

# Technologies Used in Education

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## Abstract

The evolution of technology, particularly in the field of education, has become crucial in engaging students and enhancing learning. Communication, defined as the transmission of information, is at the core of using technology effectively in education. Technology, which applies knowledge to practical purposes, has transformed various sectors and everyday life. Information and communication technology (ICT) has revolutionized education by increasing student motivation, providing interactive learning methods, and enabling rapid knowledge transfer. However, challenges such as distractions from technology, high costs, and the need for access to technology at home remain obstacles in utilizing ICT effectively in education. Nevertheless, the use of technologies like blogs, social networks, and scheduling tools has become common in educational settings to enhance learning and engagement.

## Introduction

Technological change has been fostered in the past decade due to the increasing use of internet and communication technology. Even though almost all of the facilities of internet were present at that time, it was difficult for a common man to use it for quite many reasons. One important reason was the high initial cost of the equipment. A lot has changed in the world of technology in recent years. The growing popularity of digital media has created a need among teachers to use modern tools in their work to keep students engaged and interested. Student engagement requires creativity in presenting new ideas to keep students interested in the subject they are learning. Due to the importance of educational technology in today's education sector, technological tools have become indispensable in the learning system of students.

## Defining Communication

The origin of the word 'communication' comes from the Latin verb 'to communicate', meaning 'to share' or 'to communicate'. Communication is generally understood as the transfer of information. In this context, the message is transmitted from the sender to the receiver by means such as voice, paper, physical travel or electricity. Alternatively, the term "communication" may simply mean the transmission of messages or the review of transmissions. There is much disagreement about the correct definition of communication, and many scholars doubt that a single definition can adequately encompass the term. These difficulties arise because the word is used in different contexts, for different things, often with different meanings. Despite these problems, the problem of precise definition is of great importance as it affects the research process at all levels. This includes questions such as how observed facts are

classified, hypotheses and laws are established, and how theories are developed from these steps.

### **Defining Technology**

Technology is the application of knowledge to achieve practical goals in a unique and repeatable way. The term technology can also describe the product of such activities.

The use of technology is widespread in medicine, science, industry, communication, transportation and daily life. Technology includes tangible things, such as equipment or machines, and intangible things, such as software.

The rapid development of technology has caused people to change. The first known technology was the use of stone tools in prehistoric times, followed by the use of fire, and contributed to the development of the human brain and language during the Ice Age. The invention of the wheel in the Bronze Age made possible great journeys and the creation of complex machines. Recent technological advances, including the printing press, telephone, and the Internet, have simplified communications and created economies of scale.

While technology contributes to economic and human development, it can also have negative effects such as pollution, resource depletion, or create negative effects on life such as technological unemployment caused by automation. As a result, philosophical and political debates have emerged on the role of technology and its areas of use, technology ethics, and how the negative effects of technology can be reduced.

### **According to the World Bank**

“ICTs consist of hardware, software, networks and media for collection, storage, processing, transmission, and presentation of information (including voice, data, text and images” (*World Bank, 2003*).

Hence in other words it can be said that Information and communications technology is used to create, store and manage information. It includes computers, internet and even radio and television (Blurton, 2002).

### **Historical background**

Due to this the issue of the use of information and communication technology in education was brought up. In the 1980s, the term microcomputer was used for information and communication technology which was later replaced by IT and then finally ICT. However, the governments of the developing nations are constantly trying to raise the educational standards by embedding information and communication technology in the curriculum. Information and communication technologies transform the traditional education system into a modern and efficient system. Information and communication technology is helping to transform the education system in many ways. According to Cox (1997), ICT helps increase student motivation. It is true that students quickly become bored with traditional teaching methods, and if new teaching methods are introduced using ICT, student motivation can increase significantly. Communication and Communication Technology uses interactive content to help students learn faster. For example, in video-based projects, information and communication technologies use text, images, movement and sometimes sound to stimulate and monitor the learning process, thus changing the traditional education system. Moreover, thanks to the information network and communication technology, although the information cannot be reused many times, this increases the motivation of the students and helps them to participate in events around the world. Information and communication technology also helps in the rapid transfer of knowledge and skills (Intel, 2008). This training program

helps teachers think creatively and come up with new ideas to teach students. It has been found that the use of information and communication technology in educational institutions can empower students and therefore motivate them to learn. Effective use of information and communication technology can replace the teacher's traditional teaching methods for students who engage in intensive or student-centered learning. Hacking is an important issue in the use of information and communication technologies in education. Teachers who use information and communication technology in their classrooms, have realized that the students can be distracted if they fall into any distraction traps that may arise from internet or computer use. Balanced use of information and communication technologies is another problem in the education system. Higher costs associated with installation, damage and repairs can be increased by the use of ICT in education. Therefore, the biggest obstacle to the use of ICT in educational institutions is the high costs that may arise from this process and return in the future. Another challenge with the use of ICT in education is the need to have technology at home to access information.

#### **The most used technologies in classroom:**

- **Blogs and social networks:** These provide us with information where students express or discuss different things, post course-related content, etc. It also provides the opportunity to form working groups.
- **Planning with tools:** Calendars and task managers when preparing for exams, administering exams, assigning homework, etc. It is very useful.
- **Store information in the cloud:** it gives us the ability to collaborate, access from any device, from anywhere. Some of the devices that use this technology are office suites, storage, etc.
- **Digital whiteboard and function board:** A whiteboard that allows you to create and manage computer images, create notes and comments, and record and/or email screens.

