The Impact of Technology on Student Learning in the Classroom

*Deepak Kumar

ABSTRACT

Education, like almost every other aspect of life today, has been touched by technology. Technology, on the other hand, has radically altered education in many ways. For one thing, technological advancements have considerably increased educational opportunities. Books were scarce in mediaeval times, and only a select few had access to educational opportunities. Individuals had to travel to educational institutions in order to receive an education. Massive volumes of knowledge (books, music, photos, and videos) are now available at one's fingertips via the Internet, and formal learning opportunities are available globally. Classrooms have traditionally been rather isolated, with collaboration limited to pupils in the same classroom or building.

Today's technology allows kids to share what they're learning with students in other schools throughout the country who are following the same adventure. Classroom walls are no longer a barrier, as technology allows for new ways of learning, communicating, and collaborating. Teachers' and students' responsibilities have begun to shift as a result of technological advancements. Schools and institutions around the country are starting to reimagine learning environments to support this new style of education, encouraging greater contact and small group work while leveraging technology. Technology is a powerful instrument that can help and improve education in a variety of ways, from making it easier for teachers to generate instructional materials to allowing individuals to learn and collaborate in new ways. With the Internet's global reach and the widespread availability of smart gadgets that can connect to it, a new era of anytime, anywhere education is on the horizon. It will be up to instructional designers and educational technologies to take advantage of the technological opportunities to transform education such that effective and efficient education is available to everyone, everywhere.

Keywords: ICT (Information Communication Technology), Student Learning.

INTRODUCTION:

Educational technology, according to the Association for Educational Communications and Technology (AECT), is "the research and ethical practise of enhancing learning and improving performance via the creation, use, and management of appropriate technological processes and resources." It defined instructional technology as "the idea and practise of developing, deploying, managing, and evaluating learning processes and resources." As a result, educational technology encompasses all valid and reliable applied education sciences, such as equipment, as well as processes and procedures derived from scientific research, and may refer to theoretical, algorithmic, or heuristic processes in a given context; it does not always imply physical technology. The process of integrating technology into education in a good way that encourages a more diverse learning environment and a way for students to learn how to use technology in addition to their regular assignments is known as educational technology.

 Educational technology is the use of both physical hardware, software, and educational theoretic to facilitate learning and improving performance by creating, using, and managing appropriate technological processes and resources. It encompasses several domains including learning theory, computer-based training, online learning, and where mobile technologies are used, m-learning. As a result, there are numerous distinct components to explaining educational technology's intellectual and technical development:

Educational technology as the theory and practice of educational approaches to learning.

- Educational technology is defined as technological tools and media, such as huge online courses, that aid in the communication, development, and sharing of information. When individuals use the phrase "EdTech," they usually mean something like this.
- Learning management systems (LMS), such as tools for student and curriculum management, and education management information systems, use educational technology (EMIS).

- Training management systems for logistics and budget administration, as well as the Learning Record Store (LRS) for learning data storage and analysis, are examples of educational technology used in back-office management.
- Educational technology as a subject in and of itself; such courses are also referred to as "Computer Studies" or "Information and Communications Technology (ICT)."

MODERN TECHNOLOGY'S INFLUENCE ON EDUCATION

Modern technology is a powerful learning tool. Personal computing and internet in particular have changed the world. Modern technologies take an important role in our lives. But discussions upon the role of technology in education continue to appear even in the most modern and developed educational institutions. The educational process experiences a tremendous impact due to the proliferation of technology. At the same time, if the introduction of technologies in most areas is mostly approving, the situation in the educational sphere is quite controversial. The point is that the expediency of a high-tech learning process has become the subject of thematic disputes. Modern technologies will benefit the educational process only if they are properly applied.

The effects of modern technology in education

Special needs students

There are numerous mobile applications that enable and facilitate students with special needs to enter the learning environment by providing them with digital education tools. By making knowledge freely accessible, online learning and computer technology activities greatly assist in bridging the gap between regular and impaired students. Special needs students can now engage in other enjoyable activities such as playing thanks to technological advancements.

Global platform

Technology-assisted education has expanded. Many educational institutions now provide online courses that students can attend from anywhere. Students and professors can easily share knowledge through video conferencing and tools such as Skype.

