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The Power of Technology in Education

In today’s society, technology has become a very important aspect of our everyday lives. Every day, billions of people use their cell phones to browse the Internet, send text messages, and make phone calls. However, in the recent years technology has made a huge breakthrough in the education system. Many schools have introduced the use of ipads, lap tops, smart boards, online learning platforms, and other forms of technology into the classroom. The use of this technology in classrooms has affected the way that students learn and the way teachers teach. These new ways of teaching and learning have raised a lot of concern from parents, students, and also teachers. There are a mix of opinions regarding this subject. Some people believe that this new use of technology helps students and enhances the learning experience, but on the other hand some people believe that this new use of technology in the classroom is detrimental to student’s learning. The use of technology has had a positive impact on education and the learning experience. As a student, I believe that the use of technology has positively impacted the education I have received since it was introduced to me.

One of the main benefits of the use of technology in the classroom is that it has been proven to increase cognition, in all subjects. One type of technology that has particularly proven this is the use of iclickers. This is demonstrated in a study discussed in an article called "A Meta-Analysis Of The Effects Of Audience Response Systems"
(Clicker-Based Technologies) On Cognition And Affect.” This article states, “In this meta-analysis, positive effect sizes indicate an advantage associated with using clicker-based technology. Collapsing across all 86 studies on cognitive outcomes, results in Table 2 showed a small but statistically significant effect size…” (Hunsu, 3.1) This study proved then when students use clicker technology in classrooms they are able to better receive the information that is being taught and understand it. If more clicker technology is implemented into classrooms, then students will receive the benefits of better cognition.

Another not so obvious benefit of the use of technology in classrooms is the motivation and enjoyment that students get from the use of it, which in turn can help to increase grades. When students have a positive attitude and are enthusiastic about what they are learning, then they will be more motivated to complete assignments and learn new material and also get better grades. This is illustrated in an animated picture published by communicationstudies.com. The picture depicts the image that 77% of teachers notice an increase in student motivation when technology is used in the classroom. (Components) This shows that when students are able to use technology in order to engage in instruction and complete homework assignments they are more motivated to do so because the use of technology is more interesting to students than the traditional learning environment. Elizabeth Schmitz, Carolyn Prescott, and Leslie Hunt further explain this idea of technology motivating students in Learning Technology: The Effective Use of Technology in Education. Their book states that, “Learning through technology is far more exciting than traditional lecture and practice modes. Educational technology reaches students through a variety of senses, keeping them alert and interested
in classroom activities.” (Schmitz, Prescott, & Hunt, 4) This shows that the use of technology positively affects students learning because when they are able to use devices that they are familiar with and enjoy using in order to learn, then they are more inclined to do better in their classes. Everyday teachers worry about their students being motivated and engaged with the lesson plans, but with the simple use of computer based learning they would see a very big difference.

Although technology is beneficial to the learning process in general, there are also economical benefits to the use of technology in the classroom. A common obstacle that many students across the country face is the very high cost of textbooks each semester, but technology can remedy this problem. In general, online textbooks are cheaper than hard cover textbooks that can be brought in bookstores or rented online. When students are able to use technology such as laptops and ipads or tablets in class, then they will be able to have access to textbooks at a cheaper price. In Eugene Geist’s article The Game Changer: Using Ipads In College Teacher Education Classes he discusses how students felt that the use of technology benefited them in the classroom. He states, “The student participants also supported this contention that using iBooks and electronic versions of the of the books. Here are what they had to say about its usage in the classroom. Many students purchased electronic copies of their required books… Students reported that they saved money and that the e-book was easier to carry and access.” (Geist, 765) This clearly demonstrates the benefit of cost efficiency for students through the use of technology. If more teachers and professors decide to implement technology into their classrooms, because of the economic benefit, then this could also help to boost overall grades. Often times, especially at the college level many students don’t purchase the
required texts because of the high costs and this can cause students to miss assignments and not be able to study properly for exams because they don’t have textbooks. With the use of technology the cost of college all together could decrease because of the decrease in textbook costs.

