Technology's Impact on Education

Dr. Abha Singh
Associate Professor,
Education Department J. S. Hindu P.G. College Amroha

Abstract
Education is necessary for the all-round development of human beings. Education was not previously within everybody's reach. There were large sections of society which were deprived of it and even in countries where there was wide-spread education, there were still many issues with making it accessible to the general public. Advances in technology have helped education to become more readily available than it once was. Inventions such as the online class room and education television have improved education in a significant way. There is an emerging consensus around the world about the benefits that can be brought to the education system through the appropriate use of evolving technologies. The benefits have pervaded practically all areas of activity in which knowledge and communication play a vital role. It is involved in improved teaching and learning processes to better student outcome, increased student engagement and seamless communication with teachers and parents. Although some negative facets of technologies used in the field of education have also emerged, but overall technology has positively influenced the field of education. The use of technology in the field of education is inevitable; what really matters is how we actually use it. This paper aims to study the effects of Technology on Education.
Keywords: Education, Technology, Online classroom, Education Television

I.   Introduction

Today knowledge and information are the main keys of obtaining productivity, wealth and comfort so human beings have concentrated on approaches for gaining better quality of education. Education in the 21st century is the centre from which all changes and developments arise. Technology is bound to rule our present and our future. This is an inescapable fact that we need to face. It has ruled over different facets of our life and influenced the way we live. The student-teacher interaction has drastically changed since the introduction of technology- based class structure. The teacher is no longer the centre of the classroom but rather a via media between information and the student. Instead of being passive listeners, the students have now become active in gaining, rearranging and displaying information.

As technology grows, there are numerous ways of applying it to different things. Education is no different. The different technologies used in the class room have had a great effect on the overall education of students around the world.

Education technology means the use of all kinds of modern media and materials for maximizing the learning experiences. Education technology is suggested by experts as one of the potential means of imparting education effectively and efficiently.

Previously, teachers used to teach in rigid, formal and stereo- typed ways. Education was then conceived as the process of transmitting knowledge and ideas. Student used to indulge in rote learning of whatever was given by the teacher or text book. They often could not understand what was taught and were expected to reproduce at the time of examination. Pupils were silent audience and could not make any logical queries or have independent thinking.

Today, the student is not considered as an empty vessel to be filled in by facts and figures. They are now expected to use so many media and materials to get learning experience from all sides. Education is regarded as a process of interaction and interpersonal communication. The modern teacher has to help, to guide and facilitate the learner's development. The teacher has to inspire and motivate the young learners and assist the adult learners in their quest for knowledge and skills.

What is Education technology?

Technology in education is defined as an array of tools that is helpful in advancing student- learning. It is also the study and ethical practice of facilitating e-learning, which is the learning and improving performance by creating, using and managing appropriate technological processes and resources. Educational Technology relies on a broad definition of the word "technology" which signifies the tools and the sources used to enhanced and develop the skill of Education.

History of the Use of Technology in Education

Educational technology can be traced back to the emergence of very early tools, e.g., paintings on cave walls. But usually its history starts with the introduction of educational films (1900s) or Sidney Presser's Mechanical Teaching Machines in the 1920s.

The first large scale usage of new technologies can be traced to US WWII training of soldiers through training films and other mediated materials. Today, presentation-based technology, based on the idea that people can learn through aural and visual reception, exists in many forms, e.g., streaming audio and video, or PowerPoint presentations

Since the 1990s, there are a variety of schools that have Computer-based learning (CBL) system. They are frequently based on constructivist and cognitive learning theories. These environments are focused on teaching both abstract and domain- specific problem-solving learning.

The 2000s saw the emergence of multiple media and ubiquitous technologies which gave a new impulse to situated learning theories favoring learning-in-context scenarios. Students are now growing up in a digital age where they have constant exposure to a variety of media.

Why technology is used in Education Industry?

Economists identify three factors that lead to growth which is based on increased human capacity.

• Capital deepening the ability of the workforce to use equipment that is more productive than earlier versions.

• Higher quality labour a more knowledgeable work force that is able to add value to economic output.

• Technological innovation - The ability of the workforce to create, distribute, share and use of the new knowledge.

These three productivity factors serve as the basis for three complementary, somewhat overlapping, approaches that connect education policy with economic development.

• The Technology Literacy approach -Increasing the extent to which new technology is used by students, citizens and the work force by incorporating technology skills into the school curriculum.

• The Knowledge Deepening approach -Increasing the ability of students, citizens, and the workforce to use knowledge to add value to society and the economy by applying it to solve complex, real-world problems.

• The Knowledge Creation approach -Increasing the ability of students, citizens, and the workforce to innovate, produce new knowledge, and benefit from this new knowledge.

Advantages of Technologies used in Education

There are various types of technologies currently used in field of education which has been playing a beneficial role in education. Among these are:

• Computer in the classroom: Having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new information on websites.

• Education Television: Education television has taken education in the homes of all those who had no access to education. It has made education more interesting and interactive with the students.

