The Impact of Technology in the Classroom:

The Teacher’s Perspective

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**Abstract**

The purpose of this study was to investigate whether teachers felt that the use of technology in their classroom affected student engagement, excitement, learning and achievement. It was expected that incorporating technology into the curriculum benefited student learning. It was predicted that teachers would notice a higher level excitement and engagement when students used technology in the classroom versus traditional teaching approaches. Methods included teachers from preschool through secondary school and a 10-question online survey. It was concluded that the majority of teachers felt that using technology in the classroom benefitted their students in motivation and academics. Only a small percentage of teachers reported that they felt technology did not improve academics. The findings contribute to the ongoing research regarding effects of technology on student learning.

**Introduction**

**General Statement of the Problem**

The increasing availability and accessibility of technology in the past decade or so has produced the want (and need) of technology in the realm of education to be upgraded. Projectors have been replaced by Elmo’s and Smart Boards; lectures have been overrun with Power Points and Prezi presentations; even the dynamics of taking a test have been changed by the use of personal laptops in the classroom. Even outside of the classroom, society has changed in ways of using technology to make life easier, faster, and perhaps even more entertaining. With the exposure that nearly all students have with technology outside of the classroom, it is imperative for teachers and schools to keep up with the ways that students are taking in information. Technology in the classroom has many roles: first, it is a way to grab student attention to the subject matter and keep them entertained. Second, it serves as a progress monitoring tool to be able to identify which student(s) comprehend the material or not. If many students show deficits in a certain area, technology (such as Student Response Systems) are able to provide instant feedback during the lessons so that teachers can quickly determine these students and either reteach the material or provide alternate intervention. Lastly, and most importantly, technology’s role in the classroom should be to help students learn. Although research has been done on technology use in the classroom in trying to understand the benefits, our research is aimed to investigate how teachers feel about technology in the classroom in regards to student motivation and student learning.

**Review of Related Literature**

*Role of Technology in the Classroom Today*

Technology in society as a means to make life easier and faster is not a new concept; however, technology as a tool for teaching and learning in the classroom is a fairly new idea in the realm of educational purposes.  Without proper training on part of the teachers, technology can become a hindrance to the students.  The focus of technology in the classroom should be based on what the role of technology in the classroom is used for.  According to Marc Prensky (2008), “the role of technology in our classrooms is to support the new teaching paradigm.”  This means that teachers need to view the idea of technology in the classroom as a way to help support them in teaching the students how to teach themselves, according to the new standards.

Currently, our nation is shifting from the old set of standards to the new Common Core.  The Common Core’s mission:

“to ensure all students are ready for success after high school, the Common Core State Standards establish clear, consistent guidelines for what every student should know and be able to do in math and English language arts from kindergarten through 12th grade” (http://www.corestandards.org).

The Common Core is focused on developing and increasing students’ critical thinking, problem-solving, and analytical skills that they will need to be reading and successful post-high school.  The new standards of the Common Core also provide a way for teachers to use technology to “measure student progress throughout the school year” (“What Parents Should Know,” 2014).

      Technology has also played a significant role in new ways of assessing students thanks to Smarter Balanced Testing:

“The work of Smarter Balanced is guided by the belief that a high-quality assessment system can provide information and tools for teachers and schools to improve instruction and help students succeed – regardless of disability, language or subgroup” (Smarter Balanced Assessment Consortium, n.d.).

Smarter Balanced Testing is used for online assessments in order to test an individual student at their level.  For example, the test may begin with “2+2,” and if the student gets this answer correct it may ask “2 x 2.”  If the student gets this correct then it may ask “What is 2^2?”  At this point, if the student gets this answer incorrect, the assessment will focus on questions at a lower level than this particular question.  In essence, Smart Balanced testing assesses based on the highest level a student masters.  Currently, Smarter Balanced is creating a new assessment system that will incorporate the Common Core State Standards.  This assessment will be able to provide teachers with important information about student achievement and progress towards the college and career readiness goals set forth by the CCSS, “in a timely manner” (Smarter Balanced Assessment Consortium, n.d.).

