On-line Tutoring and Students: Measuring the Efficacy of Tutoring and How it Affects Completion Rates of Algebra Students

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Inquiry Brief

Abstract

The purpose of this action research study was to quantify the success rates of Florida Virtual School Algebra I students that attended tutoring sessions offered by FLVS. A study was conducted to measure the efficacy of tutoring and how it affects completion rates of algebra I students. It has been hypothesized that students attending online synchronous tutoring sessions had a higher success rate than those students that did not attend. In 2007-2008, over twenty-two thousand students came for help. This study focuses on success rates of a small group of Algebra I students that attended online tutoring from January 1, 2008 through March 30, 2008. Elluminate participant reports were used to gather the names of the students. The FLVS Enrollment Department documented the grade for each student, and basic statistics were used to calculate the success rate of each student. Online surveys were also used to measure student attitudes about the tutoring department. Although the study is ongoing, results indicate that online synchronous tutoring positively impacts student achievement.

Question

Does the FLVS tutoring department play an integral role in providing quality tutoring to help improve student achievement outcomes and completion rates? Does the FLVS Math Tutoring Department have a direct and positive affect on student completion rates?

Sub-questions

How many teachers encouraged their students to participate in tutoring? How does the success rate of those students attending tutoring compare with the success rate of student body population?

Introduction

Background, Context, and Problem

On-line distance learning with Florida Virtual School is an emerging form of technology globally delivered to students. They have led the way in the on-line learning environment for secondary education by pioneering front line innovative ideas and programs to ensure that students gain the skills and knowledge needed for life long learning. Erin Garaghty (2008), Director of Communications and Public Affairs for the Florida Department of Education, reported that Governor Charlie Crist was given an award for the state of Florida being recognized as the number one provider of virtual education in the nation. Garaghty also reported that The Florida Legislature enacted the School District Virtual School Program in 2008 that required all school districts to offer full-time virtual education for every child in the state of Florida in kindergarten through eighth grade (2008). This legislative enacted program has generated explosive growth for Florida Virtual School. According to Vicki Jensen (2009), Instructional Leader for Florida Virtual School, the staff of FLVS is expected to double from approximately five-hundred to that of nearly one-thousand by the summer of 2009. Innovation must keep up with the growth. One area where on-line distance learning has seen growth with Florida Virtual School is in mathematics.

Satya Sundar Sethy (2008) discussed that Blended Learning plays a vital role in on-line distance learning for tutors employing various synchronous forms of communication. One aspect of blended learning is the on-line component. The on-line component accommodates various types of learning styles and the tutor provides students with the synchronous platform to communicate. This leads to a positive transfer of student interaction. One way to transfer this positive student interaction would be through

offering on-line synchronous tutoring for the mathematics department of Florida Virtual School.

Student personalities and learning styles vary in the on-line environment. According to Bosnick (2008), on-line learners of mathematics fall into two different categories: Younger than average advanced learners that are in control of their pace more so than in a traditional classroom; and the older than average group that need a slower pace and more individualized instruction than that offered in the traditional classroom. The on-line tutoring program can benefit both categories of students. Agarwal (2007), writer and business consultant for a notable on-line tutoring company, argues that on-line tutoring provides shy students with the ability to find strength in asking questions without feeling intimidated by other students in the class. Agarwal also notes that some students may loose interest in traditional forms of tutoring such as face to face tutoring. On-line tutoring offers all students an interactive way to learn that touches on many different styles of learning. Those styles are: kinesthetic; auditory; and visual. Kinesthetic learners may use the various different tools to write on the whiteboard and type in the text area. Auditory learners can hear the tutor and respond accordingly through the use of the microphone. Finally, visual learners enjoy seeing the problems, shapes, colors, and graphics on the screen. Gardner (2007), an expert in special education and innovative practices, found tutoring to be a positive means to emphasize training, application, and evaluation. In continuing, he noted that students at risk of failure were studied and found to be able to make substantial academic gains in the area of mathematics (Gardner, 2007).

To equip students with the 21st century skills needed to thrive in the global market, teachers are integrating traditional methods of teaching with more problem based activities that encourage critical thinking and teamwork that is often present in a

synchronous environment. Berge (1995) noted the pedagogical recommendations for on-line teachers. Some of those recommendations are: Have clear objectives; maintain as much flexibility as you can; encourage participation; maintain a non-authoritative style; be objective; do not expect too much; make the material relevant; and require contributions and responses. The teachers of Florida practice these pedagogical recommendations.

