Electronic Education

Is the technology that is used in the classroom effective?

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Classroom Technology

Technology used in the classroom does not always improve education. Classroom technologies, electronic devices that are used interactively with students, are increasing in schools. There is a clear, growing trend that technology is needed and that more is beneficial. However, research shows that not all technology is enhancing education. Although many believe that technology in the classroom is improving education, it can have severe disadvantages.

Perceptions Concerning the Use of Technology in School

Technology Currently in Schools

Technology is changing the way students learn and with change comes controversy. Many people argue that technology is desperately needed in schools. According to a Macinstrut author, technology is "becoming the foundation upon which nearly everything is being built" (Thacker). Others, like New York Times reporter Mendels, however, say that technology needs to be held off in school until students are older so they can understand the technology better (Mendels). Still, most agree that technology can revolutionize education because "the concept of 'what you know' is being changed from what you have stored in your memory to what information you have access to and what you can do with that information" (Thacker).

A significant challenge that schools face with regards to technology is that technological products are seldom developed specifically for classroom applications. Most new technology "goes to the military, private sector, higher education, and finally public education, in that order" (Thacker). Consequently, by the time many teachers figure out how to use the newest technology in their classes, what seems new to a teacher is old school to their students.

Moreover, many teachers are intimidated by technology. Products and applications, such as computers, the Internet, e-books, smart boards, online social networks, smartphones, clickers, and netbook tablets, that most students consider part of everyday life, are relatively new to many teachers. It is challenging for established teachers to learn and keep up with the rapidly changing technologies that students take for granted. Not only do teachers need to learn the technologies, they also have to figure out how to integrate them into their regular teaching patterns. This process is time consuming and burdensome for teachers.

The first step in this procedure is to acquire and learn the new technology. Then, teachers must determine if or how the new technology can be used to enhance their traditional teaching style. Here, they often focus on "increased student productivity and engagement by using word processors, spread-sheets, and graphics tools" (Thacker). Next, teachers "focus on cooperative, project-based, and interdisciplinary work – incorporating the technology as needed and as one of many tools" (Thacker). The final step is to discover new uses for technology tools; for example, "developing spreadsheet macros for teaching algebra or designing products that combine multiple technologies" (Thacker). This is a long and tedious procedure that can occupy so much of a teacher's time and energy that, instead of enhancing education, actually detracts from the learning process (Thacker).

Advantages of Technology

There are many advantages to the new technologies showing up in education. Information is readily available and easy to access. It is essentially obsolete to go to a physical library anymore. E-how.com writer Hollowell says "the information on the Internet is there for all who have access, without discrimination" (Hollowell). It is important to learn how to use technology because "there are very few jobs that our students will be encountering which do not

include technology in some way" (Thacker). Also, technology can vastly improve education if it is used correctly. Author Bonk writes that "it is the opening up of education that ultimately makes a flatter or more robust economic world possible" (Bonk 8). To sum it all up, "anyone can now learn anything from anyone at anytime" (Bonk 7).

Disadvantage of Technology

However, technology does have some drawbacks. With student computers and other technologies in the classroom, students lose "communication skills and interactive abilities between student and teacher, and students to peers" (Hollowell). Classroom technologies can also be distracting to students. With computers in class that allow access to the Internet, students may be posting on Facebook, watching videos, or playing games instead of paying attention to the teacher. Plus, poor children without access to computers and who go to a poor school "may not be exposed to computers and other technology because of socio-economic status" (Hollowell). Furthermore, technology is ever changing. "It may make little sense to teach children skills that will be outmoded by the time they reach working age" (Mendels). Overall, "ultimately, the quality of the class will depend solely on the quality of the teacher and not on the presence of technology" (Hollowell).

A Recent Twist to Technology

New Data

Technology use is evident and growing in schools. In many schools, the average classroom has a smart board and a projector. In a survey, conducted by Nika Fendler in November of 2010, of Walker Middle School students in Marietta, GA, 40% of the 30 respondents said that four of their classes have a smart board and 34.5% of the 30 respondents said that 7 or more of their classes have an LCD projector (Fendler, "Walker MS Tech Survey").