Interactive tables provide students with the opportunity to interact with the surface. For e-learning sites like coursera, edX etc as well as online assessments with thousands of questions and tests, detailed student progress, benchmarks or assignments.

#### **ICT use in education:**

Information and communication technologies support active and collaborative learning. The level of information input and ICT installed in the classroom depends on the technology used. The following benefit can be achieved:

- It not only increases students' motivation to learn, but also increases the teacher's enthusiasm for teaching (Becta, 1998).
- Increases the effectiveness of communication between students and teachers (Becta, 2002)
- Regular feedback from parents and students helps teachers increase students' motivation to learn
- Parents can be more involved in students' activities and meet with teachers regularly, which can increase the level of communication (Flecknoe, 2001).

#### **Professional teachers:**

Students aren't the only ones who need to improve their digital skills. Teachers also need to be literate and trained in the use of ICT. They need opportunities to develop ICT skills so they can teach their students. With the right training and knowledge, teachers can effectively integrate ICT into any classroom. Each course offers

students the opportunity to learn and develop in a collaborative environment, positioning them well for the workplace and life outside of school.

**Benefits of technology in education:**

Technologies make life easier. It influences the complicated tasks and eases them. Technologies can assure better learning system and maintain a proper communication among teachers and students. The following benefits can be obtained from using technologies in education:

**Easy access to a wide range of modern products:**

The wide range of educational technologies available today offers students many options. They can choose the one that suits their learning abilities from these options. This allows them to acquire the knowledge and skills they need to be successful in their jobs. Moreover, they also get the latest and most useful information on every topic. For example, consulting online articles to write a lesson will earn you more points and keep you up to date on the topic, rather than browsing through encyclopedias at home.

**Improves communication and operational skills:**

In the workplace and university, students who can communicate effectively through technology will outperform their non-technological peers. Communication skills are important in conveying a message effectively.

**Makes learning fun and interesting:**

Learning today requires more than studying. It also requires you to learn to have fun. Students are easily distracted especially with the time-consuming effects of social media. Learning with the help of educational technology also keeps students motivated and engaged.

**Stay connected online:**

Our lives are so dependent on the Internet that there is hardly anyone who does not use it every day. Nowadays, access to the internet is essential for students anytime, anywhere. They need to access information whenever they want, without having to travel or wait a certain amount of time to complete their tasks and research. Edtech helps them with this. Using education technology, students can connect to the internet at home, at school or while in school.

**Keep it current and relevant:**

The pursuit of knowledge and new information is one of the most important things in life that everyone should enjoy. Technology can help you develop these skills and improve your skills through a variety of online programs. They give people the opportunity to learn different things that interest them and are relevant to their career or education. Even those looking to try a new career path can find online programs that can help them learn-related skills.

**Learning and developing skills:**

The use of technology in education also has effects on human health. It can improve mental and physical health. By using these tools, people can strengthen their learning and cognitive skills, which is reflected in their academic performance and physical health.

**Stay in the moment:**

Technological developments enable students to increase their knowledge in different fields and gain new skills that can be used in the future. Students who follow the latest technological developments will have the advantage of improving their skills in various fields. In addition to gaining a better understanding of new technologies, these students will also be well equipped to find employment quickly. They can help companies become more efficient by knowing how to use technology.

**Different Ed.tech tools used by teachers:**

Technology in education has created the opportunity to personalize teaching-learning methods and experiences in today's educational institutions.

**Question based learning:**

The development of mobile applications and websites in education has led to a question-based learning environment rather than a one-size-fits-all approach to classroom teaching. For example, a shoe store might have a data scientist looking for programs related to mobile applications.

**Student Options Advanced Technology:**

Student Opinions Advanced technology is becoming widespread throughout the education system, and educational information is becoming an important tool for guidance and decision-making. As more educational information and data becomes available, measuring student engagement, participation, and outcome in courses becomes increasingly important.

**Analytical tools:**

Finally, learning analytics will be able to alert teachers to problems and help them take action. Teachers and students will be guided by the learning system in the way education is delivered and experienced. Data analysis will reveal the role of students in education.

**Cloud computing:**

Around the world, data stored on remote application servers has made it possible to access course and teaching materials from any mobile device or from anywhere. Moreover, cloud-based educational software has also been able to solve the data storage problem.

**Voice recognition technology:**

Virtual assistants and voice recognition software have become standard in many devices and software applications. Learning through reality, the use of Virtual Reality and Augmented Reality has had a huge impact on online education. Students can enjoy a learning experience powered by virtual reality and augmented reality without having to move.

**3D printing:**

Through 3D printing or prototyping, students can learn in a powerful and visual way. It helps students unlock their creativity and gain more learning opportunities. Play Games are an example of how fun and exciting learning can be. Games played in the classroom allow students to connect the fun elements of the game to the

content and concepts they need to learn. Role playing increases student participation, maintains interest, and creates excitement in the classroom.

### Online meeting apps:

Teachers use apps like Goggle meet, Zoom, Messenger, What's app etc are used being successfully in sharing information, assigning home task, submitting reports and for taking classes. It makes the education more objective oriented. Many hurdles like adverse weather condition, lockdown etc can be overcome by using these apps in spreading education.

### Conclusion:

It can be understood that communication and communication technology play an important role in education. By using them in the classroom, the entire education system can be reorganized. The use of information and communication technology helps boost morale and increase student motivation. Children are always willing to do something new. By introducing new teaching methods and using multimedia in the classroom, students can learn more. It is truly said that a picture is worth a thousand words; therefore, at some point the teacher will need to explain things to the children, at the same time using the tools available will be easier and will leave a long-lasting impact on the children's minds.

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