      The role of technology as a means of assessing and progress monitoring is becoming extremely important in the face of the new standards in our nation.  However, technology as a tool in student learning is also just as valuable. Prensky (2008) states that technology in the classroom “should be to support students teaching themselves (with, of course, their teachers’ guidance).” With the multitude of resources available on the Internet, educational computer programs, and the vast array of ways to reach information, the role of technology should be used as a way for students to teach themselves and use their “critical thinking, problem-solving, and analytical skills” they are supposed to be gathering from the CCSS.  If people can agree that the role of technology in our classrooms is to support this new type of pedagogy and career-readiness standards, then then we, as a nation, can all move towards reaching that goal (Prensky, 2008).  Eyyam & Yaratan (2014) believe that using technology for educational purposes helps teachers provide immediate feedback to students.  This can help teachers provide individualized learning opportunities and potential interventions for students who do not understand.  The immediate feedback from the assessment results can also help to motivate students and improve student learning.

*Student Engagement and Student Learning*

Another role of technology in the classroom is for student learning.  Technology is being used in every aspect of education: English Language Arts, mathematics, science, social studies, and even physical education.  In these aspects, technology is not just used for assessment purposes; it is also being used to learn the material.  It is believed that if/when technology “is used appropriately in classroom instruction, it has a very positive impact on student achievement or success” (Eyyam & Yaratan, 2014).  Eyyam and Yaratan did a study investigating attitudes towards technology use in a mathematics classroom and whether the use of that technology improved their academic achievement.  Their study consisted of a pre-test before a mathematics unit, lessons involving technology, and then a post-test after the unit.  Their results showed that the use of educational technology in mathematics lessons had a positive effect on student success (Eyyam & Yaratan, 2014).  This study also shows students who expressed positive attitudes towards using the educational technology also had positive effects on the success of the unit.

*Impact and Benefits of Technology in the Classroom*

The matter of the usage of iPads in the elementary class has lately been one of the most discussed. In fact, the opinions on the given technical approach differ. Some educators believe that elementary students are too young to get involved in the tech education; while others list plenty of benefits that reflect the efficiency of the technical approach.
​ The article “Exploring the Use of the iPad for Literacy Learning” by Hutchison, Beschorner and Schmidt-Crawford (2012) concentrates on the advantages of the introduction of the iPad to elementary school students. In fact, the integration of the technological devices in the literacy classes help the students to acquire new skills that are essential for reading, writing and communication (Hutchison et al., 2012). Moreover, such a statement has already proved its credibility through a vast practical application. The initial purpose of the article was to illustrate the way a fourth grade teacher integrated iPads into her classes to reach digital literacy goals. A three-week trial period had demonstrated the results were much better than expected. It has been demonstrated that the iPad managed to meet the traditional print based literacy purposes as well as gave the opportunity to the young students to get acquainted with the literacies of the twenty-first century technologies (Hutchison et al., 2012). In addition, iPads contributed to the fruitfulness and engagement of the students in the class material. An application that allowed students to type on the printed text, record various audio files for a response, add images, and insert different symbols proved to be promising for the future implementation (Hutchison et al., 2012).
​ The article “Less Than a Class Set" by Redington (2012)illustrates a vast variety of approaches of the iPad implementation. In fact, the given article also picks up on the beneficial effects of the technical approach in the classroom. On the basis of the experiment conducted, positive results were obtained. First of all, iPads may provide the elementary students with an easy access to the web. In fact, easy instructions are defined by the teachers as one of the most significant aspects that contribute to the successful completion of the task. It also should be mentioned that the usage of an iPad helps the teachers to organize group work. For instance, one iPad may be given to one group of students. If the teacher selects an interesting and challenging application; the problem solving may prove to be even more interesting. Also, it is advisable to set the time and ask students to take a screen shot of their progress. In this manner, iPads may be a means of autonomous work of the students. In addition, iPads may take over a plenty of technical functions. Due to its screen size and form, it is easy to pass. Thus, it may easily substitute a projector. Moreover, when there is a need to visualize some notion or phenomenon, a teacher can appeal to the iPad without any excessive time spent.
​ Ashley Wainwright (2014) in the article “Effects of iPads in the Classroom on Elementary Education” enhances the benefits of the iPad application in the elementary classroom. To begin with, according to Wainwright, iPads are more likely to hold the students' attention rather than simple paper books. It comes as no surprise that the contemporary young generation is interested in video games. Thus, it is highly advisable to take an advantage of their interest. What is more, according to the research conducted, is if the material is engaging, the elementary students tend to demonstrate a rather successful performance. In addition, the iPad application gives room for customized learning. It is known that students mostly learn at different paces. Hence, the information which was learned by the virtue of iPad could be recurrently practiced. In this manner, students can acquire skills needed at their own level. Another beneficial feature of the iPad is that it contains a plenty of educational applications. Apparently, any topic covered in the elementary curriculum could be supported by the iPad app. What is more, the research has shown that iPad is helpful in obtaining the fundamental math skills. To be more precise, the elementary students who were playing educational games twenty minutes per day have increased their test scores by approximately fifteen percent.
​ Mark Pullen (2008) came to the conclusion that thoughtful implementation of iPads may bring beneficial effects for elementary students. First of all, usage of iPads makes the educational process more individual. Every student may receive personal math problems to solve or e-book to read in accordance with their learning gaps. In addition, the material the students publish is meant to be seen by the real-world audience. Thus, students tend to have a more responsible attitude to the school material they post. Moreover, iPads have an ability to extend the learning process beyond the school day. Students, being motivated by the iPad content, use it even at home. Also, Pullen claims that the usage of iPad by elementary students is likely to raise their tech expertise.

