

# “Role of ICT in Education and the importance of E-Learning as a Transforming face in our Education System”

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## ABSTRACT:

Today's world is the world of technology. Science and technology has invaded in all spheres of human life. ICT has occupied a very significant place in 21<sup>st</sup> century and without which we cannot imagine anything. Knowledge explosion is taking place at a rapid speed. Along with knowledge explosion more and more people are joining the field of education. The appearance of new technologies in our day to day life has made it possible for the use of ICT in education to increase considerably in recent years. The rapid development of ICT has affected the whole of human being. Knowledge is provided to students through different agencies like formal, non-formal, informal as well as through online system. While imparting education through online system we should recognize the importance of Information and Communication Technologies (ICT) or e-learning. The application of various ICT tools in the classroom has changed the total scenario of the teaching learning process. The use of technology in education cannot be denied. Technology in education is needed due to population explosion, knowledge explosion and because of the interventions of science and changing face of technology in the world. This article is mainly focused on the application of ICT as well as online learning in education and importance of E-Learning.

**Keywords:** ICT, E-Learning, knowledge, virtual classroom

## INTRODUCTION:

Information and Communication Technology is a field that has a wide coverage. The full form of ICT is Information and Communication Technology. It can be simply explained as the use of technology to collect information and communicate. In earlier days, people use the medium of oral communication, stored the information in memory and transmitted it orally to the user. The modern ICTs are not single technologies like the traditional technologies. They are a combination of hardware and software, media and delivery systems. ICTs have become quite popular in all walks of our life. The modern ICTs have brought a revolution in the field of business, industry, banking, agriculture medicine and so on. ICT can help in a big way to bring the existing educational systems into alignment with the knowledge –based information-rich society by providing the services of sophisticated tools, techniques and methods.

In the age of computers, the traditional method of teaching learning process has lost its significance. The innovative methods of teaching learning process are expected to execute more effectively and efficiently. It has helped the learners to avail the various tools of ICT at anytime and anywhere. ICT has already made an important impact in terms of teaching, research or administration. With the help of computer technology

studies have become more convenient and efficient for the learners. Computer Assisted Instruction (CAI) in simple terms is the instructional work carried out with the help of computers. The main purpose of CAI programme is to provide individual instruction to students keeping in view their personal abilities and interests. CAI provides a variety of methods and approaches (hardware, software, and courseware) for imparting instruction in a particular subject or topic so that all the individual learners may be able to choose a particular method or approach according to their own interest, ability and nature of the instructional material.

### **EDUCATIONAL TECHNOLOGY**

Educational technologies in education are also termed as instructional technology and information and communication technology. It is the use of various technological tools in the teaching learning process. Educational technology is closely related to the term E-Learning which refers to the use of any electronic media or means like microphones, and listening devices or audio and video tapes etc. that makes teaching-learning process more effective. Educational technology is based on three approaches of technology hardware, software and system approach. It is based on the application of scientific laws and principles to the teaching learning process. Educational technology has become an integral part of the society today. Technology in education is needed due to population explosion, knowledge explosion and because of the inventions of science and technology. Technology has to be adopted in education in order to keep the students in pace with the changing world. The field of education is highly benefited by educational technology. Reforms have occurred in student learning through their involvement in challenging tasks. It has also helped in developing professionalism in the teachers. A culture has been created which supports learning inside and outside the classroom. Educational Technology has also redefined the roles of both the teachers and the students.

### **OBJECTIVES OF THE PRESENT STUDY**

The present study was undertaken with the following objectives:

- i) To study the concept of Information and Communication Technology.
- ii) To study the merits and demerits of ICT in education.
- iii) To study importance of E-Learning.

### **METHODOLOGY OF THE STUDY**

The present study is an attempt to understand the concept of ICT in education. The study is based on secondary data and the same have been collected from different secondary sources such as books, journals, research articles, magazines etc. The nature of the study is descriptive.

