



USES OF ICT IN TEACHER EDUCATION

Anjali Monga

Principal, Swami Dayand College of Education, Lerha Bega, Bathinda


Abstract

Teacher education system empowered by ICT-driven infrastructure can have a great opportunity to come up to the center stage and ensure academic excellence, quality instruction and leadership in a knowledge-based society. The teacher training experience that used ICT to develop a project that involved teachers and also children, parents and other members of the educational community. Its aim was to build an Internet site that would give information about school life. It's an open web space where teachers, parents and students can express and share their ideals and activities. The progress of ICT is being developed in three interconnected phases: conception, development and evaluation. The most important issue to relate is that the technical or instrumental learning is dependent on the ideas and purposes of teachers, students and parents. We believe that when we talk about ICT in schools and also in teacher education, we shouldn't only be concerned with the 'means', that is to say, how to introduce computers or how to use a word processor and Internet resources, but also with the 'ends'.

INTRODUCTION

IT was limited only to the textual mode of transmission of information with ease and fast. But the information not only in textual form but in audio, video or any other media is also to be transmitted to the users. Thus, the ICT = IT + Other media. It has opened new avenues, like,

Online learning, e-learning, Virtual University, e-coaching, e-education, e-journal, etc. Third Generation Mobiles are also part of ICT. Mobile is being used in imparting information fast and cost effective. It provides e-mail facility also. One can access it anywhere. It will be cost effective. The ICT brings more rich material in the classrooms and libraries for the teachers and students. It has provided opportunity for the learner to use maximum senses to get the information. It has broken the monotony and provided variety in the teaching – learning situation. The ICT being latest, it can be used both at school and higher education levels in the following areas:

- 
- Teaching
 - Diagnostic Testing
 - Remedial Teaching
 - Evaluation
 - Psychological Testing
 - Development of Virtual Laboratory
 - Online Tutoring
 - Development of Reasoning & Thinking
 - Instructional Material Development

All pre- service and in-service teacher education programs should include intensive training in the use of modern tools of ICT, including off line and on-line electronic resources such as CD ROMs, Multimedia, internet and the World Wide Web (www.). Information and Communication Technology (ICT) is a subject in education , and a part of the National curriculum .With this regard ICT can be viewed as an effective vehicle “to transform classroom learning into learning communities with students, teachers and community members all playing a vital role in directing the course of education.”

Aims and Objectives of ICT in Education:-

- **Utilitarian aims**
- **Social aims**
- **Cultural aims**
- **Personal aims**

(a) The utilitarian aims of ICT in education are:-

- ✚ To help the teachers become competent and confident users of ICT who can make efficient, effective and creative use of basic application software in their everyday activities; and,
- ✚ To encourage the teachers to become critical and reflective users of ICT who can evaluate the capabilities and limitations of the technology and of social, technical, political, ethical, organizational and economical principles associated with its use; and,
- ✚ To prepare the teacher for the society of tomorrow by making them adaptable users of ICT who have the necessary openness and flexibility of mind to be able to adjust to future changes in the technology.

(b) The social aims of ICT in education are:-

- ✚ To encourage the teacher to develop the appropriate social skills that are essential for co-operative and collaborative learning based around ICT; and,
- ✚ To empower ICT disadvantaged teacher by ensuring sufficient access for those learners who have little out-of-school opportunities to use the technology; and'
- ✚ To facilitate better communication between the teacher thereby promoting greater social understanding and harmony; and
- ✚ To ensure equity between all learners by providing appropriate qualitative and quantitative opportunities to overcome social and learning disadvantage.

(c) The cultural aims of ICT in education are:-

- ✚ To help the teacher appreciate the richness of our culture heritage by facilitating access to all aspects of our unique culture; and,
- ✚ To help the teacher become cultured citizens of the modern world by facilitating the discovery and appreciate of the cultural heritage of various countries around the world.

(d) The personal aims of ICT in education:-

- ✚ To encourage the teachers to develop the appropriate personal skills that are essential for independent learning based around ICT; and,
- ✚ To assist the teacher to develop their potential to their fullest by facilitating the acquisition of knowledge; by helping the learner concentrate on higher order cognitive tasks rather than on lower order routine tasks and by positively affecting the attitude of the learner towards further learning; and,
- ✚ To help the teacher with special needs integrate themselves within school and social by increasing their independence and by developing their abilities and interests.