However, there are also several disadvantages that also should be taken into consideration. The reach content and abundance of applications may as well serve as distractions. It also should be mentioned that the excessive interest in technical devices may discourage a child from any physical activities, which may prove to be dramatic for the students of an early age.
​ To conclude, the implication of an iPad in the elementary class has already proved to be quite efficient. In the given manner, students have a chance to adjust the learning process to their level, pace and interests. What is more, students using iPads proved to be more motivated and interested in the educational process. Yet, there are some drawbacks that should be taken into consideration. iPads may also serve as distractions and prevent children from engaging in physical activities.

*Student Achievement with Technology*

The invention of the tablets and the internet has had a lasting impact on the lives of many individuals on a global scale. Tablets use has become a common global trend with tablets being used for several uses. According to Goodwin (2012), with regulated and guided use of laptops and tablets in the classroom students are able to advance on the research and reading skills. In addition, technology provides them with an expanded platform of doing extra research on an individual basis.  In terms of its utilization, technology has been effective at expanding from the primary use of the instructional delivery medium to the integral part of the learning environment (Goodwin, 2012). Further on, Goodwin explains that use of tablets provides a platform for accessing the wealth of information and enhanced means of communication through the internet.  As part of the productivity tool when it comes to the application software such as on the spreadsheets, databases and the word processors, technology aids in managing information and solving problems. With only one gadget, such as an iPad or laptop, a student can read articles, reference manuals, magazines, textbooks, poems, and short stories, among others (Zhu, Kaplan, Dershimer, & Bergom, 2011). The invention of new advanced technologies in the learning environments has advanced the world through disseminating knowledge to the masses in a short span of time.

Despite a number of positive impacts that technology has had to the reading and learning habits, there are also equal negative impacts on the same. Zhu et al. (2011) state that the first point to consider is that the use of tablets is addictive to the students when exposed to uncontrolled situations, thus spending more of their time in reading and exploring non-educative contents. More so, reading from the internet does not emphasize on the appropriate use of grammar and analytical skills, hence affecting on the ability of students mastering on the learning and reading skills.  Zhu et al. explain that most of the students use a significant portion of their time on social media and sending personal emails, thus consuming on their study time.  Excessive use of technology in the education system contributes to the declining of writing skills.  Zhu et al. point to the inappropriate use of tablets and laptops as a causal factor for the deteriorating learning and writing skills of the students. Students pay less attention to knowing the correct spellings of the different words, and do not pay attention on the proper use of grammar, and similarly pay little attention on how to perform cursive writing.

In essence Goodwin and Zhu et al. all present interesting facts on the subject matter. Both agree Tablets and internet use has generally improved people’s lives.  This has also had an effect on academic achievement because of this growing trend. Internet use through tablets has become part and parcel of our daily routine. At the same time, several changes caused by technology create some significant challenges for the schools.  These positive and negative views on whether to integrate technology to the processes of learning both help in the establishment of a comprehensive educational system.

*Personalized Learning for Under-Achieving Students*

Personalized learning is a very basic element in school development agenda that highlights teaching and learning as the heart of the educational process. Therefore, successful schools are those that are able to personalize the school improvement process through engaging staff and stakeholders as a part of the community of learning.

Personalization pedagogy is special because it expects all children to reach or exceed the national expectations from them in addition to develop their potentials and abilities. Expectations are set for over achieving students and under achieving students, including those who have been classified as having educational special needs (Berry, 2006).

Underachievement is defined as an inconsistency between ability and achievement (Reis & McCoach, 2000). There are some factors that are related to underachievement such as low self-efficacy, low academic self-efficacy, having negative attitude toward school and teachers in addition to have low self-motivation. It is important to illustrate that most of researches that investigated the common features of underachieving students have adopted qualitative, clinical or single subject methodology.

