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# Technology in Today's Classroom: Are You a Tech-Savvy Teacher?

STEPHANIE DIAMOND HICKS

**Abstract:** Technology has changed the way the world functions on a day-to-day basis, but what about education? Education has been directly affected by the increase of technology in the United States. This change has not been well accepted by some members of the educational community, thus leaving the realm of education behind in the technology era. This article seeks to focus on the benefits of technology in the classroom as well as some of the issues that surround teachers and technology. The article also delves into the future of technology and education and provides some helpful tips for technology use in the classroom.

**Keywords:** technology, teacher resistance to technology, professional development, teacher education

When most of today's educators were in school, technology was not available like it is now. Schools did not have the Internet, e-mail, smart boards, or any technological tools to enhance the learning experience. Letters were sent by what we now call "snail mail," and students worked on typewriters to prepare documents. In today's classroom technology abounds and students are extremely tech savvy. Even the youngest children are able to manipulate technology in and out of the classroom. Technology has also presented challenges in the classroom, especially in the area of teachers' technology proficiency levels and their abilities to successfully apply technology. The school setting has undergone drastic reformation in a very short period of time because of the advancements in technology that we enjoy today, and with this change comes an alteration in the job description of teachers. The new job requirement—one must be tech savvy.

In today's educational system technology is inevitable. Technology ultimately boasts many benefits when used in the classroom and can enrich the learning

experiences of students. According to the National Education Technology Standards, "Teachers [are to] exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society" (International Society for Technology in Education 2008). Therefore, teachers must strive to embrace technology and the benefits that it has to offer so that they can meet the needs of digital native learners. According to research, it is estimated that the learning curve on technology doubles every 18 months; thus, it is essential that teachers remain lifelong learners in the area of technology (Reed-Swale 2009). Unlike other fads that have come and gone in the educational arena, technology is here to stay and it is probable that the use of technology in schools will dramatically increase over time.

## Twenty-first-century Students

Today's students are unlike any the educational system has ever experienced. Members of this generation are most often referred to as "digital natives" or the "Net generation" because they have been immersed in technology since birth. They are expert computer gamers, whizzes on Facebook and Twitter, and most can text more words per minute than they can type. A national report by the Kaiser Family Foundation noted that students between the age of 8 and 18 spend an average of 7 hours and 38 minutes per day engaged in entertainment media (Dessoiff 2010). The saturation of technology in students' lives has produced an entirely different type of student, shaping the way they think, learn, and experience the world around them.

## Teacher Resistance

Despite the advantages that technology offers, many teachers are still resistant to technology use in the classroom. The past two decades have experienced an exponential increase in the available amount of

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technology, as well as the frequency of technology use in the classroom. Classroom expectations and educational standards have also changed because of the integration of technology in the classroom, resulting in technology becoming a classroom necessity rather than a luxury. This change has been hard for some teachers to accept, which unfortunately produces teacher resistance to technology use in the classroom.

There are multiple reasons that teachers resist technology. The most prevalent reason is that they fear they will “look stupid” in front of their tech-savvy students because of their inability to effectively utilize technology in the classroom (O’Hanlon 2009). This produces feelings of inadequacy, causing teachers to feel insecure and intimidated by technology use. Most teachers recognize the importance of maintaining a level of professionalism within the classroom, and having obvious limited abilities concerning the use of technology could possibly render them “unprofessional” in front of their students. Teacher resistance to technology can also be caused by a lack of professional development regarding the use of technology as well as technical support for troubleshooting problems (Stein, Ginns, and McDonald 2007). Teachers who are properly trained to use the technology and have adequate technical support are much more likely to integrate technology into everyday lessons within the classroom than teachers who do not have this kind of support. Another possible reason teachers resist technology is because they do not feel that the benefit (student achievement) outweighs the cost (time needed to learn and integrate the technology), or they do not see a true need for what the technology offers (Terrell, Dringus, and Rendulic 1995).