In addition to the economic benefits of technology in the classroom, also the implementation of technology can cause students to do better on standardized tests. Through the use of technology based learning systems students are able to work at their own pace in order to comprehend material and also are able to learn in a much more interactive way. In Susan O'Hara and Robert Pritchard’s article for Education.com they discuss this idea in great depth. The article discusses a study that was conducted in 1999 and states, “Teachers using the West Virginia Basic Skills/Computer Education (BS/CE) program found that all their fifth graders’ test scores rose on standardized tests, with the lower achieving student scores rising the most.” (Pritchard) This demonstrates that even students who usually receive lower scores saw an increase in their scores. This benefit could be especially useful in lower income schools where they are often lacking the best teachers. Lower income schools could fight for the funds for this technology from their city education funding while clearly outlining all of the benefits that the technology would bring to the students. The use of technology in a situation like that could drastically help students when it comes to receiving the opportunity of higher levels of education.

Although there are many proven benefits of the use of technology in the education system, there are also some people who believe that the implementation of technology can be detrimental to student’s learning processes. Many teachers and educators believe
that technology can serve as a distraction and cause a decrease in grades. This idea can be seen in a study conducted by Chu Hui-Chun. In this study he tested two groups of students using a reading comprehension test. In the control group students were given the test the traditional way using paper and pencil, while the treatment group took the test on a computer. The conclusion of the experiment stated, “This surprising and interesting result indicated that the formative-assessment learning strategy for mobile learning had an unfavorable effect on the learning achievements of the students in comparison with that for the traditional approach. Moreover, the finding is quite different from those reported by other researchers who have applied the formative assessment strategy to web-based learning…” (Hui-Chun, 339-340) This study proved that the use of technology did in fact have a negative effect on student’s learning. This finding is very contradictory to the results that most would expect. Although this does in fact show a negative effect of technology, there are other aspects that must be considered before you draw this conclusion. One issue that must be taken into account is how closely teachers monitor the technology. If teachers aren’t watching their students closely, then the purpose of using the technology is defeated. Even though this source shows a negative effect this does not prove that this is the case with all students.

Not only does technology benefit students in the classroom, it also is very beneficial to teachers. With the use of technology teachers are provided with more data about student progress and grades. With the use of technology teachers are able to keep track of how fast students are completing assignments, and they are able to see what skills need to be worked on more in the classroom based on online activities. An animated picture published by communicationstudies.com illustrates that, “Learning
analytics help teachers assess top concerns and achievements related to their students.” (communicationstudies.com, Components of a 21st Century Classroom) This picture shows that not only do the students benefit from technology, but technology makes it a lot easier for teachers to alter their lesson plans in order to cater to student’s needs because it provides them with more data to analyze. This idea is also demonstrated in a TED talk Blending Technology and Classroom Learning when the speaker, Professor Jessie Woolley-Wilson discusses how teachers are able to closely monitor student progress when utilizing a “blended classroom.” During her discussion she tells a story about a teacher in California who had to find a way to effectively teach her growing class of students and cater to all of their individual learning needs. She discusses that her first step toward this goal was implementing a computer based learning program into her classroom. As a result of this, she was able to help accelerate her student’s learning by monitoring their individual progress and altering lesson plans accordingly. This is a prime example of technology not only benefiting students, but also teachers in the classroom. Without the use of technology, teachers across the country would struggle with knowing areas that students need more work on and altering their teaching in order to encompass those things. The use of technology ultimately makes teachers’ lives much easier because it acts as an extra resource that they can use to better their own teaching methods.