**CONCEPT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**

Information and Communication Technology is a field that has a wide coverage. It extensively deals with communication technology and how it impacts on other fields of human endeavour. It is the fastest growing academic field of study and a viable source of livelihood. It is the convergence of telephone and computer networking through a single cabling system with ease of data storage, manipulation, management, and retrieval. It is concerned with database management, computer programming, and software development. Web designing, mobile application development, project management, security, networking analysis, media equipment, computer engineering, computer studies, the internet, intranet, internet protocol (IP), system software, application software, signal technology, base station management etc, are some sources of ICT.

**Advantages of ICT in Education**

The advantages of ICT in education are discussed below:

- i) ICT helps the students to satisfy their curiosity regarding various things. They also learn about the relevant sources of information, ways and means to extract required information, methods of information processing etc.
- ii) ICT helps the teachers to realize the objectives of teaching-learning. Their acquaintance with the relevant source of information in the form of books, journals, and other reading materials, audio-visual material and equipment and electronics etc. make them able to acquire necessary teaching material and techniques.
- iii) The counsellors working in schools and outside the schools in the community can be greatly benefited through ICT. They can have proper access to the various sources of information and can communicate and interact well with their clients for providing desired educational. Vocational and personal guidance as well as counselling to the students along with their parents.
- iv) ICT may help the educational administrators and planners in the task of exercising their professional responsibilities.
- v) ICT can also be of great use for the research scholars. It can help them to get the necessary information for their project.

**Disadvantages of ICT in Education**

The disadvantages of ICT in education are discussed below:

- i) ICT facilities are not available in the schools. Most of the schools are not in a position to afford the purchase, maintenance and other expenditure involved in its use.
- ii) Some teachers do not like to adopt new methodologies and ways of teaching-learning.
- iii) Sometimes even students are not in favour of transition of their role from passive listeners to active independent enquirer and discoverer.

- iv) There is a widespread ignorance about the use, applications and advantage of ICTs on the part of teachers, head of the institution and educational authorities.
- v) The school authorities and administrative personnel also sometimes resist the use of ICT in administrative matters.

## **E-LEARNING**

The full form of E-Learning is Electronic Learning. E-Learning includes services of the advanced electronic information and communication media and means like CD-ROMs and DVDs, teleconferencing, video-conferencing, computer based conferencing, e-mail, live chat surfing on the internet, online reference libraries etc. E-Learning has now entered the field of teaching-learning process just like e-mail, e-banking and e-commerce.

### **Importance of E-Learning in Education:**

E-Learning has great potential to help the teachers and students in all types of academic tasks whether theoretical or practical. E-Learning must be introduced in every educational institution. The importance of E-Learning in educational institutions is discussed below:

- i) E-Learning has great potential to make the education, instruction and learning opportunities provided to the learners adaptable to their needs-mental and skill level local needs and resources at their hands.
- ii) The presence of an instructor is not required and learners can decide their own time and pace for learning.
- iii) Unlike traditional classroom education, e-learning can cater to different styles and promote collaboration among students from different localities, different learning cultures, regions, states and countries.
- iv) E-learning platform provides an opportunity to quickly make technical concepts and communicate to a much wider audience at a faster pace.
- v) E-Learning provides immediate results and feedback, in case if a student is not able to score properly in a particular unit they are requested to re-read the chapter and go through assessment again.
- vi) E-Learning through audio-visual recording technology has a unique advantage of providing learning experiences that can be paused and reversed for observing, learning and imitating at the will and convenience of the learners. Such self-pacing provides a special weightage to the process of learning.

## **SMART CLASS**

A Smart Class is technically-upgraded classroom that provide education by introducing digital teaching and learning methods for both the teachers and the students by coordinating latest advancements in technology

with academics. The objectives of such classrooms are to invoke interest in education among the student by introducing them to real-time e-learning with help of audios and videos, multimedia, images, online web conferences, PPT presentations, 2D & 3D animations, etc.