• Class blogs and Wikipedia: There are a variety of Web 2.0 tools that are currently being implemented in the classroom. Blogs allow for students to maintain a running dialogue, such as a journal, thoughts, ideas, and assignments that also provide for student comment and reflection. Wikipedia, an online encyclopedia, is more group-focused. It allows multiple members of the group to edit a single document and create a truly collaborative and carefully edited finished product.

• Wireless classroom microphones: Noisy classrooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers more clearly. Students learn better when they hear the teacher clearly.

• Mobile devices: Mobile devices such as tablet or smart phone can be used to enhance the experience in the classroom by providing the possibility for professors to get feedback.

• Interactive Whiteboards: An interactive whiteboard that provides touch control of computer applications. These enhance the experience in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write, or manipulate images on the interactive whiteboard.

• Digital video-on-demand: Digital video eliminates the need for in-classroom hardware and allows teachers and students to access video clips immediately by not utilizing the public Internet.

• Online media: Streamed video websites can be utilized to enhance a classroom lesson.

• Online study tools: Tools that motivate studying by making studying more fun or individualized for the student.

• Digital Games: The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students.

Education Technology Project in India

The Government of India in the Ministry of Education and Social Welfare realized the importance of Education Technology for Qualitative improvement of education and included the Education Technology Project in its Fifth Five Year Plan in 1971. This project had four sub-schemes as follows:

• Setting up an Education Technology Unit in the Ministry of Education and Social Welfare.
• Establishing a Centre for Education Technology (CET) in the NCERT.
• Assisting States for setting up Education Technology Cells and their programmes on 100% basis.
• Strengthening a few education institutions for undertaking Education Technology Programmes.

Accordingly, a unit was started in the Ministry since 1971 and a CET in the NCERT was set-up during 1973. Education Technology Cells come into being in different states from 1972- 73 onwards.

The Unit in the Ministry was responsible for all planning, policy-making and providing funds for implementation of the Educational project. The CET in the NCERT started functioning in the following areas:

• Systems designing and implementation.
• Prototype production of suitable hardware and software.
• Training in different areas of Education Technology.
• Research and Evaluation
• Collection and dissemination of information, data and consultancy services.

The Education Technology project was conceived as a broad- based and collaborative effort among the Ministry of Education and Social Welfare, the Ministry of Information and Broadcasting, the Indian Space Research Organization and other concerned organisations. It underlined the importance of inter- agency co-ordination, systematic planning, scientific evaluation and effective utilization. Operationally the scheme sought to extend, the benefits of technology to large groups, particularly those in rural areas. It aimed at improving the quality of education at all levels, to reduce wastage and stagnation and to introduce new methods of teaching and innovation.

Recently, Information and Communication Technology (ICT) for education, initiative by UNESCO, conducted an extensive consultation to identify the competencies that teachers should develop to use technology effectively in the classroom. It is basically an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell-phones

satellite communications, digital television computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs etc. that provide access to information.

Challenges of use of Education Technology in India

Despite early implementation of technologies in Education system, India still faces teething problem for the new technologies in education. Some of them are:

• Not enough or limited access to computer hardware & computer software in education institutes
• Lack of adequate technical support for education institutes
• Not enough teacher training opportunities are there
• Lack of knowledge about ways to integrate technologies to enhance curriculum
• Education technologies integration is not a priority
• Students and Teachers do not have access to the necessary technology at home

Negative facets of new technologies

There is also a negative facets of new technologies used in education. Many ethical questions and issues arise with this use of the latest technologies in education.

• The Copy and paste syndrome- Schools and universities have more and more problems with students who prepare essays/project/ presentation by using material from websites or blogs. Often, students just copy pieces of information that look relevant and paste them together, without sometimes even understanding them, let alone citing them.

• Distortion of reality- When students are looking for some information on the website, they usually employ a search engine. This will give them a ranked list of often incredibly many search results. There is the real danger that their view of reality is distorted by the website, by the fact that someone with enough money can influence what is written or ranked.

• Too much trust in the information found- When searching for some information on the website students tend to accept what they have found as true information, often without looking at other sources and hence having no justification to accept the information at face value.

• Loss of privacy and profiling- When students use services offered over the websites, they are often making personal information known to the service providers. The situation gets much more complicated if a company has a set of services so that combining all the information that can potentially be extracted gives a very detailed profile.

There can be no doubt that some companies are collecting information or profiles on users, and on relevant economic developments. This may be done through stealth, or from open social networks where many persons give away information that may well be harmful to them at some later stage.

II.   Conclusion

Technology can reduce the tremendous effort made by students to gather information using numerous printed book and journals. The time thus saved can increase students' focus on more important knowledge gathering process. Equally important, technology can represent education in ways that help students understand the latest concepts and ideas. Education Technology also enables teachers to integrate project based learning. With guidance from effective teachers, students at different levels can use these tools to construct knowledge and develop skills required in modern society such as presentation skills and analytical skills.

In the present time the, teacher's role in teaching is that of a facilitator. The teacher has to facilitate the learning by providing students with access to technology. Thus the teachers can find the means to engage students more easily in learning and to cater to the various needs of different students.

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