Objective of ICT in teacher Education:-

- ✚ To develop, maintain and stimulate teacher's curiosity, interest and enjoyment in ICT.
- ✚ To develop appropriate ICT skill, concept, principles, methods and vocabulary both in the teachers.
- ✚ To show teachers the wide-ranging and flexible nature of the use of ICT.
- ✚ To ensure progression in the acquisition of ICT skills.
- ✚ To enable all teacher to have equal access to ICT.
- ✚ To encourage a spirit of helpfulness amongst teacher.
- ✚ To allow teacher to develop transferable skills and informed opinions about their use of ICT and support these with reasoned arguments.
- ✚ To encourage all subject teachers to see how ICT and their subject expertise fit together to enable the teaching of ICT as well as how ICT can support and enhance their own scheme of work.
- ✚ To recognize that ICT is an essential part of the overall development plan of the curriculum.

Need and Importance of ICT in teacher Education:-

ICT in education is the foundation upon which a country develops. It is a dynamic force in the life of every individual influencing his physical, mental, emotional, social and ethical development. It is a complete development of the individual of a child enabling him to make original contribution to human life. Teachers have always played a crucial role in preparing communication and societies towards exploring new horizons and achieving higher levels of progress and development. Recognizing the growing importance of ICT in the education area, policy making in the teacher education sector following can be achieved by using ICT;

1. Create relationships between active learning and active teaching.
2. Develop an appreciation and an understanding of the potential of technology.
3. Learn to be authors of multimedia software.
4. Develop leadership skills and become role models for successful integration.
5. Understand the power of technology integration.
6. Develop ownership of the technology through authentic experiences.
7. Learn to motivate students with technology.
8. Achieve success by becoming informed and reflective decision makers.
9. Learn the benefits of technology in the classroom.
10. Developing ICT skills
11. Improve communication between students-tutors/ lecturers
12. Bridging gaps between mentors in school- teacher trainees- educational institutions
13. Identifying specific strengths and weakness of technology resources

14. Using on-line information resources for collaboration and communication; collaborating with others to build content-related knowledge bases.
15. Developing strategies to find relevant and appropriate electronic information sources.

Approaches to ICT Integration in Teacher Education:-

Use of ICT within teacher-training programs around the world is being approached in a number of ways with varying degrees of success. These approaches were subsequently described, refined and merged into four primary approaches as follow.

- ❖ **ICT skills development approaches:-** Here importance is given to providing training in use of ICT in general. Student-teachers are expected to be skilled user of ICT in their day-to-day activities. Knowledge about various software and their use in education process is provided.
- ❖ **ICT pedagogy approaches:** - This approach emphasizes on integrating ICT skills in respective subjects, drawing on the principle of constructivism, pre-service teachers design lessons and activities that centre on the use of ICT tools that will foster the attainment of learning outcomes. This approach is useful to the extent that the skills enhance ICT literacy skills and the pedagogy allow student to further develop and maintain.
- ❖ **Subject-specified approach:** - Here ICT is embedded into one's own subject area. By this method teachers not only expose students to new and innovative ways of learning, but also provide them with a practical understanding of what learning and teaching with ICT looks and feels like. In this way, ICT is not an 'add on', but an integral tool that is accessed by teachers and students across a wide range of the curricula.
- ❖ **Practice-driven approach:** - Here the emphasis is on providing exposure to use of ICT in practical aspects of teacher training also emphasizing on developing lessons, assignments etc. using ICT and implementing these in their practical work experience at various levels, the students are provided with an opportunity to access the facilities available at work place and effectively use their own skills to manipulate these facilities.

Impact of ICT on teacher-Education and Student Teacher:-

1. It acts as the gateway to world of information and enables teachers to be updated.
2. For professional development and awareness of innovative trends in instructional methodologies, evaluation mechanism etc.
3. For effective implementation of certain student – centric methodologies such as project-based learning which puts the students in the role of active researches and technology becomes the appropriate tool.
4. It is an effective tool for information acquiring – thus students are encouraged to look for information from multiple sources and they are now more informed then before.

5. It has enabled better and swifter communication presentation of ideas is more effective and relevant.
6. The dissemination of ideas to a larger mass now seems possible due to technology.
7. Student-teachers are transformed into self learners.
8. ICT creates awareness of recent methodologies and thus teacher educators feel empowered.

ICT Training Inputs for Teachers and Teacher- Education:-

For the successful implementation of ICT, teacher training, teachers and teacher-education need to be trained in the following dimensions. The commercially available training programs are designed to provide exposure only to system software, some of the application software and the basics of internet.