Concerning perceptions (personal expectancies), underachievers have low self-concept. In fact, there is unanswered question about the correlation between students' academic self-perceptions with their achievement. Does low self-perception lead to underachievement? Or does there another factor that has negative influence on academic self-perceptions and academic achievement?

For attitude toward school, over achieving students have great interest in and positive feelings toward school. On the other hand, underachievers display negative feelings and attitudes toward the school. Under achieving students have more negative attitudes toward school comparing to over achieving students. Majoribanks (1992) illustrated that the cognitive attitudes of children toward school has statistically significant relationship with achievement.

In order to deal with such variances, schools have to promote deeper learning, share common intellectual mission, have suitable expectations from students and adopt educational supporting system. Teachers can depend on technological programs and devices in order to collect the required data. Also, it is important to have social learning platforms in order to facilitate dynamic groups and team communication. Another important element is writing techniques that help the teachers to assign more writing for students in addition to get structured feedback. Other important tools include blogging platforms, video publishing resources and portfolio tools that enhance sharing ideas and data (Dawson & Guare, 2004).

Depending on effective tools and equipment, the school can personalize and enhance learning. The major element of this process is technology. Technology provides free atmosphere to learn anything, anywhere and anytime. Schools should enhance the process of students' access to internet devices (Mather & Goldstein, 2001). Through this step, students can collect a great deal of resources, references, data and information. Digital learning enhances the level of under achieving students to a great degree. They can get helping resources which are able to create new channels of communication and transferring knowledge.

Finally, it is important to illustrate that high achieving students illustrate more positive academic self-perceptions, motivation, attitudes toward school and teachers than low achieving students. Therefore, focus should be concentrated on under achieving students to raise their level.

*Usefulness of Technology*

Couse and Chen (2010) carried out a study to investigate the use of technology in the classroom. Their interest was to find out how the way technology is introduced in the classroom affects the way the students are able to take up the technology. In their study, Couse and Chen (2010) found that the way the technology is introduced in the classroom is very useful in determining the level of engagement by the student. They also found that prior knowledge of technology was not necessary or did not affect the way the students were able to interact with the technology.

Couse and Chen (2010) also wanted to investigate whether it was feasible for technology to be aligned to the educational needs of the students. They did this by asking teachers to rate the materials that the students (the participants) produced using the tablet computers with those that were produced manually using the normal pencil and paper. They found that that technology was feasible with regard to aligning it to the educational needs and requirements of the students.

Their study was important in reinforcing the idea of using technology in the classroom. It removed any doubts about whether technology can be used in a feasible way to reach better educational outcomes. More importantly, Couse and Chen (2010) found that even for young children, they do not have to be pre-exposed to technology in order for them to keep up with the others who already have these technologies in their own home. They however found that age was a factor in which case the participants who were older were more able to use the technology than the younger ones.

Dundar and Akcayir (2012) also carried out a study with regard to technology in the classroom. In their study, they investigated whether the use of technology in the classroom is more viable than the traditional way of teaching, with regard to helping the students gain more comprehension of the materials. In this regard, their findings were that the use of technology to deliver teaching and learning materials to the students did not affect their level of comprehension in a significant way. However, the study did indicate that the students who used technology were more likely to have a little less comprehension (understanding of the materials) of the materials. With regard to using technology (tablet computers in particular), they found that there was no difference between those who used technology and those who used traditional materials such as printed books.

The other element that Dundar and Akcayir (2012) investigated in their study was the level of retention of knowledge that was delivered through technology. They wanted to find out if there was any difference with regard to technology and student learning retention. They found that the retention level for both those who used the technology was the same as those who used the traditional books. These findings correlate with the findings of Couse and Chen (2010) and indicate that the use of technology in the classroom is viable, at whatever level of education. Both Dundar and Akcayir (2012) and Couse and Chen (2010) proved that technology is viable to be used as a way to enhance learning in the classroom. They all identified a number of positive advantages that are provided by the technology.

*Access to Tablet Computers in the Classroom*

Valerie is a researcher who is conducting an analysis on the effects of tablet computers usage in classrooms. From reading the literature, I can tell Valerie is observing and conducting interviews when gathering information found in the study. The research was happening in UK Schools such as Honywood School and Longfield Academy. (Thompson, 2013)

The analyst begins by explaining the role of technology; technologies assist learners to attain a platform that results to creative learning and innovative teaching. Students are in need of such a platform to express their creativity and innovation through digital media. Additionally, technologies are opening up opportunities that support creative learning. However, I can see Valerie is quick to point that access to technology alone cannot foster innovation. Other factors such as assessment, curriculum, culture, individual skills, learning format and teaching should be considered.

