



THE ROLE OF TECHNOLOGY IN EDUCATION AND BENEFITS & PROBLEMS IN ONLINE TEACHING

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ABSTRACT:

This paper elucidates and mainly focuses on educational / teaching sector, the vital role of Technology in Education and benefits and problems faced by both teachers and students especially during this pandemic period. The modern classroom has taken several steps forward in its evolution of the learning environment in the past 25 years. Many of the benefits that have seen in this setting are due to the introduction of new technology options for students. Our development of the Internet since 1989 has helped us to include more technological access to information in the modern classroom as well. Now students get to play interactive learning games, compete against other students, and have their educational statistics tracked in real-time data to know where their point of focus should be. Introducing technology to students in a classroom setting can certainly help the educational environment, but it also requires equal access for all students to ensure that everyone receives the same opportunities to success. That is why each school district, teacher, and parent should periodically review the problems and benefits of technology in teaching sector.

KEYWORDS: Education, Teachers, Students, Technology, Online classes, virtual mode learning, benefits, problems, environment, Improvement.

INTRODUCTION:

THE ROLE OF TECHNOLOGY IN EDUCATION

The role of technology, in a traditional school setting, is to facilitate, through increased efficiency and effectiveness, the education of knowledge and skills. In order to fully examine this thesis, we must first define several terms. Efficiency will be defined as the quickness by which we obtain knowledge, while the term effectiveness is associated with the amount of imparted knowledge that is operationally mastered. When technology is directly applied to an educational setting, such as a school, both the students and teachers can be viewed as learners. Thus, we can operate under the assumption that any increase in teacher knowledge and utilization has the impact of increased learning in students. Ultimately, technology should serve to increase

student achievement in schools. Technology can aid in educational achievement through two primary methods: the removal of physical barriers to learning and the transition of focus from the retention of knowledge to its utilization. Each of these methods must be examined in the context of their relation to both the student and the instructor in order to see their value and effect in educational settings. The removal of physical barriers has allowed teachers greater accessibility in regards to professional development and graduate education. Before the age of the internet and the advent of distance learning, engaging in a learning community, such as a workplace network or a school, required a close degree of



physical proximity amongst community members. Presently, there are multiple examples of the use of distributed learning technology in the educational field. First, many graduate schools have begun transitioning into programs that allow for distance education.

LIST OF THE BENEFITS OF TECHNOLOGY IN TEACHING

1. TECHNOLOGY HELPS CHILDREN TO STAY MOTIVATED DURING THE LEARNING PROCESS.

Most students don't like to go to school if they feel like they are wasting their time. When there is technology allowed in the classroom, then teachers have an opportunity to let kids work at a pace which suits them the best without disturbing others. They can look up additional information about a subject they are learning about that day, play educational games that reinforce the lesson, or work on advanced material using a program like Zearn.

Because many of today's technology options allow students to see how well they are doing compared to the average of all users, it gives them a chance to push harder for themselves and their education. Many of the programs that encourage learning also issue rewards or award certificates, which helps to make the lessons fun as well.

2. IT ENCOURAGES MORE COMMUNICATION BETWEEN TEACHERS AND PARENTS.

When there is technology in the classroom, then there are more opportunities for parents and teachers to connect with each other. Using a blog for the classroom can help parents get to see what their children are learning each day. Apps and software options allow teachers to instantly report on a child's behavior to let parents know in real-time what is happening throughout the day. There are options for chat boxes, instant messaging, and other forms of communication as well.

Let's not forget about email here either. Since the 1990s when this technology option came into the classroom, it created more reliability in messaging between teachers and parents should there be a need to talk.

3. TECHNOLOGY OPTIONS IN THE CLASSROOM ARE VERY AFFORDABLE.

Although the cost of having technology in the classroom can be significant if you are introducing new options to an entire district, the cost of student computers, tablets, and class essentials is minimal. Most student computers cost less than \$200 each, and there are several grants available on local, state, and national levels that help to offset these costs to local taxpayers.

"The Internet is the first technology since the printing press which could lower the cost of a great education and, in doing so, make the cost-benefit analysis much easier for most students," said John Katzman. "It could allow American schools to serve twice as many students as they do now, and in ways that are both effective and cost-effective."

4. IT CREATES NEW WAYS TO LEARN FOR TODAY'S STUDENT.

There are three critical forms of intelligence that we see in children today: emotional, creative, and instructional. The traditional classroom environment, which typically encourages lecture-based lessons, focuses more on the latter option. Standardized tests and similar ranking tools do the same. When kids have access to technology today, then those who excel outside of the standard learning setup can still achieve their full potential.

Technology allows children to embrace their curiosity in multiple ways. They can try new things without embarrassment because their tech access gives them a level of anonymity. This process allows kids to work, through trial-and error if they wish, to see if a different strategy helps them to learn more effectively.

5. TECHNOLOGY ALLOWS US TO GIVE STUDENTS ACCESS TO DATA FROM A SINGLE LOCATION.

Do you remember when a research project meant a visit to the library so that you could pull 4-5 books to read, have access to an encyclopedia, and even microfilm to view so that you had enough resources to finish your assignment? Technology allows a student to access every item they need for a project from a central resource. Instead of spending all



of that time searching for something specific or waiting for your library to order it, you can run a few queries on Google and find what you need.