### Benefits of Technology

The influx of technology has produced many positive effects for students both in and out of the classroom. Because technology provides instantaneous gratification for the user, digital natives often appear to have shorter attention spans. The exact opposite is actually true. Research done by *Sesame Street* regarding the amount of time and attention children spend watching TV found that children who seem to be inattentive and distracted during activities are often “soaking up” just as much information as those who appear completely engaged. In one experiment, a group of 5-year-old children were shown a television program. Half of the children were shown the program in a room filled with toys, while the other half watched the program in a room free from distraction.

As expected, the group with toys was distracted and watched the show only about 47 percent of the time as opposed to 87 percent in the group without toys. But when the children were tested for how much of the show they remembered and understood, the scores were exactly the same. [One of the researchers, psychologist Eliz-

abeth Lorch of Amherst College stated] “We were led to the conclusion that the 5-year-olds in the toys group were attending quite strategically, distributing their attention between toy play and viewing so that they looked at what was for them the most informative part of the program. The strategy was so effective that the children could gain no more from increased attention.” (Gladwell 2002)

This strategy allowed the children to attend to other matters, such as playing with toys while also efficiently watching television. The same concept applies in the traditional classroom. Digital natives are by practice multitaskers, often attending to multiple enjoyable activities *while* doing “serious work.”

The prevalence of technology in everyday life has shifted students toward a more visual learning style. Students, in turn, may not respond as well to traditional teaching methods that focus mainly on lecture and textbook reading. Prensky (2001) notes that “Digital Natives accustomed to the twitch-speed, multitasking, random-access, graphics-first, active, connected, fun, fantasy, quick-payoff world of their video games, MTV, and Internet are *bored* by most of today’s education, well meaning as it may be.” The integration of technology into the classroom setting allows teachers the benefit of connecting with students digitally by providing rich learning experiences with which students can relate. Thus, technology in the classroom is a must-have attention keeper and ultimately meets the needs of digital natives.

Technology has been proven to aid in learning when integrated into the curriculum in a meaningful way (Keengwe and Onchwari 2009). According to brain-based research conducted by the Semel Institute for Neuroscience and Human Behavior at the University of California, Los Angeles, “the brains of digital natives were more actively engaged while navigating a webpage, as opposed to reading a book” (Herther 2009). This research indicates that the environmental influence provided by technology has prompted the brain to be more receptive to technology-based delivery methods of information. The latest research in neurobiology indicates that “stimulations of various kinds actually changes brain structures and affects the way people think” (Prensky 2001). Thus, consistent technology use rewires the brain to respond more efficiently to technology. This information is instrumental in understanding the influence technology has on student learning and achievement.

Technology has truly changed the educational experience for students with disabilities. New technology has allowed students with special needs to make miraculous gains that would not otherwise have been possible (Hopkins 2006). In many cases, a student’s digital ability does not directly reflect his or her intelligence regarding core subject areas. Because of this, teachers may be able to use technology to help students with

special needs progress academically. Also, technology has provided students with severe disabilities many rehabilitative tools that aid them in gaining cognitive and physical skills and abilities. Students with disabilities often rely on technology to function in everyday life.

Technology is also beneficial to teachers. Once mastered, technology can save teachers enormous amounts of time. For example, entering grades into an electronic grade book is much faster and more efficient than manually entering and averaging grades. Planning and record keeping tasks also require less space and are more easily accessible when done electronically. Web- and computer-based programs are on the rise in school systems across the country. Although it takes time to learn the basics of any program, most are worth the inconvenience and will save time and money in the long run. Technology also provides many other benefits, including a reduction in workload requirements, efficiency in job performance, and the ability to interactively involve students in the lesson.