After the introduction of the tablet computers, there were some changes among the students and teachers.

* Students were now collaborating more with the teachers
* The teachers were encouraging students to coach their peers
* Students were in a better position of becoming creative

The learning methodology of the students was improving as they were researching their topics online and creating presentations. Since the introduction of the technologies in classrooms was a new phenomenon, teachers were having trouble. (Thompson (2013)

* Teachers were overlooking the full potential of the gadgets as they were focusing on subject specific apps only
* Teachers were treating tablets as multi-user devices. Tablets are for single users; they are not meant for more than one user

Towards the end, I see Valerie is discussing other topics that were emerging. (Thompson (2013)

* Funding tablet computers

The researcher notes that schools were mainly relying on parental donations; parents were contributing to funding these programs.

* Impact on disadvantaged students

There could be an academic gap between students from poor and rich families.

* Teacher professional development

Without proper strategy and support, teachers might not achieve educational benefits.

 Valerie is finalizing by calling for more research in this field.

*Students’ Motivation to Learn with Technology*

Many learners are motivated and excited to use mobile devices such as tablets in the classroom setting (Ciampa, 2014). In a traditional environment where pencil and paper have dominated the curriculum, tablets and other forms of technology can offer a pleasant change of pace for students. As technology becomes more prominent in day to day lives of many people, individuals are being introduced to these advanced electronics at a younger age. It should be no surprise that students would find excitement in the prospect of using these familiar devices during portions of their class. In the past, few computers may have been available in a classroom to assist in learning, perhaps due in part to space and expense. Like many technologies, tablets have become more affordable than ever before, making it easier to bring these devices into classrooms. Being more affordable means, instead of having only one or two computers, each student may have simultaneous access to a tablet.

Once these tablets are in the hands of the students, the question remains as to what motivates them to continue using them. Educational researcher Katia Ciampa set out to find some answers. Ciampa is associated with the Teacher Education Department at Brock University, St. Catherines in Ontario, Canada. In a qualitative study, Ciampa (2014) explored the experiences of a sixth grade teacher and her students who use tablets as part of their classroom instruction. The focusing question was: what do elementary teachers and students perceive as the motivational affordances of using mobile devices for learning? For her framework, Ciampa used Malone and Lepper’s (1987) taxonomy of intrinsic and extrinsic motivations for learning. The study took place at a suburban Catholic elementary school in Southern Ontario, Canada. The participants included a sixth grade teacher and ten of her students. The students who attend the school are predominately white, upper-class, and have an average family income of $164,000. Outside of the classroom, nine of the ten students own either an iPod, iPad, or both.

The research study was carried out over a period of five months. The project involved teacher and student interviews, a teacher blog, observational fieldwork and ecological surveys of the community; however, only information from the teacher blog, as well as student and teacher interviews conducted at the end of the 5-month study were reported. The teacher kept a blog about her students’ attitudes and reactions with using tablets in the curriculum. At the end of the five months, 15 minute, semi-structured individual interviews were conducted with each student and the teacher. Six key aspects of successful mobile learning systems were identified: challenge, control, curiosity, recognition, cooperation, and competition (Ciampa, 2014).

One of the main findings in the research is that challenge played a major role in student motivation (Ciampa, 2014). Because the educational apps were capable of adjusting the difficulty level, students were continually challenged (Ciampa, 2014). Educational apps such as Whirly Word or Bluster ensured that learners were never under or over challenged; instead, the challenge could remain within an appropriate level for each unique user (Ciampa, 2014). Students seemed to enjoy the utilization of the tablets because they also provided immediate feedback including how well the students performed and what they can do to improve their scores (Ciampa, 2014). Part of the challenge is reaching predetermined goals.

One of the benefits of using tablets is that they provide the students with a sense of control (Ciampa, 2014). Students are now able to work at their own pace, alleviating some of the struggle of keeping up with the overall pacing of the instruction. It also allows students to progress faster, precluding some of the boredom that can manifest due to a lack of challenge (Ciampa, 2014). Oftentimes, students fear being called on by the teacher to read or answer questions. Sometimes they may not know the answer; others may simply dislike being put on the spot. Either way, students can decide whether or not to share their progress or score with other students (Ciampa, 2014). Working individually with a tablet may mitigate the anxiety or discomfort students experience in a typical classroom setting.