6. IT GIVES US BETTER ACCESS TO BEHAVIORAL DATA ON STUDENTS.

The various apps, software choices, and technological platforms collect data on students that can show attendance patterns, learning issues in specific subjects, and how they react in particular situations. This information leads to the creation of a profile where teachers, schools, and parents can work together to identify places where additional learning may be necessary. Technology can even help a school district find their highly capable students to keep pushing them toward more challenging work so that they remain engaged with the learning environment.

7. TECHNOLOGY HELPS TO PREPARE STUDENTS FOR THEIR FUTURE WORLD.

Even if there are warnings from medical providers about the amount of screen time that students receive in their classroom environment, the reality of the modern educational system is that we must have technology exposure now to prepare our children for the world they will face as adults. This sector will continue to evolve. If they are not prepared to use these items today, then tomorrow could be a struggle for them.

That means some traditional subjects might not be as important to teach for some schools or teachers. Is it more important to have a student learn how to write in cursive or know how to type without using the two-finger chicken-pecking method? Is coding more of a critical skill than learning how to cook? Should kids know how to put a chair together in woodshop or have the ability to put together their own computer?

8. THE INTRODUCTION OF TECHNOLOGY ALLOWS FOR THE TEACHING OF NEEDED VOCATIONAL SKILLS.

Although there are regions of extreme poverty and isolation which do not have Internet access in the United States right now, over 90% of Americans have a home connection to online resources. By

introducing technology to students from an early age, we can teach them the critical vocational skills that are necessary for success in a digital world. That is why writing continues to be a top priority in the K-4 grades, formatting guidelines and software use after, and knowing how to research efficiently is approached as an essential skill.

9. TECHNOLOGY IN THE CLASSROOM ENCOURAGES COLLABORATION.

Students retain very little of the information they receive when a teacher lectures from a textbook. When there are interactive lessons on a chalkboard or whiteboard, kids can remember about 20% of what they were taught. If a teacher encourages a small group discussion, that percentage can quadruple.

Technology gives us an easy way to develop collaboration skills for students using online tools that encourage them to work together in safe ways. If kids can then practice what they were taught immediately, there is very little that they will forget.

10. IT ENCOURAGES STUDENTS TO STAY ENGAGED WITH THEIR LEARNING ENVIRONMENT.

Kids get bored very easily when they feel like they already know what is being taught in their classroom. Some children will transform into mentors or leaders in this situation to help their fellow students, but there are many more who disengage because they lack stimulation. By introducing technology to the classroom, there are fewer places where repetitive learning must take place. Teachers can introduce new subjects, try new techniques, or use different projects to encourage ongoing learning, which creates more overall engagement.

11. TEACHERS HAVE MORE CREDIBILITY WHEN THEY USE TECHNOLOGY IN THE CLASSROOM.

Teachers are sometimes hesitant to use technology in the classroom because they are unsure of what a student might have at home. Giving homework assignments that require computer access to a student without that technology at home would be



a waste of time. There can also be pushback from parents who are uncomfortable giving their kids additional screen time for learning. When you can introduce these elements to the classroom and have children learn there, then you can overcome the socioeconomic barriers that are sometimes in place for low-income families.

LIST OF THE PROBLEMS OF TECHNOLOGY IN TEACHING

1. THE PRESENCE OF TECHNOLOGY CAN BE DISTRACTING TO STUDENTS.

When kids play video games, they can find themselves reacting with addiction-like behaviors. Their focus is on the entertainment they receive more than anything else. If the educational environment uses reward-based games to encourage learning, then the child might be more concerned with what they receive through the software or app instead of what they are learning.

Although correct answers can be an indication of knowledge, there might not be as much information retention as hoped. Teachers must set and enforce healthy boundaries when using technology in the classroom to ensure healthy results are possible.

2. TECHNOLOGY CAN MAKE IT EASIER TO CHEAT.

Remember the TV shows and movies where kids would break into a teacher's classroom, steal the answer key to a test, and then write down everything on their wrist, shoe, or a slip of paper? Now a student can send themselves a text with that information. They can send that data to anyone else with a phone. Email can relay this info too. There must also be strict rules in place about the use of technology during quizzes or tests when an exact measurement of student knowledge is needed to evaluate their overall progress.

3. USING TECH CAN CAUSE SOME STUDENTS TO DISCONNECT FROM THE CLASSROOM.

Interacting online with others is a different experience than when you collaborate over the Internet with someone. Being behind a screen provides you with a layer of anonymity that you don't receive with a face-to-face conversation.

Learning how to work with one another using technology is an essential skill, but it cannot be the other option that teachers introduce to their classroom. We must encourage social interactions that accurately communicate thoughts, feelings, or emotions so that when a child is offline, they can still make a better life for themselves.

