



ORIGINAL ARTICLE

Role of ICT in Teacher Education

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ABSTRACT

This paper focuses on the concept of ICT in teacher education and attempts to develop a framework for conceptually engaging with education. In this paper author assesses that no innovation or change can be implemented without teachers. The quality and efficiency of education depends on quality of teacher education. Even today our classroom processes are mostly based on chalk and talk, thus there is an immediate need for orienting the teachers in ICT skills and program. The teachers should be trained in the use of modern tools if ICT and online electronic resources. Technology based learning can be viewed as an innovative approach for delivering well designed, learner centered, interactive and facilitated learning environment to anyone are anyplace, anytime by utilizing the attributes and resources of various digital technologies along with other form of learning materials suited for open and distributed learning environment.

Keywords: ICT, Learning Environment, Teacher Education

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INTRODUCTION

Teacher Education in an important area of concern in our education system. Numerous policies are framed and committees, commissions were established to improve and change the status of teacher education. As teacher education is an important area of concern a comprehensive, dynamic and responsive system in the contexts of teacher education is required for the development of education in general. Thus, education In order to enable the teachers to act as catalyst in the presses of developing the future citizens, the teachers' education programme needs to be revised and revamp from time to time. 21st century is the age of liberalization, privatization and globalization. In this context, quality assurance the is demanded everywhere and quality comes from quality education. A teachers forms a education system. Therefore, this fact should always be kept in mind that, it is the teachers educators who have to take the responsibility of quality reforms at the grassroots and it is only the ICT based education which ensures quality reforms by the teacher educators because human resource are more important for any kind of development as compared to other resources. Modern world is a world of technological revolution and as every revolution reflects every aspect of human life and affects it immensely, It is needless to say that education has also been influenced by these technological advances. In today' world teachers need to be equipped not only with subject specific expertise and effective teaching methodologies but with the capacity to assist students to meet the demands of the emerging knowledge based society keeping this in View there is an increasing need to incorporate ICT based education to need the challenges of globalization.

COMPUTER TECHNOLOGY IN TEACHING AND LEARNING

The computer is now regarded as a super-teaching machine. Its use in education has been tried as an innovation and it has proved its teaching efficiency in many developed countries. Teaching about computer makes students understand what computers do, what computers cannot do, and how computers could be used to facilitate learning. Computers can be employed in schools in three generic ways. They can be used as a learning tool, as the object of the study and as a planning and management tool for teachers or school administrators. Nowadays computers are used in the classroom as a support

system to improve the teaching-learning process. It is also possible to use the computers to teach new skills or concepts, to provide remedial teaching, to facilitate development of creative thinking and problem solving. Its other uses are evaluation of students' performance and classification of children according to the ability, preparation of timetables and schedules, allocation of learning materials according to individual needs and interests, maintenance of progress cards efficiently and confidently, providing information data for guidance and reference, provision for direct interaction between pupils and subjects in tutorial work, engaging students in tutorial work and providing immediate feedback to students for better interaction and motivation. Teachers' work can be made easier and faster with computers. Computer-Enhanced Instruction (CEI) refers to using computers to bring additional dimensions to traditional teaching methods. This includes using computers to create instructional materials, slide shows, videotapes, worksheets, tests, bulletin board materials, rewards, incentives, games, and displays. It also includes using computers to increase personal productivity through grade-book programs and word processing programs. Teachers who use computers in these ways find that instruction is indeed enhanced. They are more productive, more organized because of the thought and planning required, and more efficient because of better record keeping. The learning environment is more appealing when materials are neatly and professionally generated. Finally, students generally have more positive impressions of teachers when they use computer in the classroom. Computer can be used as enabling tools for all students including students with special needs. Students who have difficulty with writing, spelling, mathematics, organization, and sequencing find that computers make these tasks easier. We can use applications such as word processing programs, database programs, spreadsheets, and graphics programs as instructional tools. Such applications may help students overcome programs that interfere with learning. In the teaching-learning process, evolution of computer has passed through many stages. Application of computers in education has been identified by different authors and has been named i.e., Computer-Based Education (CBE), Computer Managed Instruction (CMI) and Computer- Aided Instruction (CAI).

