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**Research Proposal:
Integration of Technology into the Classroom for 21st Learning Skills**

Abstract

With the ever change technology climate, students need to be more prepared than ever before to compete in the global market. Teachers in middle school years are a critical key for demonstrating to student how to integrate technology into the learning process. This research study will seek to find out what technologies are currently being used in the classroom by middle school teachers. The study will go steps further to gather and analyze data on the integration of technology into the curriculum, emerging technologies for the classroom and teacher opinion on technology and student learning outcomes. By conducting this study, the hope is to demonstrate that the introduction of 21st Century learning skills and technology will enhance student-learning outcomes.

Introduction

In today's classroom, it has become essential to educate our future leaders, workers and citizens in new and innovative ways. The world is constantly changing and our students need to be prepared to become successful citizens of a global society that is constantly evolving. Being competent with technology has become a necessary skill that is equated with success in our society. Technology is used in almost every aspect of our lives, yet when many students enter the K -12 learning environment, they are being "unplugged". Why is our educational system lagging behind when it comes to teaching our children with and about technology?

The first need is to assess the current situation the school's technology. What is going on in the schools in regards with technology? This study will focus on the middle school, sixth through eight grades. The study will be looking at faculty

needs, current knowledge and opinions on the integration of technology in the classroom in regard to student-learning outcomes. The purpose of the study will be to discover the gap that may exist between what is currently being accomplished with technology in these grades and what students need to know in regards to using technology, both in school and as citizens of a global society. By analyzing the finding, we can make recommendation to enhance faculty training and implementation with technology, in order to narrow this gap.

Literature Review/Background

The world we live in is change exponentially. We are shifting to a global economy where citizens are going to be challenged to be creative, collaborative problem-solvers. They will need to know how to interact, engage and collaborative with people from multiple cultures using many types of technologies. Daniel Pink's book, *A Whole New Mind*, points out that today's students need a new set of skill to compete as tomorrow's citizens. They will need to match left-brain analytical skills with right-brain creative, innovative skills to be competitive and success in the global market.

So how do we go about training today's students for tomorrow's world? In a study conducted by the National Center for Educational Statistics on *Computer Technology in the Public School Classroom: Teacher Perspectives*, they found that in recent years educational technology has increased substantially. From 1997 to 2002, public schools with access to the Internet went from 35 percent to 99 percent. Yet, how effective is the educational technology integrated into the instruction and how truly accessible is the Internet connection? Teachers and students need to be able to function in the educational environment as efficiently as the competitive world in which they will be entering. We are finding that the demands placed on our educational system have long been by passed by our industrial-based instructional educational model and lack of funding to keep current with technology.

Teachers' intentions toward using technology in the classroom and how they go about integrating that technology into the curriculum is the key to the success of the 21st century classroom. The paradigm shift into a 21st century learning environment involves much more than technology, however technology does play a major role in this change. So we need to look at what drives teachers to use technology in the classroom. One study by Lee, Cerreto and Lee finds that teachers do not make global decisions about the place of technology in the classroom, but they do have control over whether to adopt a particular emerging technology within the curriculum. We need to find out where teachers currently are in their depth of knowledge with technology and confidence with integration of these technologies into their instruction. From there we need to build upon their knowledge base, giving them options, training and support to implement learning into a 21st century environment.

Implementation and integration of technology into schools and curriculum can be challenging, but we have to realize that technology is not going away. Computers and other emerging technologies, like mobile devices are believed to raise and improve a student's overall achievement, well-being and attitude in an educational environment. By utilizing technology as a tool that can revolutionize the classroom, we can indeed prepare our students to be cutting edge in the world market in which they will be competing.

Participants and Research Questions

Cross Middle School in the Amphitheater School District in Tucson, Arizona recently was awarded a grant to construct a 21st century classroom. A group of eight teachers along with two administrators have joined together to create a cohort to learn about teaching in a 21st century classroom. These educators volunteered to participate in this cohort with the reward being, use of the classroom technology purchased from the grant. One of the areas that will be addressed in their sessions is integration of technology in the classroom.

The group consists of seventh and eighth grade teachers from the following disciplines: art, social studies, science, math, and language arts. The administrators are the principals and the vice principle of the school. The researcher for this study is familiar with all of the administrators and teachers, but will just be observing the cohort as they conduct the training.