Florida Virtual School's on-line synchronous tutoring program is innovative and offers students with a variety of styles to learn in the comfort of their own homes. To be successful in the on-line tutoring environment, the tutors of Florida Virtual School must continue to be innovative, constantly update through training, evaluate the program, and apply the knowledge learned.

Purpose

Since it was founded in 1997, Florida Virtual School has led the way by pioneering front line innovative ideas and programs to ensure that students gain the skills and knowledge needed for life long learning. One such innovative idea is Florida Virtual School's tutoring program.

The inception of the FLVS math tutoring program occurred in 2004, from the need for students to receive extra help with their math lessons. Four adjunct teachers provided phone tutoring during set office hours. Should a student need assistance with their lessons, they could call during the specified times of the tutors. This program seemed successful, but there was no data to support the success. However, one problem that existed from phone tutoring was that the students could not see the teacher working out the problems over the phone. The program lasted until an idea to implement live real time tutoring came into existence. The shift to online tutoring was made in November

2006, with both programs running concurrently until July of 2007. Since that time, FLVS has offered real-time online tutoring serving students in Math 1, Math 2, Math 3, Algebra 1, Algebra 2, Geometry, Liberal Arts Math, Pre-Calculus, and now Spanish. Our current staff consists of one full-time teacher that divides her time between the substitute department and the tutoring department and eight adjunct state certified subject matter experts. Last year, the tutoring department served some twenty-two thousand students.

During the Summer 2008 Town Hall Meeting, CEO Julie Young delivered a compelling key note speech about the tightening of the state budget. Florida Virtual School was losing state funds due to increasing student withdrawal rates. However, she praised the hard work and dedication of the teachers for their existing exceptional outcomes of students. Young's speech supports the need for the constant change, improvement, and further inquiry of the viability of this program for the students of FLVS. It is the hope that, through the positive results of this study, this program will receive the much needed funding to continue to deliver quality online tutoring for the students of FLVS.

Methods

Setting and Participants

The setting for this action research project was a small group of randomly chosen Algebra I students who participated in the FLVS on-line synchronous tutoring sessions during January through March of 2008. The math students come in for tutoring by clicking on the active link in their classroom during specified tutoring hours. The students pose questions and use critical thinking skills to interact with their tutor to seek out their answer. They are also involved in the learning process because they are given the option to text or speak directly with the tutor and write on the whiteboard. This study

focuses on the preliminary findings of the data gathered from January 2008 and March 2008. Currently, the data for February 2008 is still being analyzed. Two-hundred seventy-seven students were involved in the study. Their data was sorted by teacher to determine which students of a particular teacher had the greatest involvement. They were also sorted by scored performance on completion of the Algebra I class. Continuing research will identify whether students attending tutoring were taking Algebra I for credit recovery purposes.

Measures

A variety of instruments were used to collect data to determine the success rate of the individual students. The measurements used included the *Elluminate* Session Attendance Reports, FLVS Enrollment data, and a survey.

Procedures

Elluminate Session Attendance Reports were collected for January 1, 2008 through March 31, 2008. Students were chosen for the study who signed in properly with their first name, last name, and their teacher's name. The study consisted of two-hundred seventy-seven students. Once the student's names were recorded on an Excel spreadsheet, they were sent to the FLVS Enrollment Coordinator, Danae George, to tally the data for each student. Data was categorized as: complete; withdrawal no grade; withdrawal failing; and issued grade of failing. A comparison will be made for the same months for the entire algebra 1 school's average of the same categories. This comparison is an on-going process and has not been completed yet. The data for the month of February is still in the data collecting phase. Students were sorted into groups by teacher to measure which teacher's students frequented the tutoring room the most. In addition, an online survey will be implemented starting January 2009, that specifically focuses on

asking questions dealing with student performance in an FLVS tutor session and its correlation to completion rates.

Data Analysis

Results

Figure 1 shows the completion percentages of the two-hundred seventy students that attended tutoring sessions. Of the two-hundred seventy students that completed, 88.15% completed with a C or higher, 9.63% completed with a D, and 2.22% completed with an F. Four students are still actively working to complete and three students withdrew from the class prior to completing.

