Integrating Technology into the Classroom: How Does It Impact Student Achievement?

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Introduction

As an educator during the 21st century, it is important to note that technology is becoming more and more dominant in society. Many teachers have become very knowledgeable of how technologically-savvy students have become. In the field of technology, everyday upgrades are being made and new innovations are being discovered. As a result, the concept of technology is a stunning reality that has permeated not only our everyday lives but also our mere state of existence as human beings. What can schools do to make learning more interesting and meaningful to students? What are some factors that help schools become successful? Are traditional methods of teaching really obsolete? How does the use of technology in the classroom impact student achievement? What role does districts have in ensuring that professional development sessions involving technology are implemented correctly in the classroom? The purpose of this research is to give an in-depth analysis of the integration of technology in the classroom and the impact it has on student achievement.

In addition to technology, it is important to analyze the concept of student achievement based on the latest educational reform, the No Child Left Behind Act of 2001. For indeed, a number of guidelines have come to the forefront, and many of these guidelines center around the concept of student achievement. It is impossible to imagine schools responding to the challenges of standards-based accountability systems in a very technical, bureaucratic way. Researchers have begun examining the potential discrepancies between the intended curriculum, the implemented curriculum, and the attained curriculum. In order to have alignment with the intended, implemented, and attained curriculum, teachers need to be involved in numerous and varied professional development experiences that will allow them to understand what reform-oriented instruction looks like and how to achieve it (Parke, Lane, & Stone, 2006, p 245); therefore, the notion of receiving a high quality education lies mainly with the teachers and schools. It is important for all stakeholders to establish and maintain an active role in the education of students.

Review of Literature

Some key factors that help all schools become successful are the use of state standards to design curriculum and instruction, progress monitoring systems, and state accountability systems that make real consequences for professionals in schools. Walberg asserts, "By instituting testing and accountability as centerpieces of the education agenda, President George W. Bush and Congress reinforced central themes of state policies aimed at improving education through testing and accountability (Chubb, 55). The main goal of NCLB is provide all of America's children a high-quality education, where they can, at minimum reach proficiency on state standards-based assessments.   The quality of instruction that students receive has a monumental impact on how well students achieve. In order for today's students to be able to compete in a global society, student achievement must be improved. The United States cannot become complacent in its efforts to keep its status as the "world leader." There must be a national commitment to improve student achievement in order to ensure students are prepared to thrive in the digital age. The goal of becoming educated has always been to prepare students to live productive lives within society. The most effective schools provide a ladder of opportunities for struggling students (Blankstein, 2004, p.111).

Since the integration of the information age, there has been a dramatic shift in most of the paradigms on which traditional learning exists. Therefore, educators must rethink their existing educational patterns. In addition, students must be able to accept change, adapt to it and thrive from it. There must also be a shift in the way standards are produced, and this must be done with the incorporation of modern technology (Tsantis, 2008, p.3). Research shows that traditional methods of teaching can no longer be utilized to capture the interest of children who are being reared during the rapid growth of the computer age. As a result, the use of technology can serve as a catalyst for helping teachers understand individual learning styles of the children they teach. Because learning is a lifelong

process, technology is going to play a vital role in encouraging all stakeholders to be knowledgeable about the latest trends.

A number of new technological gadgets are on the market and are made readily available to students. It is important for schools to evaluate these new devices and note how they can enhance education. Teachers should be thoroughly familiar with the latest trends in technology in order to make learning as relevant as possible. Professional development still appears to be the focal point of training for teachers. In essence, it is important for students, teachers, and districts to stay informed about the latest advancements in technology. (EER State Spotlight, 2007).

Thus, research suggests that one of the most important ways to enhance student achievement is through educational technology. The impact of technology proves most powerful when focused on specific, measurable educational objectives, such as improved literacy. In addition, students demonstrate higher levels of motivation and engagement when using technology, which also contributes to improved achievement. (www.ceoforum.com) Incorporating technology into the classroom can help the nation's schools provide a world class education and equip students for life during the 21st century. In past decades, technology has become an essential part of the learning process. Trends in the classroom have gone from overhead projectors to innovative programs such as PowerPoint and whiteboards. Some individuals question whether or not the use of technology increases a student's ability to learn and retain more information. There are also others who believe that using more advanced technology provides both structure and clarification of materials to a lesson and these are important to the learning process (D'Angelo & Wooley, 2007, p. 467). It is evident that teaching methods and presentation of lessons have changed over the years. The instructor also plays a major role in the way that technology is incorporated into the classroom.

Mazten & Edmunds (2007) asserts, "By utilizing technology in the classroom, there is supposed to be a shift toward student-centered instruction" (p.422). Often times, teachers use technology in

ways that don't encourage them to change their instructional practices. Teachers must, then,

understand how technology connects with pedagogy and the content of the curriculum. Most of the

time teachers' technology professional development is short-lived and focuses only on computer skills.

When teachers' professional development only focuses on the technical skills needed to be successful,

incorporating it with instructional practices is undermined. To change this trend, professional

development must be presented within the context of student-centered instructional practices, and

then teachers will become more apt to change the way they present information utilizing technology.