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN EDUCATION

The emergence of technology has been further applied to information, which has revolutionized the process of the transmission of information. Sharing and interchanging information such as knowledge, mental skills, motor skills and attitudes through the use of mass media especially electronics. Achieving success in this sharing and interchanging through communication which consist of Receiving, i.e., hearing or seeing; Accepting as nothing can change unless information is accepted and Getting some Action, i.e., changing performance or behavior. Data Processors which are a key component in Information Technology in the processing of data. In the Communication Technology, at present, the wealth of information that is being transferred across the Internet is impressive. Various mechanisms, the World Wide Web (www) browsers, email and news groups have been established to allow people to access, send or retrieve information across the world. The Internet browsers like Netscape and MS Internet Explorer enable - searching, viewing and displaying the information to any person interested in anything. Pre-service training for secondary stage is all the more important because secondary education is a link between elementary and higher secondary stage of education and occupies a crucial position in the system of education, as general education terminates here and the students at this level prepare for making choices through appropriate diversification of courses like professional, arts and science courses. At this stage, we need a vision to equip our students to meet the emerging trends. The survival of this category of students in the present high-tech and competitive society will only be through the knowledge of ICT. It has influenced all aspects of Teacher Education. It provides the capacity to store, to retrieve and to process e-content both fast as well as accurate. ICT is the scientific and technological discipline, which deals with collection, storing, dissemination of information to the individual or group. ICT involves primarily the storage and communication of information. The world is converted into minute global capsule and anyone desirous of information would find it only a click way. ICT is a technology that aids in storage of data, retrieval as and when required, telecommunication, browsing for information and saves time, effort, paper, money and resources. ICT represents one of the current applications of technology in Teacher Education. "Information and Communication Technology (ICT) is the scientific, technological and engineering discipline and management techniques used in information handling and processing, their application; computers and their interaction with men and machines and associated social, economical and cultural matters" (UNESCO). According to Toomy, "ICT generally relates to those technologies that are used for accessing, gathering, manipulating and presenting or communicating information" It means ICT applied to the creation, storage, selection, transformation and distribution of information of many kinds. So ICT is a comprehensive term that includes any communication device or application such as radio, television, cellular phones, computer and network, hardware and software of ICT, satellite systems

as well as the various services and applications associated with them, such as videoconferencing and distance learning. The application of ICT is mainly purposed on the teaching-learning process. The application of ICT provides vast array of powerful tools that may help in transforming the present isolated, teacher-centered and text-bound classroom into rich In 1998, the UNESCO in its World Education Report "Teachers and Teaching in a Changing World" described the radical implications of ICT in the conventional teaching-learning pm. Now in the present situation, ICT has become an important integral part of the curriculum of Teacher Education. The following essential conditions must be met for the effective use of 101' in the teaching-learning process. Student and teachers must have sufficient access "to digital technologies and the Internet in their classrooms, schools and Teacher Education institutes; High quality, meaningful and culturally responsive digital content must be available for teachers and learners. Teachers must have knowledge and skills to use the new digital tools and resources to help all students achieve high academic standards. The use of ICT can make substantial change in education and training mainly in two ways. Firstly, The rich representation of information changes learner's perception and understanding of the content. Secondly, the vast distribution and easy access to information can change relationship between teachers and students. ICT can also provide powerful support for educational innovations. By using ICT technologies such as Computer, Laptop, Digital Camera, Video, Internet, Websites, CD-ROMs, DVDs, application of software such as word-processing, spreadsheet, e-mail, digital libraries, computer mediating conferencing, videoconferencing, projectors etc. we can overcome all barriers in communication and instruction. ICT can be used as a tool for training and support of teachers, regardless of geographical dispersion. Therefore, the challenge for teachers and Teacher Education institutions has been to create a new generation of teachers capable of employing a variety of technology and tools in all

Use of ICT to Teachers

1. ICT enhances the initial preparation by giving good teaching and training materials, use of simulators, recording and feedback in teaching.
2. With the help of ICT, teachers can access with colleagues, schools, institutions and universities, expertise, rich resources in cyber space.
3. ICT enables interaction with students over a physical distance.
4. Didactic software and intelligent tutoring systems can dramatically reduce the cost of teacher training.
5. ICT provides lifelong professional development by providing courses in a virtual situation, training on demand, orientation and refresher courses through videoconferencing and online.
6. ICT facilitates sharing of ideas, experience as well as collaborating on projects, and exchange materials through virtual communities.

Computer-based teaching programs facilitate

- a) Dynamic visual presentation
- b) Provision for rehearsal of basic skills
- c) Improvement of learning and understanding
- d) Access to data and information sources and saving of staff's tutorial time

Information Technology in effect has the following advantages:

Information Technology enables grater imaginative understanding through increased access to information and new ways of accessing and communication information.

It gives the individual the power to take risks and make mistakes that are costly in terms of time/material.

It provides new forms and structure for representing knowledge and individuals' relationship with it.

It increases the opportunity for interrelation and application of data.

It provides opportunity to develop clear logical thinking, sequential understanding and study skills.

It changes the nature of composition and authorship because the forms of composition are more numerous than they have been and the facility to combine original and second hand material and integrate different media.

It enables the recording process to take place while it is being used.

It enhances the learner's capacity to reflect upon and the teachers' opportunity to intervene in the learning

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