ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN ENHANCMENT OF TEACHING - LEARNING

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Abstract

Now a days, Information and Communication Technology (ICT) plays a very significant role in our daily activities. The ICT has innovated teaching–learning process. One of the goals for integrating ICTs in education is to enhance teaching-learning practices thereby improving quality of education. Considering that ICT plays an increasingly important role in society, especially if we take into account social, economic and cultural role of computers and Internet, it is clear that the time has come for the actual entry of ICT in the field of education. The combination of ICT and the internet certainly opens not only many opportunities for creativity and innovation, but also for approaching the teaching material to current generation of students. Technology saves time and gives students access to powerful new ways to explore concepts at a depth that has not been possible in the past. ICT helps the learner to share learning resources and spaces, promotes learner centered environment for cooperative learning and enhances creative thinking and problem-solving skills. ICT based education is the direction towards which the whole world is progressing.

Teaching-Learning and ICT are now an integral part of our daily life, including the teaching-learning process. The present paper focuses on 'the study of Role of Information and Communication Technology (ICT) in teaching and learning process with the prime objectives (i) To understand the innovative practices through ICT (ii) To analyze the Components of ICT (iii) To discuss the role of ICT.'

Keywords: Information and Communication Technology (ICT), Teaching-Learning.

Introduction:

Now a days the changes brought about by new technology had a significant effect on the life of people living in every corner of the globe. Hence the traditional process of teaching and learning in education has been replaced by new and emerging technologies. Information and Communication Technology (ICT) is having a major impact on all areas

of education- curriculum, methods of teaching, classroom learning etc. Rapid communication with increased access to Information and Communication Technology (ICT) at home, work-place and educational institutions has made education a life-long process. ICT helps in promoting opportunities of knowledge sharing throughout the world. These can help teachers and students in gaining up-to-date information and knowledge. For effective teaching and learning right information is necessary. Information and Communication Technology (ICT) is a set of tools that can help the right people with the right information at the right time. Present conceptual paper highlights the importance of ICT in educational sector and impact of ICT on classroom teaching.

ICT is bound to rule our present and our future for engaging the education sector. Through computers and the Internet, technology have undoubtedly revolutionized the field of education. It plays an important role in this field. The student teacher interaction has drastically changed since the introduction of technology-based class structure. The teacher is no longer the center of the classroom but rather a middleman between information and student. Instead of a being passive listener, the students now become active in gaining, rearranging and displaying information.

Meaning and Definition of ICT:

The abbreviation ICT stands for Information and Communication Technology. According to (Ajayi, (2008)), It is defined as a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information. Then (Voogt & Pelgrum, 2005; Watson, 2006) explained ICT as being divided into two main approaches in education such as; ICT for education and ICT in education. ICT for education implies the development of information and communication technology for learning and teaching purpose while ICT in education involves the adoption of general components of information and communication technology in practical use in teaching and learning processes.

Need of the Present Study:

Teaching and Learning are life-time processes, they have no limit of when to start and stop. Learning helps in gaining knowledge, new experiences in our everyday life, thus changing

our way of thinking, living and judging human behaviour for better development. Through education students are getting various types of information.

- ✓ Information and Communication Technology (ICT) has the ability of speeding up information delivery so this ability can be used in improving teaching-learning environment.

- ✓ Teachers and students are using various ICT to achieve specific academic goals. Information technologies have reduced the cost of education. For example, the increased use of internet broadband makes it easy for Teachers and students to access academic information on time. Also, teachers use this broadband internet to create and deliver information using videos and graphic illustrations for effective process.

- ✓ ICT enables teachers and students to communicate with each other through electronic email.

- ✓ ICT speeds the transfer and distribution of information. Through online examinations students are getting degrees which make them fit for better employment.

- ✓ In this pandemic outbreak educational institutions publish their results online so students need not have to wait for long to know about their performance.

- ✓ ICT also facilitates group discussion, webinars, seminar presentations. ICT has changed the way pupil learns through introduction of audio-visual techniques in education for continuous education in the corona pandemic outbreak.

- ✓ Information and Communication Technology (ICT) can help the teachers, learners, researchers, administrators, and educational planners to get access valuable treasure of knowledge, skill and application for improving their own tasks.

