



Information Communication Technology in Education

K. Ratheeswari*

Department of Value Education, Tamilnadu Teachers Education University, Chennai – 97, Tamil Nadu, India

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*Corresponding author

Abstract

Information communication technologies (ICT) at present are influencing every aspect of human life. They are playing salient roles in work places, business, education, and entertainment. Moreover, many people recognize ICTs as catalysts for change; change in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research, and in accessing information communication technologies. In this digital era, ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills. ICT improves teaching and learning and its importance for teachers in performing their role of creators of pedagogical environments. ICT helps of a teacher to present his teaching attractively and able to learn for the learners at any level of educational programmes. Today in India teaching training programmes making useful and attractive by the term of ICT. Information and Communication Technologies (ICTs) exemplified by the internet and interactive multimedia are obviously an important focus for future education and need to be effectively integrated into formal teaching and learning – especially in a teacher education institution.

Keywords: Communication, technologies, education

Introduction

ICT stands for “Information and communication technology”. It refers to technologies that provide access to information through telecommunication. It is similar to Information Technology (IT) but focuses primarily on communication technologies. This includes the internet, wireless networks, cell phones and other communication mediums. It means we have more opportunities to use ICT in teacher training programmes now days and improve quality of teacher for teach effectively. According to UNESCO “ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters”. Teacher is the main part of the educational field in our society. He more works for the improvement level of our society in the every field. Skilled teachers can make the creative students in form of the good social worker, politician, poet, philosopher etc. for the society. Teachers can play a friendly role with the learner. The rapid development in technology has made creatively changes in the way we live, as well as the demands of the society. Recognizing the impact of new technologies on the workplace and everyday life, today’s teacher education institutions try to restructure their education programs and classroom facilities, in order to minimize the teaching and learning technology gap between today and the future.

ICTs are making dynamic changes in society. They are influencing all aspects of life. The influences are felt more and more at schools. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forcing schools aptly respond to this technical innovation.

Operational definition of terms Information Communication Technologies (ICT) in this review article refers to the computer and internet connections used to

handle and communicate information for learning purpose.

E learning: is a learning program that makes use of an information network- such as the internet, an intranet (LAN) or extranet (WAN) whether wholly or in part, for course delivery, interaction and/or facilitation. Web-based learning is a subset of e learning and refers to learning using an internet browser such as the model, blackboard or internet explorer (Tinio, 2002).

Blended Learning: refers to learning models that combines the face-to-face classroom practice with e-learning solutions. For example, a teacher may facilitate student learning in class contact and uses the model (modular object oriented dynamic learning environment) to facilitate out of class learning.

Constructivism: is a paradigm of learning that assumes learning as a process individuals “construct” meaning or new knowledge based on their prior knowledge and experience (Johassen, 1991). Educators also call it the emerging pedagogy in contrast to the long existing behaviourism view of learning.

Learner- centred learning environment: is a learning environment that pays attention to knowledge, skills, attitudes, and beliefs that learners bring with them to the learning process where its impetus is derived from a paradigm of learning called constructivism. In the context of this article, it means students personal engagement to the learning task using the computer and or the internet connection.

To effectively harness the power of the new information and communication technologies (ICTs) to improve learning, the following essential conditions must be met:

- Students and teachers must have sufficient access to digital technologies and the Internet in their classrooms, schools, and teacher education institutions.

- High quality, meaningful, and culturally responsive digital content must be available for teachers and learners.
- Teachers must have the knowledge and skills to use the new digital tools and resources to help all students achieve high academic standards.

Generation of teachers to effectively use the new learning tools in their teaching practices. For many teacher education programmes, this daunting task requires the acquisition of new resources, expertise and careful planning. In approaching this task it is helpful to understand:

- the impact of technology on global society and the implications for education
- The extensive knowledge that has been generated about how people learn and what this means for creating more effective and engaging student-centred learning environments
- The stages of teacher development and the levels of adoption of ICTs by teachers
- The critical importance of context, culture, leadership and vision, lifelong learning, and the change process in planning for the integration of technology into teacher education
- The ICT competencies required of teachers related to content, pedagogy, technical issues, social issues, collaboration, and networking
- The importance of developing standards to guide implementation of ICTs in teacher education
- The essential conditions for successful integration of ICTs into teacher education
- Important strategies to consider in planning for the infusion of ICTs in teacher education and managing the change process.

