ICT Application in Education: An Overview

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ABSTRACT:

Today, we are living in an age of computer. The computer has occupied a very significant place in the 21st century. Without which we cannot imagine anything. It plays a vital role in the fields like banking, business, medicine, engineering, entertainment etc. So is the case with educational field. The rapid development of the computer technology has affected the whole of human being. 21st century is the knowledge oriented society. We are providing knowledge to students with various medium whether from formal system, informal way, non formal way as well as online system. Through the online system, we should recognize the importance of Information and Communication Technologies (ICT) in online system of teaching and learning or e-learning. In this article we focused on the application of ICT as well as online learning in education.

Keywords: ICT, e-learning, virtual classroom

INTRODUCTION:

Information technology, that enhanced the importance of computer technology, has made it possible to work, whatever one wants more effectively and more quickly. It is because of computer and information technology, it has been made possible to have internet, digital TV's, wireless communication, tele-medicine and many more.

In an age of computers, the traditional ways of teaching and learning have lost their significance. The innovative teaching-learning methods are expected to execute the teaching more effectively and efficiently. It has become the need of a time to avail the facility/device with the help of which a learner may learn anytime and anywhere.

Communication technology is the best option for things faster and better. We must know that the need of the hour is to apply the best technology in the practices of better learning. IT is the sector which is going through many changes in a minute time, so it is need that education and IT must go together.

EDUCATIONAL TECHNOLOGY

Educational technology, also termed instructional technology, information and communication technology (ICT) in education, Ed Tech, and learning technology, is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources. A closely related

term, e-learning, refers to the use of modern technology, such as computers, digital technology, networked digital devices and associated software and courseware with learning scenarios, worksheets and interactive exercises that facilitate learning.

Educational technology is used by learners and educators in homes, schools, businesses, and other settings. The term educational technology encompasses both material objects, such as machines and networking hardware, as well as theories such as instructional theory and learning theory. Educational technology is an integral part of society today. Information and communications technology in education refers both to an array of tools and also to the principles for their effective application in learning. Educational technology relies on a broad define methodologies and techniques, and skills assessments. Examples of these two dimensions are material aspects such as internet-based learning, and educational psychology aspects such as instructional theory, learning theory, media psychology and human performance technology, fields of study that apply theories of human behavior to educational technology.

HISTORY: CHRONOLOGY OF EVENTS

Use of media for instructional purposes is generally traced back to the first decade of the 20th century with the introduction of educational films (1900s) and Sidney Pressey's mechanical teaching machines (1920s).

- **1960:** University of Illinois initiated a classroom system based in linked computer terminals where students could access informational resources on a particular course while listening to the lectures that were recorded v*ia* some form of remotely linked device like a television or audio device.

- **1960s:** Stanford University psychology professors Patrick Suppes and Richard C. Atkinson experimented with using computers to teach math and reading to young children in elementary schools in East Palo Alto, California. Stanford's Education Program for Gifted Youth is descended from those early experiments.

- **1963:** Bernard Luskin installed the first computer in a community college for instruction.

- **1970s- 80s:** Computer-based learning by Murray Turoff and Starr Roxanne Hiltz at the New Jersey Institute of Technology as well as developments at the University of Guelph in Canada.

- **1976:** Bernard Luskin launched Coastline Community College as a "college without walls" using television station KOCE-TV as a vehicle.

- **1973-1985:** In the UK the Council for Educational Technology supported the use of educational technology, in particular administering the government's National Development Programme in Computer Aided Learning (1973-77) and the Microelectronics Education Programme (1980-86).

- **Mid-1980s:** Digitized communication (computer-based training (CBT) or computer-based learning (CBL)) and networking in education started. Beginning of distance learning courses using computer networking for information.

- Early e-learning systems, based on computer supported collaborative learning (CSCL), which encouraged the shared development of knowledge.

- **1990:** World Wide Web (www), teachers embarked on the method using emerging technologies to employ multi-object oriented sites, which are text-based online virtual reality systems, to create course websites along with simple sets of instructions for its students.

- **1993:** Graziadei described an online computer-delivered lecture, tutorial and assessment project using electronic mail.

- **1994:** first online high school had been founded.

- **1994:** CAL Campus (online-based school) presented its first online curriculum. allowed to progress real-time classroom instructions and Quantum Link classrooms.

- **2008-2009:** Videoconferencing popular with Museum Education.

The Open University in Britain and the University of British Columbia (where Web CT, now incorporated into Blackboard Inc., was first developed) began a revolution of using the Internet to deliver learning, making heavy use of web-based training, online distance learning and online discussion between students.

With the drastic shift of Internet functionality, multimedia began introducing new schemes of communication; through the invention of webcams, educators can simply record lessons live and upload them on the website page.

INFORMATION AND COMMUNICATION TECHNOLOGY [ICT]

ICT is the combination of three words: INFROMATION, COMMUNICATION and TECHNOLOGY. From these three words we can define ICT as "a combination of technological tools and resources that are used to manipulate and communication the information. Here technological tools are the electronic & digital devices like computers, Internet and broadcasting technologies etc. Nowadays ICT (Specially an internet) plays very important role in the process of integrating technology into the educational activities. The importance of ICT is: Students Centred Learning, Supporting Knowledge Construction (Constructivism Learning), motivation to learn, Developing Higher Order Thinking Skills, Developing Problem Solving Attitude and Creating interest.