Colleges are also integrating technology into the learning process. In a survey of Georgia State University (GSU) students by Nika Fendler in November of 2010, 60.9% of the 87 respondents say that they have a class that is completely online (Fendler, "GSU Tech Survey").

However, it is not so clear that technology is helping the education process. Middle School classrooms may have smart boards and projectors, but that does not mean the teachers use them. In the same survey of Walker Middle School students, the highest percentage of responses, 34.5%, said that only one or two of their classes use a smart board for more than just displaying information and 24.1% of the respondents said that only one class uses the LCD projector to display information (Fendler, "Walker MS Tech Survey"). Perhaps technology is not as effective as everyone seems to think.

On the other hand, students may think that technology is helpful, but that it is not used as frequently and effectively as hoped for. Only 10% of the respondents agreed with the statement that a student does not feel involved when a classroom does not have a smart board (Fendler, "Walker MS Tech Survey). The rest of the respondents feel that a smart board helps them feel involved in the learning process. Furthermore, 43.3% of the respondents feel that an LCD projector helps them visualize the information better (Fendler, "Walker MS Tech Survey). In a survey of GSU students, 47.1% of the students agreed, and another 33.3% were neutral, with the statement: "I learn better in a classroom because I can connect with the instructor" (Fendler, "GSU Tech Survey"). Nonetheless, in the same survey, 69.0% of the respondents said that they wish the college offered more 100% online courses (Fendler, "GSU Tech Survey). Thus, even though nearly half of the students surveyed said that they learned more in a traditional class because in that setting they can better interact with the instructor, almost 70% say that they would prefer to have more online classes, where interaction with the instructor is restricted.

Limitations of Information

Unfortunately, these surveys have limitations and the results could be biased. In one survey, 80% of the 30 respondents were female; 70% of the respondents were in the 8th grade; and 60% of the respondents were 13 years old (Fendler, "Walker MS Tech Survey). In the other survey, 63% of the 87 respondents were female and 72% of the respondents were in the age range of 20-25 (Fendler, "GSU Tech Survey"). Participation in the Middle School survey was completely voluntary and participation in the University survey was rewarded with bonus points added to an exam score. These respondents could have entered random or casual answers to get through the survey as fast as possible to get the bonus points. In addition, the number of respondents in each survey is fairly small. Finally, all of the surveys' respondents were Georgia students. Students from different states or from different schools could have a different view of technology.

Extended Research

To extend research in the future, an interview would provide more direct and professional data. Dr. Richard Fendler, a professor of finance at Georgia State University, would be an ideal candidate because he teaches both online and traditional classes. He also conducts professional research in the area of online teaching and learning. It would be helpful to have a teacher's perspective on the effectiveness of technology used in the classroom.

Circumspection

We live in a world that is filled with technology and technological advances are occurring at a rapid pace. Many believe that technology, in spite of its disadvantages, can be used to

improve education. At the very least, students must be taught how to use these tools for learning purposes because they almost certainly will use technology when they get a job.

Technology based products and applications have the ability to better engage students in the learning process. However, they can also be a source of distraction and some technologies, such as those that allow classes to be taken online, reduce student interaction with teachers and with fellow students. These interactions are an important aspect of overall learning and human development. In addition, finding and properly integrating technology into the classroom is time consuming, difficult and wearisome for many teachers, especially those who have been teaching in a traditional manner for many decades.

The current state of technology in the classroom is unclear and the future is uncertain. Nonetheless, technology does provide a means to improve student outcomes. Established teachers need more training and better applications need to be developed that are specific to education. Perhaps a new generation of teachers who grew up with technology will be better able to develop and integrate new technological processes into teaching and learning. Otherwise, the full potential of technology as a means to enhance education will never be realized.

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