3. SOME STUDENTS MAY NOT KNOW THE DIFFERENCE BETWEEN RELIABLE AND UNRELIABLE RESOURCES.

There is a lot of information on the Internet today that is fake or exaggerated in some way, but it masquerades as being real. According to research published by New York Magazine, less than 60% of web traffic today is actually human-based searches or content interaction. Up to half of the traffic on YouTube each year are bots that masquerade as people. Not only is the content sometimes fake, but then also the users might not be real too. Teachers must show students how to access real information, show them how to verify its validity, and then encourage them to use it appropriately.

4. TECHNOLOGY IS A RESOURCE THAT NOT ALL FAMILIES CAN AFFORD.

Whether technology is in the classroom or at home, there is the issue of affordability to worry about in today's world. Some households cannot afford to purchase computers for their kids to manage their school work. There are school districts that don't have enough money to pay their salaries each year, much less add new tech components for learning.

When we emphasize having technology in the classroom, then we place those at the lowest end of the wage scale at a significant disadvantage. Students with greater access can learn more and have access to lessons more often, which means they have additional information exposure that can increase their opportunities to succeed.

6. SOME TECHNOLOGIES COULD REPLACE THE TEACHER IN SOME CLASSROOMS.

Interactive learning lessons are so effective today that the software or app can become the teacher instead of having someone present to help a



student. One of the best examples of this potential disadvantage is ABC Mouse, which provides clear instructions to students as young as 3 so that they can start learning when they are ready. Instead of being in a hands-on role, technology makes the teacher more of an observer. New tech automates the learning process while adapting to changing student needs.

6. THERE ARE PRIVACY CONCERNS TO CONSIDER WITH TECHNOLOGY IN THE CLASSROOM.

Over 15 million people each year experience identity theft in some way. It is a criminal empire that costs the economy over \$16 billion per year. Since 2011, over \$100 billion in losses have happened because of this issue. One of the reasons why it is becoming more prevalent is because more people have greater access to technology today.

When we introduce technology to the classroom, we are placing the identity of our children at risk every day. Even when apps, computers, mobile devices, and operating systems have advanced privacy filters that reduce the threat of identity loss, there is no way to guarantee that all risks are gone unless the equipment never goes online. If we take this step, then we end up losing many of the advantages of having technology in the classroom in the first place.

7. TECHNOLOGY IN THE CLASSROOM COULD CREATE MEDICAL PROBLEMS FOR SOME KIDS.

Eye strain occurs when you look at a computer screen for too long. Symptoms of this issue include back pain, eye pain, neck pain, feelings of tiredness, blurred vision, and problems with focus. Continuous heavy computer usage may lead to issues with early myopia, with a prevalence rate of more than 60% for those older than the age of 12. For some people, the impact of this health issue is cumulative, which means the time they spend in front of a phone, tablet, and television can contribute to eye health issues as well.

9. KIDS OFTEN LOSE TRACK OF TIME WHEN USING TECHNOLOGY IN THE CLASSROOM.

Although kids can adapt to changing environments without much of a second thought, their idea of normal is often defined by what they experience in the classroom. Teachers and schools have as much, if not more, time with children than their parents throughout the day, which means the classroom becomes an influential part of life for each student. Encouraging the use of tech might help to create more learning opportunities, but it can also lead to a lifestyle that is more sedentary.

When children sit for too long during the day, then they face the same health challenges that adults do when not getting enough exercise. There can be problems with obesity, hyperactivity, muscle fatigue, sleeping problems, and metabolism issues with prolonged sitting. That is why any school that introduces technology to the classroom should also encourage at least 30 minutes of moderate physical activity whenever possible.

10. MANY CLASSROOMS PLACE LIMITS ON TECHNOLOGY ACCESS.

Because of the awareness that schools have with the potential disadvantages that technology can cause in the classroom, there are limits placed on the use of items under the guise of child protection. Although firewalls and site blockers can prevent most dangerous content from reaching the eyes of children, it is not unusual to see this issue taken a step further by restricting computer work to word processing and basic research. Students come home with assignments to use tech of their own, at a library, or through a loan program to place this responsibility on the parents instead.

If we force limits on children instead of teaching them how to make wise choices, then is that really giving them a learning environment?

11. TECHNOLOGY CAN CREATE DEPENDENCIES FOR INFORMATION RECALL.

If you cannot recall a piece of information instantly, then what is your next step to find an answer? Most people would say that they would look online for the data they want or ask a virtual assistant, like Alexa, to give them the answer. Having access to a treasure-trove of resources is wonderful, but it can



also create a dependency because of its presence. If we do not teach students how to recall info by themselves without the use of a smart device or computer, then the next generation of students may be unable to function unless there is technology for them to access.

CONCLUSION

Overall, technology is central to many sectors of society and its integration into the education process has great promise for student learning. With

technology, one can expect increased efficiency and effectiveness on both the part of teachers and students. Technology can also prompt pedagogical change and address issues that affect learning, teaching and social organization. Technology can therefore be seen as both a tool and a catalyst for change. Students should embrace technology for them to benefit and teachers should be open to introducing technology into the classroom to improve and innovate their teaching practice.



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