Efficiency

In most educational institutions, the assessment process has been digitalized. Learners can take examinations online and analyze their knowledge base in real time. Online examinations are unbiased and adaptable. Students have the flexibility to take the tests when they are ready, which is especially beneficial for students doing correspondence or distance courses.

Improved interaction

To keep in touch with their students, most teachers today use technological assistance. They can make use of services like Dropbox, which allow them to upload and share content with a large group of people. They can also communicate via email.

Video games

Students' conduct may change as a result of video games that replicate real-life problems. The games provide a vast amount of knowledge and help students become better problem solvers. The games might be addicting, but they can also be a good source of edutainment when played under proper supervision.

E-books

Learners can benefit from e-books and online libraries. Google, for example, has collaborated with libraries and publishers to create an incredible library that is both large and flexible, as well as virtual. Google Books provides snippets of many novels, allowing learners to discover new publishers and books. Readers and publishers can now find each other thanks to the internet.

Addressing learner's diversity

Visual or audio stimulation, online learning modules, and animations are some of the learning tools that appeal to learners with different learning styles. Some people find classroom learning to be tedious and unimaginative. These students are effectively convinced to study using digital tools that provide a perfect blend of learning and entertainment.

Cheating

This is the most significant disadvantage of modern technology in education. Exam cheating has never been easier because to technological advancements. Students are allowed to use calculators during tests, and these calculators contain all of the formulas required to pass the exam, so getting caught is difficult.

Access to a huge informational background

The Internet connects people, thereby it can be used as an effective tool for gaining knowledge. Web users need only to enter specific information they want to find into search engines that will prompt them to millions of search results. There are several informative websites and web directories that offer information on a variety of topics. Students can use the Internet to get all the additional information they need to expand their knowledge base. A great example of an efficient use of World Wide Web for learning is academic assistance, that is currently being delivered worldwide.

In social networks, there are no geographical or political barriers.

Citizens of various countries now share their opinions, thoughts, and converse freely in the virtual world. Any user of this environment can safely share his or her views and queries with

virtual friends, as well as chat about problems that he or she cannot disclose with his family or offline friends. Users of these social networks can, on a bigger scale, express their views on their own government's programmes and policies. For example, the presence of users in the virtual world and demands for battle against tyrannical governments were two factors that encouraged the high level of public and political participation in recent uprisings and revolutions.

The Internet is evolving into one of the most essential sources of information and a very useful communication tool. Anyone can communicate information immediately across computer networks at a distance, as well as for educational, scientific, and management purposes, thanks to the Internet. In the future, all educational institutions will connect their computers in a single network with Internet access. The impact of technology on pupils is undeniable. Learning has become simpler and more accessible to the people of underdeveloped countries. Whatever knowledge you require, you will undoubtedly find it on the Internet.

High degree of visibility

At school, the computer assists teachers in quickly combining a variety of tools that contribute to a deeper and more informed assimilation of the studied subject, reduces lesson time, and allows individual programmes to organize the learning process. Training computer programmes, for example, is an example of how technology is used in education. They enable the illustration of the most significant concepts of things at a level that provides qualitative advantages over traditional learning methods. They are based on a significant increase in visibility, activation of cognitive activity of the student, a combination of mechanisms of verbal-logical and imaginative thinking. Traditional requirements for teaching knowledge (remember, be able to reproduce) are gradually transformed into requirements for basic information skills such as knowledge search (be able to find and solve any tasks).

Distance Education

 IT facilitates the access to information and opens up opportunities for the variability of learning activities. Its individualization and differentiation, let organize the interaction of all subjects of education in a new way, to build an educational system in which the student would be an active and equal participant in educational process. Also, the use of technologies can replace many

traditional teaching aids. Such a replacement is very effective, as it stimulates students to keep interest in the subject, creating an information environment.

Students are able to check themselves

Students can visualise the outcome of their efforts using modern multimedia computer tools. We must not overlook the significance of technology in schooling. The usage of computers adds to the lesson's appeal and makes it truly modern. Individualization of the training appears at this moment, control and summarising are delivered precisely on time, and pupils are not need to hunt for solutions on their own.

Conclusion

Modern technology can be a potent weapon for cheating and can open doors that should be kept shut, yet it plays an important role in education overall.