- ✓ Distance learning, virtual classrooms, e- learning and m-learning are the latest concepts and trends that are emerging in educational horizon of our country.

Characteristics of Information Technology:

- ✓ Acquisition, Storage, manipulation, management, transmission or reception of data or information.
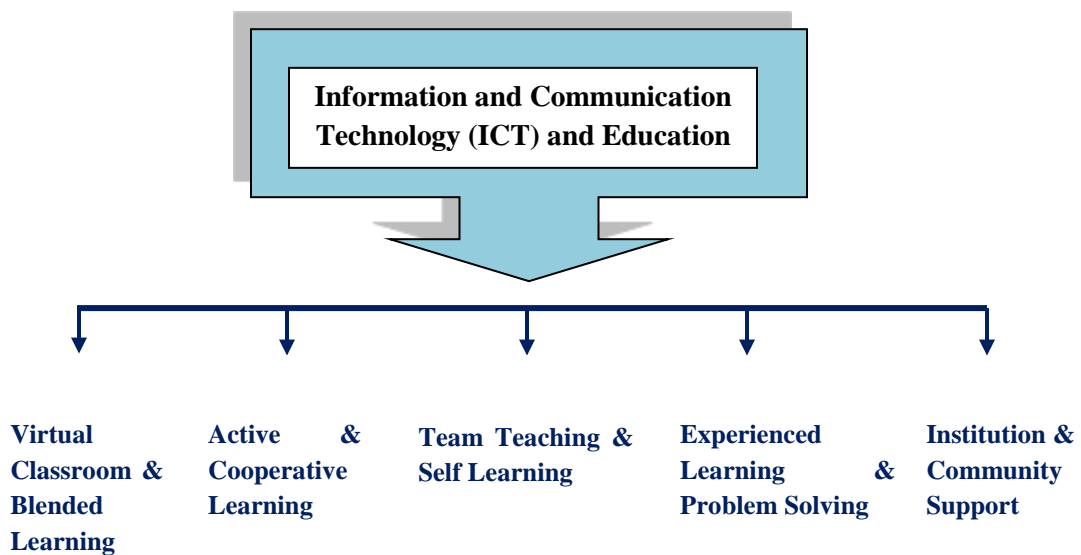
- ✓ Real time access to information.

✓ Easy availability of updated data

✓ Connecting Geographically dispersed regions

✓ Wider range of communication media

Objectives of the Study:

    1. To understand the innovative best practices through ICT in Teaching-Learning.

    2. To analyze the Components of ICT in Teaching and Learning.

    3. To discuss the role of ICT in Teaching-Learning.

Information and Communication Technology (ICT) and Education Process:

Globalization and technological changes have created a new global economy powered by technology, fueled by information and driven by knowledge. The emergence of this new global economy has serious implications for the nature and purpose of educational institutions. As the access to information continues to grow rapidly, schools cannot be contented with the limited knowledge to be transmitted in a fixed period of time.

Information and Communication Technology (ICT) and Education

Virtual Classroom & Blended Learning	Active & Cooperative Learning	Team Teaching & Self Learning	Experienced Learning & Problem Solving	Institution & Community Support