1. **Awareness phase:-** The input should be to make the teachers aware of the importance and possibilities of ICT-the current trends and future projections.
2. **Learning theories and technology integration:** -Traditional and modern view of learning, shift from teaching to learning, constructivism, role of ICT in lifelong learning.
3. **Basic hardware skills:** - Experiences in operating the different kinds of hardware skills like the use of PC, storage devices- like CD Rom drive, Floppy drive, flash drive etc. and using skills of input and output devices and display devices.
4. **Understanding system software:** - Features of desktop, starting an application, resizing windows, organizing.
5. **Using application/productivity software:** - word processing, spreadsheet, database, presentation, publishing, creation, of portable Document Format (PDF) file, date loading etc.
6. **Using multimedia:** - Exposure to multimedia CD ROMs in different subjects, installing programs, evaluating CD ROMs, approaches to using CD ROMs, creating multimedia.
7. **Using of internet:-** E-mail, communities, forums, blogging, wiki:
8. **Pedagogical application of ICT tools:-** Specific use of application software in different subject, appropriate ICT tools and pedagogy, Unit plan integrating ICT tools, approaches to managing ICT-based learning groups, assessment of learning, electronic portfolio and assessment rubrics, creating teacher and student support material supporting student with specific needs.
9. **Introduction to open source software:-** Concept, types, advantages, working on open sources application software.
10. **Social, legal, ethical, health issues:-** Advantages and limitation of computer use, privacy violation, copyright infringement, plagiarism, computer security (hacking, virus, misuse, abuse and staying safe) healthy use (seating, light, sound, radiation, exercise)

11. **ICT for professional and personal productivity**:- ICT for administration, record keeping, reporting and transfer of information, attendance, research, careers, in computer and professional development opportunities.

Conclusion:-

Teaching is becoming one of the most professions in our society where knowledge is expanding rapidly and much of it is available to students as well as teachers at the same time. As new concept of learning have evolved, teacher are expected to facilitate learning and make it meaningful to individual learners rather than just to provide knowledge and skills modern development of innovative technologies have provided new possibilities to teaching professions, but at the same time have placed more demands on teachers to learn how to use these new technologies in their teaching. This experience should that it is possible with computer and internet to develop a wide range of training activities for teachers. At present there is a shortage of qualified and competent teachers in all most all subjects at all levels. Not only this, even the instructional material available in the print form is not of quality. This is because many authors have written on those topics that they have never read and / or done research. Sometime the information given in the books is also wrong. The book reading is not very enjoyable and does not help students in understanding the concepts and retaining the information.

There are many teachers who are well known for the specific subject. Their lectures should be digitalized and made available to all the users. It will enhance the quality of instruction in the classrooms. The teacher can use them in the classrooms and can organize discussion after it wherein the new points can be added both by the teacher as well as students. It will make the teaching effective, participatory and enjoyable. Sansanwal (2006) has done this. Sansanwal has developed digitalized lectures on Research Methodology and Statistics and has used it for teaching this subject at master's level. Other researchers are also using it. Of course, digitalized lectures will have their limitations of revision and inbuilt interaction. These lectures can be uploaded on any website and students & teachers can access any lecture they like.

Another form of digitalized lectures is e – content. The CEC is making efforts to develop e – content material in different subjects for the benefit of diverse users. The competent teachers can develop e – content in their own areas of specialization. This has lots of

potentiality to bring quality in teacher education. The ICT can be used in developing Instructional Material and e-Content.

REFERENCES:-

- [1] Basset, P. (March 2005): Seven surprises for school leaders, Education Week
- [2] Bates, A.W. (1995): Technology, Open Learning and Distance Education, Routledge, New York
- [3] Elmore, R.; Burney, D. (1999): Investing in teacher learning, in Teaching as the learning profession, 236-91 , Jossey-Bass, San Francisco
- [4] Fullan, M. (1993): Change forces, Routledge Farmer, London
- [5] Fullan, M. (2001): The new meaning of educational change, Teachers College Press, New York
- [6] Hargreaves, A. (2003): Teachers in a knowledge society, Teachers College Press, New York
- [7] Browning, C.A., & Klespis, M. (2000). A reaction to Garofalo, Drier, Harper, Timmerman, and Shockey. Contemporary Issues in Technology and Teacher Education, 1 (2). Retrieved April 20, 2011, from <http://www.citejournal.org/vol1/iss2/currentissues/mathematics/article1.htm>
- [8] Thomas. Contemporarys Issues in Technology and Teacher Education, 2(1). Retrieved January 28,2010, from <http://www.citejournal.org/vol2/iss1/general/article1.cfm>
- [9] Reil, M & Fulton, K “ Technology in the Classroom, Tools for Doing Thing Differently or Doing Different Things”, America Educational Research Association, San Diego.1998