FACTORS AFFECTING TECHNOLOGY IN EDUCATION

Technology in education systems provides a number of serious challenges, but it also presents certain opportunities that we would be foolish to ignore, just as it did with past innovations.

Modern classrooms have remained mostly unchanged since schooling became compulsory around the world in the second half of the nineteenth century. While the pupils sit at tables facing the front, a teacher stands at the front of the room, using chalk to scribble thoughts, dates, and calculations on a blackboard. Although some technological advancements, such as the television and overhead projector, have had an impact on how pupils are taught, little has changed fundamentally in the classroom.

As technology evolves, instructors and schools are under growing pressure to incorporate it. We take a look at some of the issues and possibilities.

The availability of teachers

It was almost unthinkable for teachers to share their personal information before the internet. Students and their parents can now contact teachers 24 hours a day, seven days a week via chat

or email. This approach is fantastic for students who need counsel or direction, but it also implies that students may not work as hard on their own to find answers and solutions. When there are too many pupils per instructor, it puts a lot of strain on the staff, who must work and be available around the clock. Schools could try to protect their teachers by limiting communication to Reedit-style portals, where others can see and comment on kids' responses. Students might therefore be encouraged to handle problems among themselves, with teachers only intervening in exceptional circumstances.

Learning with computers is expensive

Computer science is increasingly taught alongside physics, biology, or chemistry. And, similar to these other sciences, special equipment is needed to instruct students. Just as chemistry requires a specialized laboratory, computer science courses need computer equipment that could be prohibitively expensive. Beyond learning programming in school, computers are also a medium of instruction. They can host interactive media content, quizzes, or help students research any topic imaginable. With a computer and an internet connection, all of humanity's knowledge is just a few clicks away. Knowing how to use a computer, navigate the internet, and retrieve information should be a skill every student can master. But few schools can afford to put a computer into every student's hands, and it is not safe to assume that every student has access to a computer at home, or that their family's financial situation allows them to acquire one.

Automatic tests can allow teachers to attend larger classes

Exams and assessments are, for many students, what distinguishes a school from another. They add to the teacher's workload by requiring him or her to review, grade, and eventually explain content to the class. The more students in a class, the more work the teacher has to do. Teachers can use technology to create automated assessments that promptly grade a student's work and provide an overview of which topics require further attention. The assessments could also inform the teacher about which pupils need extra help and which need to be challenged further. It's even possible to conceive an AI quizzing pupils on their strengths and weaknesses in real time, in order to motivate them to study harder.

Homework needs to be better

Computers at home have dramatically changed the way homework is used to test students' knowledge. Though the expense involved means we are still a way off a time when all students have access to a computer, most schools have at least one for shared use. This increased availability of computers makes further research relatively easy, while at the same time making it possible for students to cheat or skip exercises. Homework, more than ever before, needs to appeal to creativity and requires original work to be meaningful.

Technological difficulties will only accelerate

Computers and the internet are extremely beneficial for acquiring and disseminating information. They obliterate the concept of physical space and can aid in the visualisation of knowledge in ways that books cannot. They do, however, provide considerable issues for teachers and curriculums, as they often need more time per student than would otherwise be required. However, with a well-thought-out strategy and foresight, schools and teachers can employ technology to assist our next generation become the smartest ever.

THE DEVELOPMENT OF TECHNOLOGY IN THE PROCESS OF EDUCATION AND TEACHING

The successful use of technology in education has transformed education and expanded educational opportunities. Different educational technologies have helped both teachers and students; teachers have learnt how to integrate technology into their classrooms, while students are becoming more interested in learning using technology. The use of technology in education has erased educational barriers; modern educational technologies allow students and teachers to collaborate in real time. Mobile learning and long-distance learning have benefited from technological advancements. Teachers have been able to contact pupils across borders because to the internet, and students from impoverished nations have been able to enrol in advanced educational courses thanks to the internet. Virtual classrooms have been created by several institutions and colleges to embrace online education. Students can attend classrooms at their free time and engage with other students remotely through online education, which is both flexible and economical.

Recent advancements in educational technologies have yielded positive results in our education sector. This new educational technology is supporting both teaching and learning processes, technology has digitized classrooms through digital learning tools like, computers, iPads, smart phones, smart digital white boards; it has expanded course offerings, it has increased student's engagement and motivation towards learning.