Smart class technology ensures that education reaches every student with different level of understanding equally. Moreover implementing this kind of classroom education enhances student teacher interaction and collaboration. A digital board is the most common example of smart equipment usually implemented in educational institutions, especially in schools, to teach with videos, presentations, etc. It acts as a large white tablet replacing the traditional backboard with a touch screen and the chalk with a smart pen, which educators use to write on the white board.

Unlike Virtual classroom, smart classes tend to concentrate more on in-classroom teaching and learning techniques. Additionally, coordinating this education technology with internet provide students the opportunities of web-based online learning with computers and smart gadgets as well as sophisticate the instructors with innovative teaching tools to teach virtually with interactive programs.

### **Advantages of Smart Classes**

- i)** Improves student-teacher interaction and communication.
- ii)** Real-time blended teaching and learning.
- iii)** Gives students a better understanding of concepts.
- iv)** Introduces students and instructors to education technology.
- v)** Improves visualization and creativity.
- vi)** Provides students a better in-classroom experience.
- vii)** Encourages e-learning and Virtual Classroom.
- viii)** Improves academic performance of students thereby enhancing their mental and physical development.
- ix)** Online web-based learning.
- x)** Student tend to learn at their own pace.
- xi)** Easy-to-use and accessibility.

### **Disadvantages of Smart Classes**

- i)** Creating presentations, videos and programs are difficult.
- ii)** Expensive and complex to implement.
- iii)** High maintenance costs.
- iv)** Devices such as computers, digital boards, etc. are fragile and not easy to operate.
- v)** Highly dependent on electricity requires proper network connectivity such as LAN, WAN, Internet, etc.

## COMPUTER ASSISTED INSTRUCTION(CAI)

The following methods or forms instruction are used to apply CAI programme in the learning process:

- i. **Tutorial Method:** In this method, information is presented in small units and questions are asked at the end of every unit. The responses of students are evaluated by the computer and it gives them immediate feedback. Thus, in this method, students get ample chance to learn according to their own abilities and speed.
- ii. **Drill method:** In this method, the computer teaches' the students through examples. Students try to learn the concepts through these examples and retain them. If they are unable to learn the concept by studying one example they are given another example. This drilling continues till all the students acquire full mastery over the concept or type of problem. When a correct response is given by the student, he or she receives reinforcement from the computer and is instructed to proceed to further.
- iii. **Discovery method:** A problem is presented before the student here. The computer asks him or her to find out the solution to the problem by applying the process of trial and error. Since the problem is presented through examples, this method is based on inductive method of teaching.
- iv. **Play method:** In this method, knowledge is imparted to students through various recreation activities including different types of games. This method is suitable especially for small children.
- v. **Problem solving method:** In this method, the computer presents a problem before the students in such a manner that they are compelled to reflect on it till they arrive at the solution through reflective thinking. Some prompts are also given by the computer to help a student solve the problem.
- vi. **Enquiry method:** In this method, the computer answers those questions of learners which are already stored in the computer.
- vii. **Extra creativity:** Students are taught by this method to create new drawings, pictures or sketches on the screen or to write letters on the screen in a stylized manner.

## CONCLUSION

As evidenced in the discussion above, ICT is a very instrumental tool in education as a career. The specific tools of ICT used in education in as discussed above include the use of ICT in distant-learning, storage of student performance and other relevant information in databases and storage media, use of tools of ICT in classroom like projectors, iPads and the like. Since the invention of the internet and subsequent popularity of computers, a lot of functions of education as a career have been made simpler.

These include administration of continuous assessments, marking of continuous assessments, giving feedback to students and even checking the originality of the ideas expressed in the assignments and examinations. All in all, the impact that ICT has had in educational institutions is so much that school life without ICT is somehow impossible for people who are accustomed to using ICT.

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