ICT-based education is about using computer and technology as tools to enrich teaching-learning. They have to become compatible to the ever-expanding knowledge and also be equipped with the technology to deal with this knowledge. Information and communication technologies (ICTs) - which include radio and television, as well as newer digital technologies such as computers and the Internet - have been proven
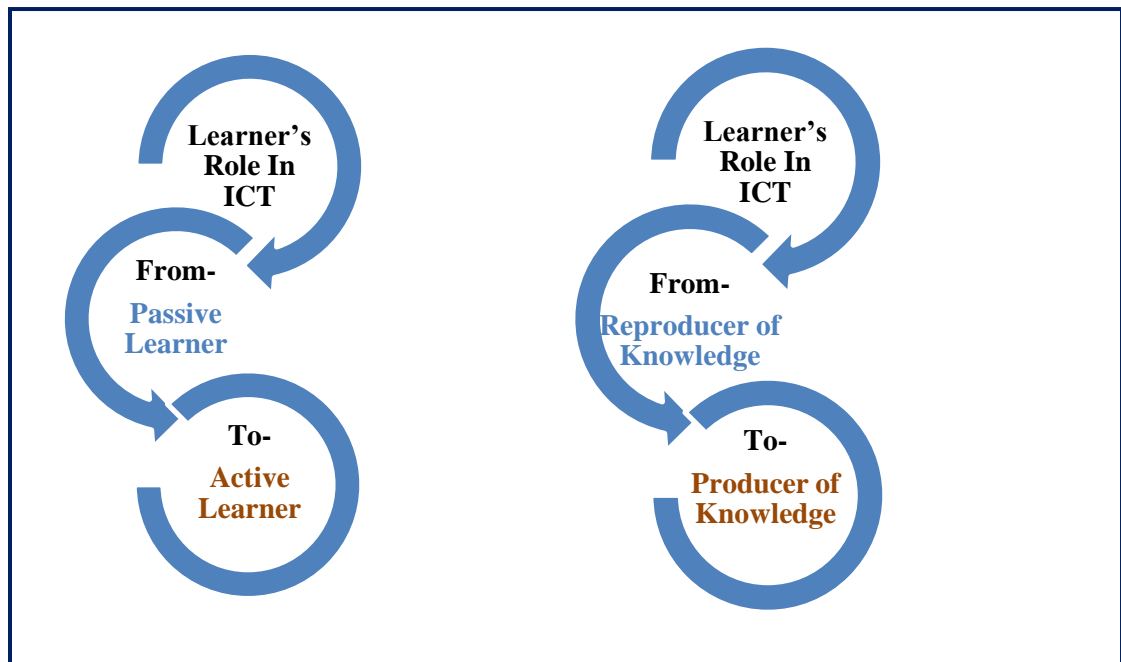
as potentially powerful tools for educational change and reform. When used appropriately, different ICTs can help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by helping make teaching and learning into an active process connected to real life.

Teaching and Learning and Education:

Shifting the emphasis from teaching to learning can create a more interactive and engaging learning environment for teachers and learners. This new environment also involves a change in roles of both teachers and learners. The role of the teachers will change from knowledge transmitter to that of facilitator, knowledge navigator and sometime as co-learner. The new role of teachers demands a new way of thinking and understanding of the new vision of learning process. Learners will have more responsibilities of their own learning as they seek out, find, synthesize, and share their knowledge with others. ICT provides powerful tools to support the shift from teacher centered to learner centered paradigm and new roles of teacher, learner, curricula and new media.

The major shifts have been described in a tabular form below.

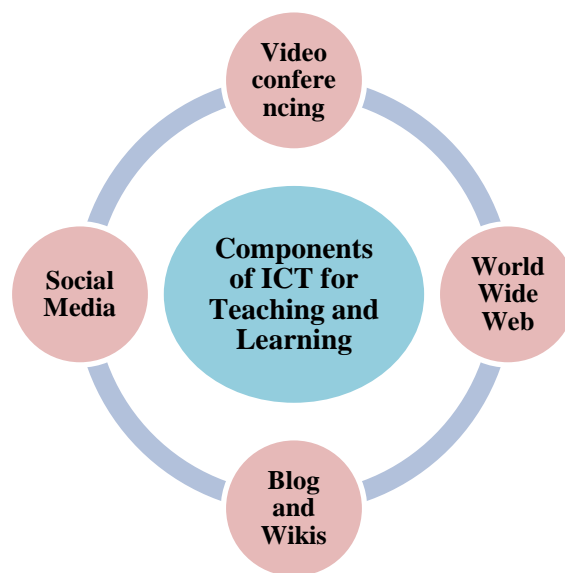**Changes in the Learner's Role In ICT:**

These concepts and application of ICT in learning and teaching demand a new learning environment to effectively harness the power of ICT to improve teaching-learning. ICT has the potential to transform the nature of education like where, when, how and the way learning takes place. It will facilitate the emergence of responsible knowledgeable society emphasizing life-long learning with meaningful and enjoyable teaching and learning experiences; the move from reproductive model of teaching and learning to an independent, autonomous learning model that promotes initiatives, creativity and critical thinking with independent research. Learners are expected to collect, select, analyze, organize, extend, transform and present knowledge using ICT in authentic and active learning paradigm of Education. Interactive, experimental and multimedia based delivery system. ICT helps teachers and learners to communicate and collaborate without boundaries, make learners autonomous and allow teachers to bring the whole world into classroom activities, especially the concept of on-line programs.