If used purposefully, technology integration can have a dramatic effect on the quality of teacher instruction. Technology integration should not be something that is done haphazardly so that teachers can meet minimum technology requirements in the classroom. Rather, technology integration should be meaningful—it should have a specific purpose with measurable goals to achieve the desired outcome. Successful technology integration often requires additional planning, but can be extremely rewarding for teachers and students. An example of student success related to quality teacher instruction using technology integration can be seen in the Virginia educational system. Virginia recently implemented a statewide technology program in which schools received two extra technology personnel for every 1,000 students (Coffman 2009). The overarching goal of the program was to improve student achievement through the integration of technology into daily instruction. Results indicated a statewide increase in standardized test scores for the state of Virginia. According to the research, the key to the success of the program was providing teachers with adequate training and support for the technology they used in their classroom (Coffman 2009).

### **A New Kind of Teacher**

By popular demand, a new kind of teacher is on the rise in today's teaching economy. We are beginning to experience the first part of the generation of digital natives come through teacher preparation programs. In the next 20 years, the educational system will see a drastic increase in the amount of technology used in the classroom, as well as a change in teachers' attitudes toward technology and ability to successfully integrate and troubleshoot technology. This new generation will

inevitably change the way education is carried out in American public schools.

As baby boomer teachers retire and are replaced by new teachers, technology use will become more prevalent as well as more instrumental in the educational system. Many of the factors that have previously led to teacher resistance will be nearly nonexistent because of the shift in cultural norms and practices that have affected this generation of teachers. The shift in attitude will enable the educational system to provide digital natives with an educational learning experience that is truly rich with purposeful technology use.

### **Conclusion**

Technology is definitely the wave of the twenty-first century. Throughout the past couple of decades the use and development of technology has increased exponentially, and the area of education has been no exception to the technology boom. It is imperative that we as teachers be supportive of new technology and work to integrate meaningful technology into the curriculum. Because of the conditioning that technology has provided to students of this generation and the benefits that technology boasts, it is in the best interest of both the student and the teacher to incorporate technology in the classroom as often as possible. Thankfully, some technological resources have already been integrated into classrooms around the country, and when used properly, these devices make teaching and learning more enjoyable and also provide educational benefits to students. However, we must not stop here. It is our job as teachers to prepare students to be successful adults. The world is ultimately embracing technology. Therefore, it is our duty to challenge the minds of our young people and strive to provide them with a quality educational experience that will benefit them now as well as later in life. Technology directly affects every aspect of life, and nearly every job option available to Americans today requires the use of some type of technology. Thus, it is imperative that we use technology in the classroom, as the ultimate success of our students depends on this fact.

### **Ask the Experts**

Although technology can be very beneficial to both teachers and students in the classroom, successful technology integration can also be a challenge for many teachers. As both a technology teacher and the technology support person at my school, I would like to leave you with some helpful technology tips that may be beneficial to you in your own classroom.

**If all else fails—restart it!** Many times a simple rebooting of a computer or technological device will remedy the problems that the device is having.

**Ask a student for help.** Students today are very tech savvy, most knowing more than their teachers

regarding technology. This generation is made up of gamers, MySpace junkies, and Internet specialists. These students can bypass servers through proxy servers, and, believe it or not, most would be willing to help you with your technology challenges. They enjoy the work, and it makes them feel like they are needed. I have also found that students with behavior problems do well at this job, and usually their classroom behavior improves due to trust factors.

**Before you call for help, be sure that everything is plugged in!** The number-one technology complaint that I receive is connection problems. More times than not, a student has unplugged a cord. This is true from kindergarten all the way through grade 12. So, before you call tech support, be sure that everything is plugged in.

**Be patient.** Please note that most technology repair people are overworked and underpaid. Some must keep the school's technology running on top of working a regular teaching job. It is very important that teachers realize these limitations and work patiently with technology personnel.

**Learn as much as you can.** The more you can do yourself, the more confident you will be in using and working with technology. Technology is an asset to any classroom, and a tech-savvy teacher can accomplish more using technology than others can without using it. Always remember that practice

makes perfect. The more you use technology, the better you will be at using it and the more you will enjoy it.

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