

Technology in the Classroom: a Tool or a Drag

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Abstract

Technology use in the classroom has always been viewed by educators as an additional burden, an extra curricula thing they must learn to be effective teachers and teach it to students. Today teachers (most) at least cannot function without one equipment or the other even if they don't like it, students needs and level of exposure to technology, global market requirement and instructional benefits have motivated teachers school and policy makers to implement technology in most schools in the United States. The use of technology in the classroom allows teachers to make a smooth shift into individualized instruction but not all teachers and students feel this way. This article will explore if technology is actually a great learning tool or a hindrance/drag to teachers and learners.

Keywords: Technology, education, classroom technology

Introduction

Technology use in the classroom has always been viewed by educators as an additional burden, an extra curricula thing they must learn to be effective teachers and teach it to students. Today teachers (most) at least cannot function without one equipment or the other even if they don't like, students needs and level of exposure to technology, global market requirement and instructional benefits have motivated teachers school and policy makers to implement technology in most schools in the US.

Gone were the days when technology was only found in big companies and government institutions until the National Defense Education Act of 1958 brought new money and new technology to schools but mainly in the vocational education.

The first computer developed with the help of universities was the vacuum tube-based computer in 1946 to help the military during the war. Then Russia launched a space craft (Sputnik) during the cold war and the United States under President Eisenhower and the race for technological advancement began fully. The interest in technology and the zeal to compete with Russia led to the National Defense Education Act (NDEA) which money and new technology into the classroom except it was mainly for vocational school students (Murdock, 2007). The *race for space* and the cold war generated enormous public support for development of technology but it was mainly geared towards space exploration.

The 1960s saw a rise in computer use by companies and the introduction of programming languages like COBOL, Fortran, BASIC and the Vocational Education Act which provided funds for the use of technology in school for universities to train programmers, computer maintenance and engineers using mainframe computers. Then in early 1970s, Intel developed its first microprocessor which ushered in the first microcomputers and a few software for basic instructional programs, but mainframes and minicomputer users were not ready to change even after Apple 1 Personal Computer(PC) were developed and donated to schools until 1979 where there was an estimated 15 million PC users worldwide (Murdock, 2007).

By 1986, 31 states use 13,000 PCs for career development and 25% of high schools started using PCs for college and career guidance using mostly Apple II, Apple Macintosh and IBM PC. When I came to this country in 1990, just in time for the introduction of Multimedia PCs, videodisc, database, authoring and graphic software to colleges, most computers had not enough hard drive space to install software so programs were delivered and ran on CD-ROM disks or 3 1/2" disk drives. I was still amazed by computers because I heard about it but never saw one before I arrived at my academic advisors office in September 1990 and decided to change my course from a masters degree in Educational Psychology to bachelors in computer science. How times have changes and I now feel like I am back where I was supposed to be in education but better technologically prepared.

I was lucky to be at the foundation of what was regarded as technology explosion in this country. Even though there was an increase in the use of technology worldwide and the popularity in schools and US classrooms had increased, most teachers do not have access to computers and those who had access will rather send their students into the designated computer laboratory for training. Between 1997 and 2007, technology growth in use, availability and access was extraordinary and the internet led to faster expansion with the use of large database of information, graphics interfaced computers, streaming videos and laptop computers made technology a valuable resource for education and educators.

The prevalence of personal computers and the shift from text based internet system to the current user friendly, graphic interface and the lift of the ban allowing the use of internet for commercial purpose led to an

increased use of technology in schools. According to the National Center for Education Statistics (NCES), 35 percent of American public schools had access to technology even though less utilized by teachers in 1994. By 2001, 80% of schools had internet access. Today about 99% of schools in the US have full fledged technology access from video to online instruction (Hall, n.d).

The availability and use of technology has provided tremendous access to information, truly created a global village and has continued to improve teaching and learning in schools. According to U.S. Secretary of Education Arne Duncan, “technology presents a huge opportunity that can be leveraged in rural communities and inner-city urban settings particularly in subjects where there is shortage of highly qualified teachers. At the same time, good teachers can utilize new technology to accelerate learning and provide extended learning opportunities for students”.

Use of technology in classroom

One look around and you cannot but appreciate the growth of technology use in and out of the classrooms of today. The teachers though overwhelmed with teaching and other duties have to learn how to use technology to augment teaching and learning process in their classroom. The early introduction of technology to schools and classrooms met with opposition, resistance, fear and lack of confidence in their ability to integrate it into their subject areas. Technology cannot be successfully implemented in a classroom without the teachers' competence and ability to use instructional technology activities series to meet students' needs at all level.

Teachers have realized that once setup properly technology is actually a time saver not a consumer. With funding from the federal government in their technology initiatives, the burden to provide this equipment is not with the school thus less financial stress on the school district.

The use of technology in the classroom allows teachers to make a smooth shift into individualized instruction and concentrate on developmentally appropriate use of technology for different age and material content (Aldridge & Goldman, 2007). Even though at the beginning it looked like more work, “technology affords us the ability to convey concepts in new ways that would otherwise not be possible, efficient, or effective with other instructional methods” (Klopfer, Osterweil, Groff & Haas, 2009. p.4).

Technology as a tool

In Klopfer, Osterweil, Groff and Haas (2009) recent study they examined the educational use of popular media that children K-12 are already familiar with took the time out to understand the use of medias like facebook, tweeter, myspace and games like Sim City. They feel the educational value of these technologies in the lives of our children, their growth and usefulness as they graduate into society to work in industries cannot be overemphasized. The cognitive implications of these technologies in enhancing students social network and data management skills is interesting; despite the unique challenges that accompany the use of these tools in the classroom, Klopfer etal (2009) discussed some strategies for overcoming these challenges to achieve successful learning experiences for both the teacher and students. These technologies offer opportunity to improve or positively impact teaching and learning in and beyond classroom.