Multimedia and interactive aspects of the tablet may provide additional capabilities that are missed with traditional teaching methods (Ciampa, 2014). Much of the learning in traditional instruction has historically been reading intensive. Because the tablets can provide a multimedia experience, they may appeal to more learning styles than regular instruction (Ciampa, 2014). Ciampa suggests that “the tablet allowed teachers to create multidimensional learning environments which catered to multiple learning styles” (p. 90). With a variety of learning tools, students can have an experience catered to their learning style, creating a more engrossing learning experience (Ciampa, 2014).

Mobile technology allows students to learn anywhere at any time, bridging the gap between school learning and home learning (Ciampa, 2014). One of the biggest advantages of the tablet is its portability; it can be taken around the house or around the world. Portability also means that the device and applications can be accessed at the convenience of the user. Engaging educational apps may motivate students to continue using them outside of the classroom, even when they are not required to. Sarah, a sixth grade student, said “I really enjoy the iBooks on the tablet because you can find any book; whereas in our library, there isn’t as much variety and choices” (Ciampa, 2014, p. 91).

Tablets also provided students a sense of competition among each other (Ciampa, 2014). Optimal challenge and continuous feedback created a perception of competition by enhancing intrinsic motivation (Malone & Lepper, 1987). The competition was not always between other students; sometimes motivation existed with the desire to compete with oneself (Ciampa, 2014). Whether educational or casual, one of the core components of games is often the requirement of a player to reach a predetermined goal in order to win, get a better score, or advance to more difficult stages. The intrapersonal competition helps drive student motivation (Ciampa, 2014).

Cooperation was also a motivating factor for students (Ciampa, 2014). Although some students may prefer working independently, others may be motivated by the idea of working within a group. Students in more cooperative learning environments engaged in more positive and directed interactions with each other (Ciampa, 2014). The teacher, Natasha, believed that mobile technology within the classroom fostered inclusion (Ciampa, 2014). The tablet can create an environment that engages all students regardless of ability, disability, background or style of learning (Wellings & Levine, 2009). In essence, the tablet brings a multitude of students together that may have otherwise felt a sense of isolation and exclusion. Sharing achievements and being recognized for their accomplishments are also important motivators for students (Malone & Lepper, 1987).

The framework for examining how motivation is applied toward mobile learning is borrowed from prior research—Malone and Lepper’s (1987) taxonomy of intrinsic motivations. The presence of these aspects may become motivational factors for the use of mobile devices for learning. It should be noted that, according to the teacher, when the children were offered free time with their tablets they often continued working with educational apps instead of casual gaming apps. The motivation to learn was not due to the use of the tablet alone; instead, it resulted from the key aspects that the apps provided the children: challenge, control, curiosity, recognition, cooperation, and competition.

**Assumptions**

There are a few assumptions from this proposed study: students are excited to use technology to learn. This excitement leads to students actively participating and engaging in the lesson. That active participation and engagement leads to higher success and student achievement in the classroom.

**Research Question**

 The purpose of this study is to investigate if teachers feel that the use of technology in their classrooms produce an effect of student engagement and excitement and to see if that engagement has an effect on student learning and achievement. Do teachers feel that the incorporation of technology in their classroom is benefitting their students?

**Hypothesis**

 We think that our research will support the general paradigm of technology improving student success in the classroom, as well as beyond. We feel that teachers will be able to notice a higher level excitement and engagement when their students are using the technology in the classroom to learn versus them using traditional methods. We also think that because of their engagement, teachers will be able to notice a degree of student learning of the material because of the technology.

**Foreshadowed Problems**

Potential problems we see in our proposed study are the locality of where we collected our data. Our data from teachers mostly came from only three different schools in the immediate area. The results may show a certain trend due to the accessibility the teachers in one school district may have to certain types of technology. Other school districts and teachers may have different training and different types of technology. Our results will only be able to reflect the attitudes of the teachers in this area.

**Definitions of Terms**

* Technology, in our study, includes computers and laptops and their educational programs such as Lexia, Accelerated Reader, Illuminate, etc…. It also includes Smart Boards, Elmo’s, Power Points, and Student Response Systems.
	+ Student Response Systems are wireless, response systems that collect and record student answers.