Components of ICT for Teaching and Learning:

Modern society is becoming too intricate as well as education has become increasingly complex, with more and more information communicated to the student. In creating this new teaching-learning environment, ICT offers numerous contributions to increase the interaction and reception of information. ICT is being utilized in every part of life.

Following are the Components of ICT for Teaching and Learning.-

a) **Video conferencing:**

It is a two way communication system. It is also called teleconferencing, it's the use of television video and sound technology (webcam) between people in different locations. It can be used to give and receive lectures irrespective of the location of teachers or learners.

b) World Wide Web:

The World Wide Web, known as www, w3 or simply the web, is one of the several internet resources developed to help, publish, organize and provide access to information on the Internet. The web was first developed by Tim Berners Lee I 1989 while working at CERN

C) Blog and Wikis:

Blogs and wikis are fundamentally web2.0 and their global proliferation have enormous implication for libraries and also in teaching and learning process. Blogs may indeed be a greater milestone in the history of publishing than web pages. They enable the rapid production and consumption of web based publications. Blogs contain posts some time similar to journal entries, from a person or a group. The posts are dated and listed in reverse chronological order. People can comment on posts as well as provide links to related sites, photos and blogs. Wiki is an online collaborative writing tool. According to (Richardson, 2006) a wiki is a collaborative web space where anyone can add content and anyone can edit content. That has already been published Wikis are designed to help groups collaborate, share and build online content and are especially useful for learners who are separated by time and place.

D) Social Media:

Social media are perhaps the most promising and embracing technology. They enable messaging, blogging streaming media and tagging. Some most commonly used social media are My Space. Facebook, Delicious, Frappr and Flickr networks that have enjoyed massive popularity in web 2.0. It is based on web2.0 technology. My Space and Face book enable users to communicate with each other, Del.icio.us enables users to share web resources and Flickr enables the sharing of pictures. Frappr is a bit of a blended network, using maps, chat rooms and pictures to connect individual.

Role of Teacher:

Teachers play a vital role in the success of any program at the education. If the teachers are not fully comfortable and confident with the new approach to teaching, then there will be a limited impact on the teaching- learning process. Teachers have to develop their mind set to integrate the latest technology in the classroom teaching. Teachers should also know the right attitude and values, besides being proficient in skills related to teaching. Teacher is responsible for creating the warm environment in the class. He prepares the learning opportunities that helps the students in using the lessons of communication technology. Consequently, it is crucial that all the teachers should be prepared to provide their students with these opportunities. ICT helps the teachers to acquire the basic skills and competencies to become a good teacher. ICT acts as the gateway to acquire more information which helps the teacher to become update.

Outcomes:

ICT plays very significant role in Teaching-Learning. Following are the outcomes of using the ICT in Teaching-Learning.

1. Science Teachers have a more favorable attitude than Arts/Social Science background teachers towards Information and Communication Technology (ICT).

2. Assist seniors in accessing digital information efficiently and effectively.

3. Support undergraduate-centered and self-directed learning.

4. For educational enhancement through ICT Produce a creative learning environment.

4. Promote collaborative learning in a distance learning situation.

5. Offer more opportunities to advance critical (higher-order) thinking skills for Education.

6. Support teaching by facilitating entrance to course content.

7. Most of the teachers have a favorable attitude towards ICT.

Conclusion:

1. The use of ICT in Education helps in developing critical and scientific thinking among the students and the teachers. It motivates the learner to participate in learning activities at any time and from anywhere.

2. ICT in Education helps in exchange and shares ideas among teachers for professional growth.

3. ICT has also been used to improve access and the quality of teacher training. ICT tools enhance teaching, and facilitate learning using multimodal courseware, Integrate ICT using pedagogical innovations to develop higher-order thinking skills among learners.

4. ICT tools such as radio, T.V., Internet, computer, laptop, tablets, and many other hardware and software applications can be appropriated in the teaching-learning process. These tools can give benefits in the areas of content, curriculum, instruction, and assessment.

5. In India, mainly education has three levels that are primary or elementary level, secondary and senior secondary level, and higher level. The quality of all these levels can be adjusted by the use of ICT tools and techniques.

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