Furthermore, the use of technology in classrooms also increases retention when used correctly. When students have access to technology in a learning environment they are able to become more engaged and interact with lessons whether it’s taking additional notes alongside a powerpoint, looking up additional information related to the topic being discussed, or completing practice problems in relation to the concept being taught. When
students are able to interact with lessons through technology they are more likely to be able to remember information over an extended period of time. This concept is illustrated through an article by Don MacMillan when he discusses the concept of web-based worksheets. A web-based worksheet is an interactive online presentation that students can comment and take notes on using their laptops or tablets. MacMillan states:

Students can either use their print copy of the worksheet, with the annotations they have made, or the Web copy with live links, or both in combination. Using an HTML-based worksheet ensures that they have easier access to the material and links, regardless of the computer they are working on—not all Internet cafés or off-campus computers have the latest version of PowerPoint loaded on the machines. Being able to work with the same tool that was used in the class is also likely to improve student recall of concepts and techniques. (MacMillan, 46)

This demonstrates that through the use of technology students are able to more effectively retain information because they are able to go back and study information provided to them as many times as they feel necessary. Without this use of technology students would be forced to try to keep up with taking hand written notes word for word from a lecture instead of actually listening to what is being taught, which can cause minimal understanding of course material and below average exam scores. In this case, the absence of technology for students could be very detrimental to student’s future lives when it comes to receiving good grades in order to get a good job.

Not only is the use of technology beneficial for students learning in a traditional classroom, it is also very beneficial for students in special education classrooms. The use of technology can increase student’s understanding in all subjects and help to improve
learning speed and comprehension in remedial students. This can be seen in an experiment conducted by an educator named Cecile Foshee. In her experiment she took a group of remedial math students who couldn’t test into a college math class and began having them use an online math program called TEL. This program allowed the students to do practice problems at their own pace and go back and review important concepts with examples. After 10 weeks of using the computer program she found that the students who couldn’t test into the college level math classes now could. (Foshee) This goes to show that without the use of technology in schools, then many students would be left behind and unable to accomplish their goals because they don’t have access to the tools necessary to preform and learn to their fullest potential. This study speaks volumes for the possibilities for special education and remedial classrooms across the nation. With the simple implementation of technology millions of students who are labeled as special education or remedial could have a chance to test into normal classes and learn along more of their fellow classmates.

In order for technology to have all of this positive benefits discussed in this paper, the key point is that it must be implemented properly. Without proper implementation and monitoring by teachers, then students will not be able to receive all of the benefits that they should while using technology in the classroom. This is discussed in Garner and Raacke in their article, *Influence of University Level Direct Instruction on Educators’ Use of Technology in the Classroom*. In this article the authors discuss how technology should be properly implemented in order to have positive effects. The article states, “Thus, the current research indicates almost without exception that when technology is properly integrated, and implemented consistently, it can enhance educational experiences.
However, there is also research to suggest that even in instances where technology is present in the classroom, it is not being effectively utilized…” (Garner & Raacke, 146) This demonstrates that even classrooms that have technology may not be maximizing its use because the teachers don’t know how to properly integrate it into their lesson plans. The article also provides specific steps that should be taken in order to make sure that teachers are properly using technology in their classrooms. These steps are familiarization, utilization, integration, reorientation, and evolution. (Garner, 146) These steps are crucial to making sure that students are able to gain everything that they can by using technology in the classroom. Without these steps being taken, then the use of technology has the potential to become detrimental to the learning experience and cause students to fall behind.

Based on the research above, you can conclude that the use of technology has numerous positive benefits to both students and teachers. These benefits include, but are not limited to increased cognition, increased motivation of students, economic benefits, increased scores on standardized tests, increase in data for teachers, increase in retention, and increase in remedial classroom performance. All of these benefits together have the potential to push education to a new level. Students will be able to receive a better education and in turn become more intelligent all together in the years to come if more schools implement technology in all classrooms across the country. If these strides are made, then the United States will be equipped with a more technology savvy and intelligent youth, which can lead to innovation and high levels of intelligence across the country.
Works Cited

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