**Significance of the Proposed Study**

This proposed study is significant in the area of technology because it is important to get an idea of the teacher’s perspective. The teachers are the ones who are with these students every day, six hours a day, every week. They know their students better than a single pre-test/post-test would be able to. This issue is important to study now because technology is creating so much change in the classroom, and the change is not just for the students. If this study is successful, the results would yield an idea about how/if these changes of implementing technology in the classroom is the most beneficial to the students, based on the experience and observations that their teachers have day in and day out. The results, if positive, would give reliability to the new ways of using technology in the classroom and a “jumping off point” to go from for the future use of technology. However, if the results come back negative, it would provide grounds for the new use of technology to be reevaluated to find the best possible way to help the students. Providing the best possible way to help students learn is extremely important in the education field currently due to the new Common Core standards in the nation as a whole and for states, such as California, whose education results are continuing to decline. If we were to show that the current use of technology in the classroom is beneficial to the students, then school districts and teachers would be better helping their students reach those goals. However, if we found that the current use of technology is not helping the students, then it would provide reason to start finding better alternatives to help students learn and reach those goals.

**Design and Methodology**

**Subjects**

34 teachers were used for the purpose of this study. Teachers were from multiple schools in the Inland Empire and spanned from the grades of pre-school to middle/high school and even to undergraduate studies.

**Data Collection**

 Our data was collected through an electronic survey on surveymonkey.com (Appendix 1). The survey consisted on 10 questions aimed to receive information from teachers about the impact that technology in their classroom had on their students. Questions were created to solicit information about grade taught, availability of technology in the classroom, how many hours technology was used for teaching purposes, noticeable excitement for use of technology for the students, potential distractions, evidence of student learning, and whether or not teachers enjoyed using the technology in their lessons. A pilot study was conducted and the survey was given to five teachers before we sent it out to ensure questions were reliable and valuable. No changes were needed.

The final survey was distributed by each group member by a URL link (https://www.surveymonkey.com/s/K28P8QL) to send to teachers we knew. The survey had one open-ended question that asked for grade level taught; the rest were multiple-choice options. Question 1 asked for grade level taught: respondents were to type in the grade level they teach. Question 2 was a “yes or no” question asking if their students use technology for educational purposes at their school. Question 3, respondents were asked to choose which subjects their students use technology with. Respondents were able to choose more than one, if applicable. Question 4 asked respondents to choose how many hours a week (in increments) their students use technology (0-2, 3-5, 6-8, or over 9 hours). Questions 5-10 were rated on a scale of *Strongly Agree, Agree, Disagree,* or *Strongly Disagree.* Survey results were immediately calculated on surveymonkey.com to be analyzed.

**Data Treatment Procedures**

 Once the surveys were collected on surveymonkey.com, the results were calculated into percentages. We used the results and put them into pie charts in order to be read easier (see Presentation of Findings).

**Presentation of Findings**

Below you will find the reports and percentages on 5 of the 10 questions that we thought were most pertinent to answer our research question *Does technology increase student learning and motivation?*

Nearly eighty-two percent of students use technology in their classroom between zero and five hours a week. About eighteen percent of students use technology in their classroom over six hours a week.

Over ninety percent of teachers taking our survey stated they either *Strongly Agree* or *Agree* with the statement “Students are eager to use technology to learn.” About eight percent stated they *Disagree* or *Strongly Disagree.*

Over ninety percent of teachers taking our survey stated they either *Strongly Agree* or *Agree* with the statement “I have noticed progress in student learning due to technology.” Eight percent stated they *Disagree;* 0% stated they *Strongly Disagree.*

Ninety-seven percent of the teachers surveyed stated they *Strongly Agree* or *Agree* with the statement “Students benefit from technology in the classroom. Less than 3% stated *Disagree;* 0% stated they *Strongly Disagree.*

Ninety-four percent of the teachers surveyed stated they *Strongly Agree* or *Agree* with the statement “I enjoy using technology for instructional strategies in the classroom.” Less than 6% of teachers stated they *Disagree;* 0% stated they *Strongly Disagree.*

It may be concluded from the findings that the majority of teachers have felt that using technology in the classroom benefitted their students in motivation and academics. Only a small percentage of teachers reported that they felt technology did not improve academics.

**Limitations of the Design**

This research seeks to collect data about the perception of teachers and instructors to the use of technology. The concern of the perception of teachers emanates from the increasing marginalization of traditional instructional methods and requirement for teachers to change approaches to accommodate the new changes. However, the mode of collection of data may prove to be problematic because the questionnaires are not very reliable. For example, lack of supervision in administration of the questionnaires implies that the respondents may be inclined to indicate what they think the researchers want to hear as opposed to their true experience of application of technology in the classrooms.