- Ability to multitask: because these children are already game technology experts by the time they are 8 years old, it is easier for the teacher to build on what they already know. Leveraging the students' prior knowledge and academic required understanding.
- Independence for students to learn at their pace. Technology encourages individualized instruction and can actually help the proper implementations of No Child Left Behind.
- Affordable online education – increased number of Americans with degrees than ever in history because of the idea of education anywhere which University of Phoenix is at the forefront of making educational achievement and aspirations available globally through virtual learning environment.
- Increased student's knowledge of the world around them. The internet has created a global village where one culture is not so strange and most locations in the world are as far as Google earth.
- Instructional technology allows both the teachers and students to do activities that would have otherwise been impossible. (Postholm, 2007)
- Technology makes research and collaboration possible among higher institution scholars.
- Technology in the classroom has made it possible and convenient for students like me to sit in their home and get a degree.
- Increased multicultural awareness. Technology improves the teachers' ability to teach “authentic version of multicultural education”(Munoz, 2002) with the use of technology will generally depend on the teachers preparation in the instruction of multicultural education.
- Familiarity and exposure to various educational gaming devices can help the student process multiple information quickly; ability to determine what is important or relevant; process parallel information and have the capacity to experiment with new things.

- Technology increases teachers and student's motivation and self esteem as they see how much they can achieve differently and accomplish complex task that would not have been possible without technology.

Technology as a drag

The importance of technology in our educational system and in our classroom cannot be over emphasized, but as with any thing in life technology has a host of disadvantages that many feel will be a drag in the classroom, on education and ultimately in our society. This paper will examine a few of these issues. Wherever one turns there pops one technological equipment or the other from cell phones to laptops to gaming systems today's students are bombarded with all kinds of technology tools at a fast changing pace as possible many times not giving enough gaps to get use to the current one before an upgrade comes out.

- Despite the multi-billions spent to get computer technology to America's classrooms it is a shame that few teachers make full use of computers within their classroom, according to research funded by the Economic and Social Research Council (ESRC) (Anonymous 2006). This is not because teachers are not interested in technology but because they lack the self confidence in their subject area to use the technology available to them. Some teachers feel it is time consuming, a waste of time and would not use it beyond research for information.
- Teachers find it time consuming and a drag especially the teachers in subject areas like English, history, Arts, Music to list a few.
- Socio-economic differences: Even though there are computers everywhere, there are still some families even in this country that either do not have computer or if they do have not access to the internet until they get to school or library therefore teachers have to take this into consideration when assigning project beyond classrooms.
- Impatient students: fast paced game and fast network has created a generation without patience and thus makes it hard for teacher to hold student attention for too long.
- Munoz (2002) points out the disparities in our society and how introduction and use of technology in schools could cause more divide and the teachers and learners. He emphasized that the most effective ways to effectively use technology in the classroom is to prepare teachers for the use of technology in K-12 and ensure they are prepared to use technology in innovative and effective ways to authentically present multicultural education to their students.
- The emerging positive outcomes are balanced against the stress faculty face in trying to develop online learning environments for students with widely different backgrounds and readiness levels and also their continuing reluctance to use technology to enrich their classroom teaching.

Recommendation

Teacher training is very important and since the government has vested interest it cannot be ignored. According to the National Assessment of Educational Progress (NAEP, 2009), "Science is a priority under the No Child Left Behind Act (NCLB). Under the provisions of the Act, states receiving Title 1 funding must develop academic content standards in science by 2005-06 and implement aligned assessments based on those standards by 2007-2008" (p.4), but their findings showed that only 10% of fourth and eighth graders were in a class where the teachers actually use technology to enhance teaching in their classroom at least once a week making it impossible to teach the students.

"We need to set up networks whereby teachers and researchers may work together to design and evaluate projects which use ICT as a tool for learning. If these resources are made available, teachers will start to embed ICT into classroom practices," emphasized Professor Sutherland (Postholm, 2007).

Conclusion

There is a need to understand if technology in classrooms does improve student achievement or not. Use of technology in the classroom, depending on how and the extent to which it is used draws on a little bit of many educational theory.

One of the theories I noticed first is the observational learning theory or the social theory. These theorists believe that an observer's behavior will change after viewing the behavior of others. In today's technology the students learn all kinds of technology just by watching their peers. Technology in the classroom definitely continues what the students already know and use at home already.

Another is the behavioral learning theory of BF Skinner based on the methods of branching: dividing into small units which is made possible with technology in the classrooms.

The idea to fully implement technology in the classroom permeates the core of teaching and test established ideas of educational theorists who advocate human interaction as critical to learning, even though this idea have proven to be false by the introduction of new interactive media forms (Munoz, 2002).

Discrepancies in low income public schools regarding the quality of technological equipment provided, the needed support for teachers training on new equipment and the provision of appropriate maintenance for available equipment.

In conclusion, technology is a great tool for teaching and learning if used appropriately, technology should not just be dropped at schools expecting teachers to use it. The Federal body that provides them should provide educationally appropriate equipment and professional training needed to use these tools correctly. It is impossible to introduce or advocate the use of technology in the classroom without teacher involvement, thus there should be appropriate professional development and a progressive introduction of technology into the classroom such that educators, school administrators and the community is not intimidated (Goddard, 2002).

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