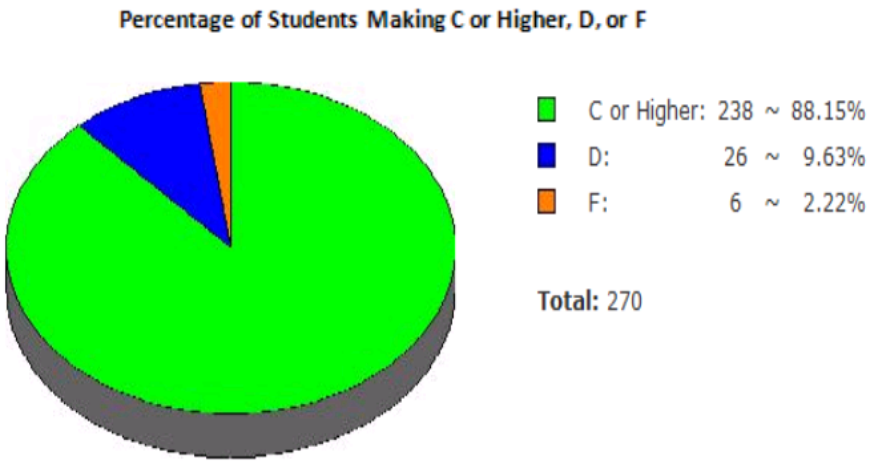


Figure 1: Percentage of Grade Distribution of Completers
Source: FLVS January and March 2008 Enrollment Data

Figure 2 shows the grade distribution of students that attended tutoring sessions. The grade distributions is as follows: seventy-three A's; ninety-five B's; seventy C's; twenty-six D's; 6 F's; four Still Active; and three withdrawals.

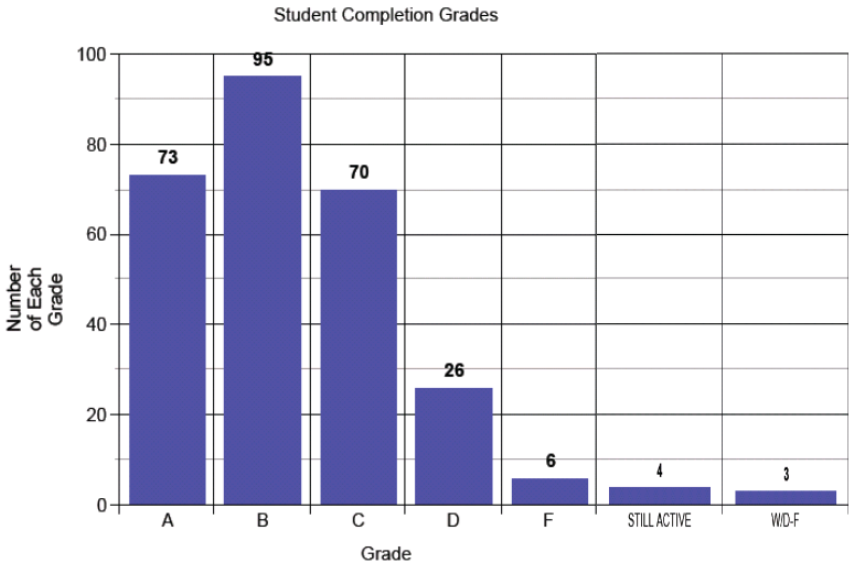


Figure 2: Grade Distribution Data

Source: FLVS January and March Enrollment Data

Figure 3 shows the teachers of students who participated in the study. It was apparent that Mr. Williams had the greatest number of student participation with the tutoring program. This may be in part to his active participation in the tutoring program through his pilot peer tutoring program. He has been instrumental in advertising the success of the tutoring program.