The role of ICTs in the education is recurring and unavoidable. Rapid changes in the technologies are indicating that the role of ICT in future will grow tremendously in the education. ICT also focuses modification of the role of teachers. In addition to classroom teaching, they will have other skills and responsibilities.

ICTs can play the same role in our information and communication process and their outcomes as played by other technologies in making our lives quite comfortable and purposeful. As a result, they have become quite popular in all walks of our life. The modern ICTs, in fact, have brought a revolution in the field of business, industry, insurance, banking, agriculture, medicine, transport, postal and telecommunications, service organizations and various other fields affecting our day-to-day activities.

ICT is defined, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Information and Communication

Technology implies the technology which consists of electronic devices and associated human interactive materials that enable the user to employ them for a wide range of teaching - learning processes in addition to personal use. These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.

ICT is that technology which uses the information to meet human need or purposes including processing and exchanging. Information and communication technologies are of paramount importance to the future of education. ICT in education initiatives that focus on the following areas are most likely to successfully contribute to meeting the EFA and Millennium

DEVELOPMENT GOALS:
Applications-

• **Increasing access through distance learning** – ICTs can provide new and innovative means to bring educational opportunities to greater numbers of people of all ages, especially those who have historically been excluded, such as populations in rural areas, women facing social barriers, and students with disabilities.

• **Enabling a knowledge network for students** – With knowledge as the crucial input for productive processes within today's economy, the efficiency by which knowledge is acquired and applied determines economic success. Effective use of ICTs can contribute to the timely transmission of information and knowledge, thereby helping education systems meets this challenge.

• **Training teachers** – Large numbers of school teachers will be needed to meet the EFA and Millennium Development Goals for education. The use of ICTs can help in meeting teacher training targets. Moreover, ICTs provide opportunities to complement on the job training and continuing education for teachers.

• **Broadening the availability of quality education materials** – Network technologies have the potential to increase the availability of quality educational materials. Their interactivity and global reach allow for customized sharing of knowledge, materials, and databases, quickly and cheaply over long geographic distances. Furthermore, online resources offer teachers access to a vast and diverse collection of educational materials, enabling them to design curricula that best meet the needs of their students.

• **Enhancing the efficiency and effectiveness of educational administration and policy** – New Technologies can help improve the quality of administrative activities and processes, including human resource management, student registration, and monitoring of student enrollment and achievement.

APPLICATION OF ICT

There are following applications of ICT

- Media

- Audio and video
- Computers, tablets and mobile devices
- Social networks
- Webcams & whiteboards
- Screen-casting
- Virtual classroom etc.

ONLINE LEARNING

Online learning environment has high expectations from an interactive experience where learners are free from inconvenient time schedules and travel to campus/institutions/schools. In online settings, collective efforts are needed to create a sense of presence or awareness.

The ability to interact with others is highly warranted in online learning. Not only do learners and instructors/ teachers have to learn how to use chat, email, threaded discussions and forums tools, they must master the new culture. Current frequent users of chat rooms and instant messaging are creating new communication dynamics with specified jargon, expression and structure. The training to become successful online participants includes conditions for establishing educational communities which give opportunities for collaborative learning

Online education is rapidly increasing and is becoming as viable an alternative as traditional classrooms. According to a 2008 study conducted by the U.S Department of Education, during the 2006-2007 academic year about 66% of postsecondary public and private schools participating in student financial aid programs offered some distance learning courses; records show 77% of enrollment in for-credit courses with an online component. In 2008, the Council of Europe passed a statement endorsing e-learning's potential to drive equality and education improvements across the EU.

Today, the prevailing paradigm is computer-mediated communication (CMC), where the primary interaction is between learners and instructors, mediated by the computer. CBT/CBL usually means individualized (self-study) learning, while CMC involves educator/tutor facilitation and requires scenarization of flexible learning activities. In addition, modern ICT provides education with tools for sustaining learning communities and associated knowledge management tasks.

Students growing up in this digital age have constant exposure to a variety of media. Major high-tech companies such as Google, Verizon, Microsoft are funding schools to provide them the ability to teach their students through technology, which may lead to improved student performance.

In higher education especially, the increasing tendency is to create a virtual learning environment (VLE) (which is sometimes combined with a Management Information System (MIS) to create a Managed Learning Environment) in which all aspects of a course are handled through a consistent user interface throughout the institution. A growing number of physical universities, as well as newer online-only colleges, have begun to offer a select set of academic degree and certificate programs via the Internet at a wide range of levels and in a wide range of disciplines. While some programs require students to attend

some campus classes or orientations, many are delivered completely online. In addition, several universities offer online student support services, such as online advising and registration, e-counseling, online textbook purchases, student governments and student newspapers. Augmented reality (AR) provides students and teachers the opportunity to create layers of digital information that includes both virtual world and real world elements, to interact with in real time. There are already a variety of apps which offer a lot of variations and possibilities.

CONCLUSION

Capacity building and ICT literacy are essential to benefit fully from the Information Society. ICT contributions to **e-learning** include the delivery of education and training of teachers, offering improved conditions for lifelong learning, and improving professional skills. The field of Mobile Learning is still in its infancy, and so it is still difficult for experts to come up with a single definition of the concept. Information and Communication Technology changes the behaviour of the students. Teachers and students are more benefited by the ICT.

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