In addition, we concede that the thesis statement and the hypothesis, though a relevant part of the research process, have the potential to inhibit objectivity in the analysis phase. Requirement for disclosure of the purpose of the research to the respondents also serves to bias their responses and thus reduces the objectivity if the data collected in the questionnaires. The goal orientation in the research, it is oriented to show the positive attitudes of instructors to application of technology, may result in an element of bias. These problems are particularly relevant because of their effect of the outcomes of the research process. Certain responses may not be a true representation of the true feelings of the teachers.

The role of feelings in the research is also a problem. The aim of the research is to establish the ‘feelings’ of teachers towards introduction of technology in classrooms. Feelings cannot be measured objectively. For example, ratings are dependent on moods and may change with changing moods. In addition, quantification is relevant in establishment of trends. The difficulty in quantification of feelings is therefore a major stumbling block in the research.

**Conclusion**

It is evident that technology plays a major part in every facet of our lives today. In the educational or classroom setting, technology is increasingly being incorporated in the learning systems to achieve better learning outcomes and assist in easy and efficient imparting of knowledge on the part of the students and teachers respectively. According to this research, it is apparent that many teachers favor the use of technology in classroom learning since it comes with many pros that cons. A majority of teachers have confirmed that they enjoy making use of technology as an instructional tool in the classroom with students benefiting academically as well as in motivating them to learn. Technology offers an open atmosphere to learn new things in any place at any given time due to the availability of a huge amount of online resources, educational software, and the vast array of information. For the most part however, teachers need to be adequately trained on how to use technology in the classroom to avoid the possibility of them being an obstruction to student learning. In this regard, technology in classroom out to be focused on the role it plays in the classroom; to capture students attention, keeping them entertained and as a tool for monitoring progress about student comprehension of what they are taught. Conversely, it is worth noting that when technology is used in the classroom particularly in uncontrolled situations, it may be so addictive to the students since they might waste valuable time in exploring content that doesn’t add value in their learning. Besides, excessive social media use and sending private mails can hamper students writing skills as well as consume valuable study time. Nonetheless, technology on a teacher’s perspective supports a new teaching paradigm and brings numerous advantages than disadvantages in the classroom.

**Recommendations for Further Research**

Technology is fast growing. Schools have also not been spared in this transition as some of the old gadgets used I teaching are fast becoming obsolete. Technology is taking effect in schools though gradually. There is a laxity among the stakeholders to adopt fully the new technology. There are some few recommendations to anyone who would wish to proceed with this research project. After the research, the viability of the proposals should be looked into. The proposals are good yes. But how viable are they? Is every student able to access and effectively use technology to study? This question needs to be addressed. The person who may want to further the research must also establish whether or not there is technical know-how among the teachers. This technology will have to go through the teacher before it can get to the student. If the teachers lack the necessary information about the usage of contemporary technology, then the students will lack the much needed assistance from their instructors. Sufficient training should be availed to the teachers and other instructors so that that they can assist students effectively.

The subsequent people taking up this project must weigh the pros and cons of embracing contemporary technology in classrooms. It may sound like a good idea but as it was noted in the research, some problems may present themselves and this new approach may end up doing more harm than good. The teachers also must be interviewed keenly in order to establish their views on using technology in classrooms. Since the teachers have more experience than in the field of education, they know better what is best for their students. The insight they provide should be taken into account when following up with this project.

**Appendix 1**

**Survey**

1. **What grade do you teach? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **Do your students use technology for educational purposes at school?**

*Yes*

*No*

1. **What subjects do your students use technology with?**

*English Language Arts*

*Math*

*Science*

*Social Studies*

*Other*

1. **How much time do your students spend with technology a week?**

*0-2 hours*

*3-5 hours*

*6-8 hours*

*Over 9 hours*

1. **Students respond positively to educational technology.**

*Strongly Agree Agree Disagree Strongly Disagree*

1. **Students are eager to use technology to learn.**

*Strongly Agree Agree Disagree Strongly Disagree*

1. **I have noticed progress in student learning due to technology.**

*Strongly Agree Agree Disagree Strongly Disagree*

1. **Students benefit from technology in the classroom.**

*Strongly Agree Agree Disagree Strongly Disagree*

1. **Students easily become distracted while using technology in the classroom.**

*Strongly Agree Agree Disagree Strongly Disagree*

1. **I enjoy using technology for instructional strategies in the classroom.**

*Strongly Agree Agree Disagree Strongly Disagree*

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