ADVANTAGES OF TECHNOLOGY IN EDUCATION:

Technology Unlocks Educational Boundaries: Virtual or online learning is made possible by technology. Online learning, unlike traditional classrooms, is flexible, allowing students from different geographical regions to attend the same class without having to travel between them. In the virtual world, advances in virtual technology have enabled face-to-face communication between students and teachers. In this situation, students can use virtual communication platforms like SKYPE to ask their distant lecturers questions. Online education is a new trend in education that has made various educational courses and materials available to people all over the world. Many schools and universities are incorporating online learning tools into their educational systems, allowing students to learn from anywhere.

Technology Simplifies Access to Educational Resources: Students can use technology to acquire access to open educational resources. These resources are retained in the public domain and are freely accessible over the World Wide Web to anybody. Electronic books (e-books), podcasts, digital libraries, educational games, educational films and instructions, tutorials, and much more are among the educational materials available. Teachers have taken to using video hosting services such as Youtube to upload recorded lectures so that students who missed them can view them from anywhere. Students and teachers can also utilise Edtech Apps to get instructional content by using cell phones for educational reasons. Teachers are also using lesson videos and clips on the internet to learn how other educators use technology in the classroom and in education. These techniques and approaches, which have been uploaded by other educators, promote self-training and assist many teachers in integrating technology into their own classrooms.

Technology Motivates Students: The use of computer based instructions makes students feel in control of what they learn. Students find it easy to learn with technology because computers are patient compared to humans. Teachers publish educational instructions on classroom blogs or they assign research work via email, and this gives a student time to study on their own and have no fear of making mistakes during the process of learning. Also the use of Gamification educational technologies has increased students interest in learning, teachers use educational puzzles and video games to teach students how to solve different academic challenges, this all process makes students love to learn.

Technology Improves Students Writing and Learning Skills: Many pupils have benefited from the usage of computers in the classroom in learning how to write well-structured phrases and paragraphs. Students utilise word processing software on computers to take notes in class; these word processing applications feature built-in dictionaries that assist students in auto-correcting spelling errors and correcting their grammar in a sentence. Many students have utilised the BYJU'S APP to learn a variety of languages online, and they may also access grammar manuals written by professional publishers. Teachers encourage their students to create personal blogs using free blog publishing services like BLOGGER & WORDPRESS, students use these blogs to express themselves and share with friends, this process helps students learn how to write creative blog posts.

Technology makes subjects easy to learn: Various forms of educational software are created to make it easier for pupils to learn various courses. Many students grumble about how difficult it is to study math, therefore some have turned to educational math software like BrainingCamp. Students can utilize Braining Camp to apply their math abilities and knowledge to solve a variety of arithmetic problems. Learning math at BrainingCamp.com is a lot of fun. Arithmetic learning games are also used by students to master new abilities such as solving math equations.

Promotes Individual Learning: Students can learn independently using technological resources such as cell phones and the internet. Many kids prefer to teach themselves and find knowledge on their own since it allows them to try out several approaches to completing a task at school. Students improve various academic skills through the use of interactive educational games and software. Art and design students, for example, can use Photoshop software to master

various design and editing abilities. Learning how to use Photoshop is a difficult process, but the more mistakes and trials a student makes, the better they grow at using Photoshop. Also the use of cell phones as educational tools encourages students to download educational podcasts which they can listen to while at home.

Supports Differentiated Instructions: Teachers can use technology to cater for each and every student's needs in the classroom or outside of the classroom. The use of classroom assessment software and performance tracking programs helps teachers plan for each student basing on their performance and learning capabilities. Teachers can be in position to classify students and know their weakness and strength as far as education is concerned. Teachers can use mobile applications like PollEverywhere.com to get student's response on any topic or subject. Social collaboration tools like Piazza.com can help teachers create virtual classroom and assign research work or answer student's questions from anywhere.