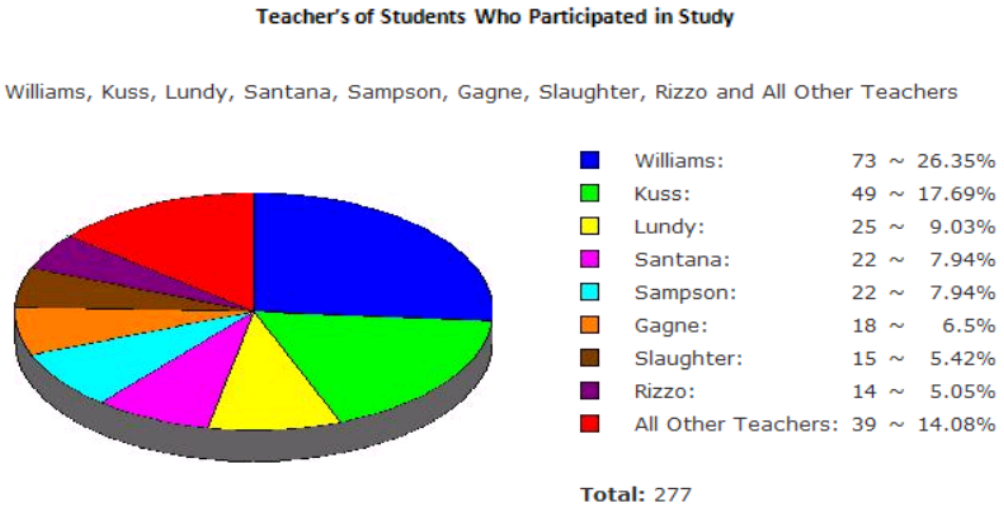
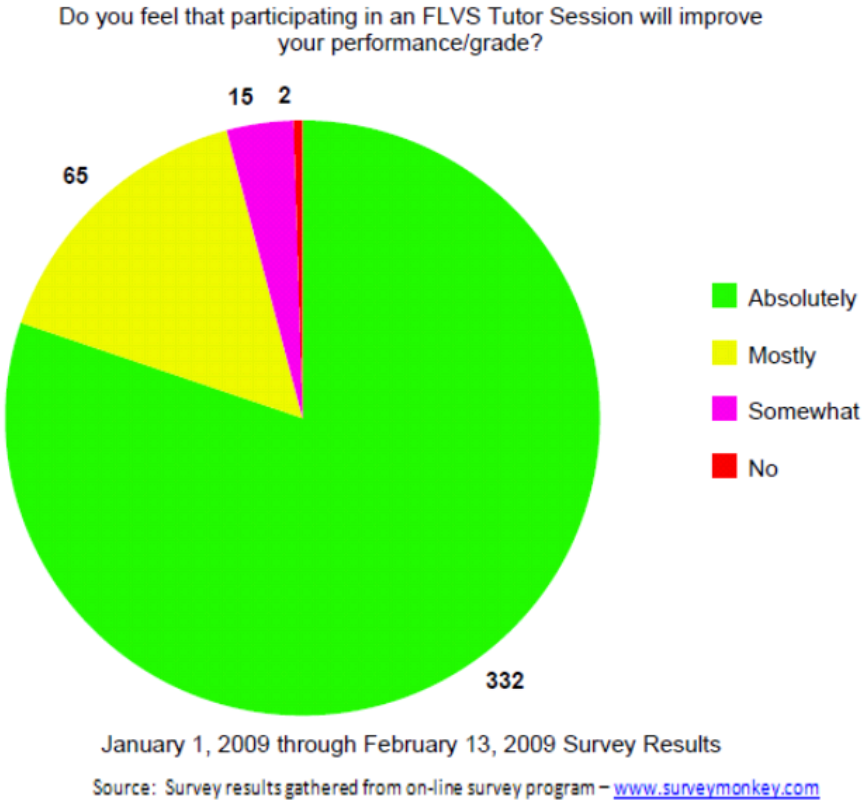


Figure 3: Teacher's of Students Who Participated in Study

Source: FLVS January and March Enrollment Data

Figure 4 shows the survey results of four-hundred fourteen students polled from January 1, 2009 to February 13, 2009. The following survey question was posed for all students: Do you feel that participating in an FLVS Tutor Session will improve your performance or grade? An alarming 95.89% of all students surveyed feel that tutoring will absolutely or mostly improve their grade.



Calendar

The time line to complete this project is two weeks. Data needs to be assessed for the month of February 2008. In addition, the study group will be compared with the completion rate of the entire student body.

Presentation

This data will be shared with Jeff Murphy, Director of Instruction for Florida Virtual School, and Vicki Jensen, the Tutoring Instructional Leader. It is the hope of this report that the program will receive a full-time director to manage the increasing needs of the program and hire additional tutors to meet the needs of the students.

Conclusion and reflections

This report indicates that students who participate in Florida Virtual School's online synchronous tutoring sessions have a high probability of succeeding in their class. The next step in this research is to meet with Jeff Murphy and discuss ways to further expand the tutoring department to continue to meet the needs of our students. Incorporating the tutoring program into the franchises will also be a topic of discussion. The peer program will also be discussed.

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