Districts have increased spending on classroom technology in the past decade, because there is

a belief that a correlation exists between student achievement and the integration of technology into

the classroom. When teachers use technology, it is not done so in a way that changes their existing

patterns of teaching. It is not a good practice for educators to believe that technology is the answer to

all of their problems. Instead, educators must focus on innovative ways to make the use of technology

foster learning to get results. In order to achieve this success, districts and schools must adequately

prepare teachers by providing meaningful professional development opportunities (Foltos, 2008).

One key aspect of technology being incorporated in the classroom is having the necessary

support to make the process a success. It is noted that many teachers are hesitant about converting

from traditional ways of teaching to integrating technology into the classroom. In order for teachers to

effectively integrate technology into the classroom, they must have substantial support from school

administrators. The instructional leader is the key facilitator in an attempt to infuse technology into the

school's curriculum (Dawson & Rakes, 2003, p. 42). The problem that exists is that too many principals

are uninformed about and uninvolved in the role technology plays in their schools. Therefore, as school

administrators become more adept at guiding technology integration, the more prevalent it will become

in schools. Blankstein (2004) says, "Good leaders, therefore, are called to make organizational meaning

out what some would call uncomfortable situations.

In addition to instructional leaders, teachers play a vital role in the development and use of technology in education. The success of any technological program revolves around the willingness of teachers to motivate their students to use technology. In order for districts to achieve this success, district coordinators must plan meaningful professional development sessions that are not just "one-shot." Professional development should be an integral part of the district and school technology plan or the overall school improvement plan. Technology plans must receive the support of all stakeholders. If a technology plan is not carefully designed, the program will be short-lived. Technology plans should support the goals of the district, and technology itself should be utilized as a tool for improving and transforming teaching and learning. Planning committees must be developed to review school improvement plan and examine the needs of the districts. The team must build its knowledge base, have support for teachers, and have a plan for assessment of the program in the end. Therefore, achieving success with technology in education is viewed as an ongoing process with multiple achievement outcomes (www.ncrel.ofg/sdrs/areas/issues/methods/technlyg/te300.htm).

Several areas must be taken into account before developing new plans for technology. One of the most pertinent issues that should be noted is the current level of technology use already being utilized. Professional development teams must also conduct needs assessments to prioritize the types of professional development needed as it relates to technology training. The professional development session should be researched based, and student achievement should be at the forefront. Overall, the incorporation of technology allows teachers to implement new teaching strategies, to help students use collaborative process and further develop metacognition skills, and to encourage students to become active participants in the learning process.

Often times teachers are enlisted to sit through countless hours of unmeaningful professional development. However, when used correctly, technology can be used to engage participants in professional development activities and to deliver content at individual workstations in specific areas of

study. Incorporating the use of technology via professional development requires more than one-session exposure. Just as with all other newly introduced ideas, in order for the use of technology to be evidenced through student achievement, teachers must have the opportunity to implement its use, receive feedback, have ongoing training, and have some meaningful way of assessing its use (Gonzales &Vodicka, 2008, para, p. 3-4).

Educators must be able to embrace the changing times, and they must be optimistic about the integration of technology into the classroom. The shift of learning has gone from teaching isolated skills and information to teaching students to solve complex problems in a number of ways. Researchers' statistics reveal that there is no difference in access to technology between poor schools and wealthier schools. Therefore, the use of technology in schools is ongoing, unstoppable, and essential. As a result, teachers have begun to utilize the Internet as a valuable resource for instruction. Consequently, there is some skepticism about the use of technology in schools and whether or not it is further helping foster the education process (www.ncrel.org/sdrs/areas/issues/methods/technlgy.htm.) Students are meeting the requirements of completing out of class assignments that require the advanced use of technology; however, students' perceptions of the use of technology in the classroom is less positive, primarily due to teachers' abilities to utilize it effectively.

<div align="center">Conclusion</div>

In essence, the incorporation of technology depends primarily on the ability of the educator. It seems as if getting faculty and staff trained to use technology is more complicated than the use of technology itself. In its most basic form, technology use among faculty ranges from using services such as email, Internet, and online library catalogs to software programs. Members of the faculty must become knowledgeable about the various sources of technology available as well. According to findings in a report from *Edutech Report,* "Facilitators must experiment, adjust, and invent as they attempt to incorporate technology into the classroom EER State Spotlight…, 2007, p.1). Moreover, many educators

understand the need to integrate technology into the classroom, while others are apprehensive about the same issue.

The notion of incorporating technology is one that has gained widespread attention in recent years. Lowell Monke asserts, "There is a huge qualitative difference between learning about something, which requires only information, and learning from something, which requires that the learner enter into a rich and complex relationship with the subject at hand. (Noll, 327) Therefore, it is feasible to say that the changing trends of technology will almost always be met with opposition. However, teachers must consider the students whom they teach, and they must also take into account the various learning styles of these children. It is evident that many stakeholders have become dissatisfied with the state of education.   In an age of data-driven decision-making and accountability, Creighton advances the argument for staff development and technology implementation that will enhance student achievement, rather than relying on outdated methods of drill and practice. In addition, Creighton indiates that the larger picture in educational technology is not hardware or software, but curriculum, achievement, and technology's overall role in education. In closing, instructional leaders and teachers are the individuals that will have the most profound impact on integrating technology into the classroom once they rid themselves of "technophobia."

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