The document provides a framework for ICTs in teacher education and describes the essential conditions that must be met for successful technology integration. It offers case studies illustrating the variety of approaches that may be used in integrating ICTs into teacher education and provides guidelines for the development of a high quality strategic technology plan. Lastly, it discusses the importance of planning and managing the change process and building a broad base of support among all stakeholders to achieve the goals of integrating ICTs into the teacher education programme

Information Communication Technologies in Education

ICT helps to keep pace with the latest developments with the help of different technologies included in it.

www – *www* stands for world wide web which is one of the most important and widely accepted services (like IRC, E-mail etc.) of the Internet. Its popularity has increased dramatically, simply because it's very easy to use colourful and rich content.

According to Dennis P. Curtin (2002): -

“Web is a series of interconnected documents stored on computer sites or websites”.

E-learning– E-learning is also known as online learning. E-learning encompasses learning at all levels both formal and non-formal that uses an information network– the Internet, an intranet (LAN) or extranet (WAN). The components include e-portfolios, cyber infrastructures, digital libraries and online learning object repositories. All the above components create a digital identity of the user and connect all the stakeholders in the education. It also facilitates inter disciplinary research.

Group Discussion – Internet Relay Chat (IRC) is among the popular Internet service people mostly use for live chatting. Group of people with common interest can exchange views / opinions with each other instantly through Internet. Description of the internet technologies required to support education via ICTs (www, video conference, Tele-Conference, Mobile Conference, CD Database, Word-Processor, Intranet, Internet etc.)

E-Modules – Modules written are converted and stored into digital version into a computer using word processor accessible by the user through internet.

Teleconferencing

1. *Audio – Conferencing* – It involves the live (real-time) exchange of voice messages over a telephone network when low – band width text and still images such as graphs, diagrams or picture can also be exchanged along with voice messages, then this type of conferencing is called audio-graphic. Non-moving visuals are added using a computer keyboard or by drawing / writing on graphics tablet or whiteboard.

2. *Video – Conferencing* – Video Conferencing allows the exchange not just of voice and graphics but also of moving images. Video-Conferencing technology does not use telephone lines but either a satellite link or television network (broadcast / cable).

3. *Web – Based Conferencing* – Web-based conferencing as the name implies, involves the transmission of text and graphic, audio and visual media via the internet; it requires the use of a computer with a browser and communication can be both synchronous and asynchronous.

4. *Open and Distance Learning* – All these services availed through ICT plays a great role in teacher education. It allows higher participation and greater interaction. It also improves the quality of education by facilitating learning by doing, directed instruction, self-learning, problem solving, information seeking and analysis and critical thinking as well as the ability to communicate, collaborate and learn.

Conclusion

The use of such technology in teaching training programmes the quality of teaching will increase effectively. A well-designed teacher training program is essential to meet the demand of today's teachers who want to learn how to use ICT effectively for their teaching. It is thus important for teacher trainers and policy makers to understand the factors affecting effectiveness and cost-effectiveness of different approaches to ICT use in teacher training so training strategies can be appropriately explored to make such changes viable to all. So if use of ICT in teaching training programmes by the institute of conducting teaching training programmes, our teaching learning process will be

too smooth and able to understand for every type of students of our country. Finally, more attention should be paid to specific roles of ICT in offering multimedia simulations of good teaching practices, delivering individualized training courses, helping overcome teachers' isolation, connecting individual teachers to a larger teaching community on a continuous basis, and promoting teacher to teacher collaboration. Intended outcomes as well as unintended results of using ICT for teacher professional development need to be explored.

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