Increases Collaboration between Teachers and Students: Teachers can easily communicate with their pupils, and students may communicate with their teachers or fellow students in real time, thanks to the usage of new communication technology in education. Teachers can utilise mobile texting apps to remind students of upcoming tests or assign study subjects to them. Social bookmarking sites like Pinterest.com help students collaborate and follow creative teachers and educators from around the world; educational social networks like ePals.com connect students with experienced educators; and social bookmarking sites like Pinterest.com help students collaborate and follow creative teachers and educators from around the world. This flexibility in teacher-student contact and communication aids shy kids in improving their grades.

Prepares Students for Tomorrows Technological Jobs: Every profession in the future will require applicants to have some technical abilities as the world progresses. As a result, the employment of technology in school prepares our children for sophisticated working conditions in the future. Students use computers in the classroom to create innovative programmes that can be used for educational reasons on cell phones or tablets. Knowing how to use a computer has numerous advantages, thus the more time a student spends at school utilising various technological tools, the more experienced and creative they become. According to studies, the most popular jobs today will be obsolete in the next 5-10 years as technology automates the

majority of these tasks. It is therefore preferable to provide our children with technical skills so that they can establish their own jobs.

Increases Students Innovation and Creativity: Many teachers have discovered that integrating technology in their classroom increases student's engagement in the classroom. So now they put up technological competitions where students can make small educational technologies like robots, smart-pens, mobile applications and much more. These technological competitions in schools have increased the level of creativity and innovation among students. Technology teaches students how to solve challenges and get ready for more difficult tasks in life.

CONCLUSION

Technology has a good impact on education, but it can also have detrimental consequences. Teachers and students should seize this opportunity in a positive perspective and reduce the barriers that are preventing many kids and schools from attaining excellence. As a result, it is past time for each country to implement a more technologically advanced education system in the future. The current study has yielded some intriguing data regarding the teaching style used in the classroom to instruct students. There is little doubt that the CAI technique is well praised for making difficult topics understandable.

REFERENCES:

Bromley, H. (1998). Introduction: Data-driven democracy? Social assessment of educational computing. In H. Bromley & M. Apple (Eds.), *Education, technology, power*(pp. 1-28). Albany, NY: SUNY Press.

Bruce, B. C. (1993). Innovation and social change. In B. C. Bruce, J. K. Peyton, & T. Batson (Eds.), Network-based classrooms (pp. 9-32). Cambridge, UK: Cambridge University Press.

Bruce, B. C., & Hogan, M. C. (1998). The disappearance of technology: Toward an ecological model of literacy. In D. Reinking, M. McKenna, L. Labbo, & R. Kieffer (Eds.), *Handbook of literacy and technology: Transformations in a post-typographic world* (pp. 269-281). Hillsdale, NJ: Erlbaum.

Ertmer, P. A. (2005). Teacher pedagogical beliefs: The final frontier in our quest for technology integration. *Educational Technology, Research and Development, 53*(4), 25-39.

Mishra, P., Spiro, R.J., & Feltovich, P.J. (1996). Technology, representation, and cognition: The prefiguring of knowledge in cognitive flexibility hypertexts. In H. van Oostendorp & A. de Mul (Eds.), *Cognitive aspects of electronic text processing* (pp. 287-305). Norwood, NJ: Ablex.

National Research Council. (2000) *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.

Papert, S. (1980): *Mindstorms: Children, computers and powerful ideas*. New York: Basic Books.

Pennock, R. (2001). *Intelligent design creationism and its critics: Philosophical, theological & scientific perspectives*. Cambridge, MA: MIT Press.

Peruski, L., & Mishra, P. (2004). Webs of activity in online course design and teaching. *ALT-J: Research in Learning Technology, 12*(1), 37-49.

Russell, G. (1998), 'Elements and implications of hypertext pedagogy,' Computers & Education 31 (2), pp. 185–193.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-22.

Simon, H. (1969). *Sciences of the artificial*. Cambridge, MA: MIT Press.

Somekh, B. and Davies, R. (1991), 'Towards a pedagogy for information technology.' The Curriculum Journal 2(2), pp. 153–170.

Twining, P. (2000), 'The Computer Practice Framework: a tool to help identify the impact on education practice of investments in information and communication technology'. ALT-C 2000, Manchester, September 2000.

Yu, F.-Y. (2001). 'Competition within computer-assisted cooperative learning environments: cognitive, affective, and social outcomes'. Journal of Educational Computing Research, 24 (2), pp. 99–117.