The study will focus on the technology aspect of the cohort training. The research questions to be asked are:

- 1) What kinds of technologies are currently being used in the classroom?
- 2) How are these technologies being integrated into the curriculum?
- 3) What is faculty opinion about using technology in the classroom?
- 4) What do faculty members currently know about emerging technologies?
- 5) How does integration of technology affect student learning outcomes?

To answer these questions a three-phase approach will be utilized. At the beginning of the training a questionnaire will be administered and another survey will be conducted at the end of the training. Then one year later, another survey will be given to the teachers to view the results of implementation and student-learning outcomes.

Method and Data Collection

A survey will be used as the method of research for this study. The questions on the survey will include a list of technologies available to the teachers along with rankings and space for comments. The survey will also be comprised of several emerging technologies that may or may not be available to the teachers. There will be questions about training for the technologies, how the technologies are integrated into instruction and the frequency of technology use. In addition, the teachers will asked questions regarding experience level, subject area, and comfort level with technology. There will be areas on the survey for teachers to answer open-ended questions in regard to future uses of technology, integration of

technology in their subject area and student learning outcomes as it relates to technology.

The teachers and administrations in this cohort have agreed to take the three surveys needed to conduct this study. The first survey will be administered at the beginning of the cohort training. At the end of the training, the same survey will be conducted. Then one year later the same survey will be given to see the implementation of the training.

The first survey will be used as a guide to assist the cohort as they train for and create the 21st century classroom. The second survey will be used to analyze the results and effectiveness of the training. Finally, one year later all three surveys will be compared to see if any patterns resulted from the 21st century classroom training and implementation of integration of technology and student-learning outcomes in the classroom.

Possible Findings

The outcome of this survey will possibly show teachers are currently using technologies, such as email, word processing, spreadsheets and a grade book tool. The survey may show some content being delivered using technology, but mainly instructor-centered teaching with Smart Boards or the Internet. Not much integration of technology in a student-centered environment will come through on the first survey.

The second survey should show that teachers are more familiar with various technologies, including emerging technologies. The survey might reveal that teachers have learned about integrating technology into the curriculum and guiding students through content with student-centered pedagogy. Hopefully, after the training the survey will show that teachers are more confident and excited about putting technology to use inside of the classroom and the content.

The third survey will reveal the implementation process of the 21st century classroom in regards to technology. We anticipate finding that teachers and students are not only surviving, but also thriving with the integration of technology in the classroom. Expectations are that student learning outcomes will be higher, because of the use of technology and 21st learning skills gathered throughout the first year's program.

This study can be continued and content changed or deepen as more teachers decide to use the 21st century classroom. As these early adopters lead others in the ways of 21st century learning skills and technology, the survey can serve as a guide to both the administrators and the teachers. Using the survey to see what is working effectively and what needs to be adjusted for better results.

References

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Research Proposal Questions to Answer

Integration of Technology in a 21st Century Learning Environment

I. Introduction

- a. Why is this research important?
- b. What is the major issue to be studied?
- c. What is the purpose of your study?
 - i. The purpose of my study: To discover the basic knowledge faculty members need in order to integrate technology into a student-centered learning environment?

II. Literature Review/Background

- a. What do other scientists say about the problem you are going to analyze?
- b. What relevant literature may be reviewed in the course of research?
- c. What is so important about the chosen sources?

III. Research Questions

- a. What kinds of technologies are currently being used in the classroom?
- b. How are these technologies being integrated into the curriculum?
- c. What do faculty members currently know about emerging technologies?
- d. What is faculty opinion about using technology in the classroom?

IV. Participants

- a. Who will be the participants in this study?
- b. How many participants will you study?
- c. How will you select the participants?
- d. What is my relationship to the participants?

V. Data Collection

- a. What data collection method are you going to use for your study?
- b. How will you go about collecting the data?

VI. Description/Method

- a. How will you conduct the study?
- b. How will you analyze the data?
- c. How will you organize the data?

VII. Procedure/Timeline

- a. What is my plan for the research timeline?
- b. Do I have a week-by-week plan?
- c. What is the start and finish for the research?

VIII. Possible Findings

- a. What do you expect to get from the work done?
- b. How can this investigation be continued/developed?