12	166
200	13	185
203	14	225
182	15	200
162	16	162
194	17	182
197	18	197
206	19	194
176	20	191
232	21	234
229	22	194
170	23	225
159	24	173
206	25	217
200	26	173
221	27	179
166	28	239
182	29	194
234	30	191
162	31	179
200	32	169
169	33	217
173	34	182
203	35	179

214	36	221
185	37	185
217	38	200
197	39	173
220	40	191
203	41	200
221	42	225
203	43	234
179	44	221
169	45	206
225	46	229
194	47	234
162	48	162
203	49	200
162	50	151
203	51	221
221	52	166
154	53	250
191	54	166
173	55	221
229	56	206
166	57	162
182	58	188
197	59	229
194	60	206
194	average	197

48% Advanced/Proficient   46% Advanced/Proficient