



---

## INTEGRATION OF ICT IN TEACHER EDUCATION

**Dr. Savitri Sharma**

Assistant Professor

Department of Education

M.L.S.M College Sundernagar

Information and communication technologies are a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. ICT can be broadly defined as including interactive Radio and Multiple Media including T.V. as well as computer and hand held electronic devices.

These process lie at the very heart of Education. In recent years, education access to digital ICT, tolls, applications, networks and media worldwide has grown dramatically. Educational systems around the world are under increasing pressure to use the new information and communication technologies to teach students the knowledge and skill they need in 21<sup>st</sup> century.

Modern developments 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 . Teacher Education Institutions are faced with the challenge of preparing a new generation of teachers , to effectively use the new learning in their teaching practices. This daunting task in the Teacher Education Programmes requires the acquisition of new resources , expertise , developing technology proficiency and careful planning.

### **NEED OF ICT IN PRESENT SCENARIO:-**

The challenge for Teacher Education is to assure that the new generation of teacher , as well as current teacher , are well prepared to use new learning methods , processes and material with the new ICT tools for learning . ICT also approaches quality assurance . The quality of Teacher Education institution and its programme is often judged by the performance of the teacher they produce. Demonstrated competence of Teacher candidates in use of ICTs in Teacher Education has become increasingly important in making accreditation , certification and programme review decision ,. So there is a need to harness to power of new ICTs and use it positively , consciously and with design in order to meet defined learning needs.

### **1. PREREQUISITES FOR EFFECTIVE IMPLEMENTATION OF ICT:-**

If the Teacher are to use information so that others can learn from them teachers must be information literate. Teachers cannot prepare their students to be information literate unless they themselves understand how to find and use information. Information literacy refers to the ability to access, evaluate and use information effectively . It calls for a wide range of skills , including the ability to use information



, to solve problem and make decisions, to share knowledge using appropriate formats for intended audiences, to use a variety of information resources including professional associations, to arrange books, newspapers and journals and computer based resources ( software, CD-ROM, e- mail and internet) , to adapt to new Technology and to learn independently throughout life. So it is essential that pre-service and in –service teacher should have basis ICT skill and competencies.

## **2 ACCESS TO TECHNOLOGIES:-**

Students and teachers must have sufficient access to digital technologies and the internet in their classrooms, schools and Teacher Education Institutions.

## **3 AVAILABILITY :-**

High quality , meaningful and culturally responsive digital context must be available for teacher and learners.

## **4 LEADERSHIP:-**

Teacher Education Institutions and programmes must provide the leadership for pre-service and in- service teacher and model the new pedagogies and tools for learning . They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs and economic conditions with the country.

## **5 DEVELOPMENT OF STRATEGIES:-**

Teacher Education institutions also need to develop strategies and plans to enhance the teacher learning process and to assure that all future teacher are well prepared to use new tools for learning . The society for information technology and Teacher Education has identified basic principles for development of effective ICT Teacher education ( SITE , 2002)

Technology should be infused into the entire teacher education programme:

Throughout the teacher Education experience, student should learn about and with technology and how to incorporate it into their own teaching . Pre-service teachers education students should learn about a wide range of educational technologies across teacher and professional development.

Technology should be introduced in context:-

Teaching pre- service student's basic computer literacy is not enough. Professional literacy is beyond this and is best learned in context . Pupil teacher should learn many uses of technology . They should see their mentor teacher, model innovative uses of technology . They should use it in their own learning and they should explore creative uses of technology in their teaching .

Students should experience innovative technology supported learning.



---

## **ENVIRONMENT IN THE TEACHER EDUCATION PROGRAMME:-**

Technology can be used to support traditional forms of learning as well as to transform learning. A Power Point presentation can enhance traditional lecture, but it does not necessarily transform the learning experience. On the other, using Multi Media to teach the topics that have previously taught through lectures may well be an example of learning experience transformed by technology. Students should experience both types of uses of technology in their programme.

## **Challenges in Integrating ICTs in Teacher Education :-**

There are various challenges which need to be considered by policy makers, planners, educators and education administrators to determine the optimal level of integration of ICTs in Teacher Education. These are :-

A detailed analysis of existing system including the existing education objectives, institutional practice and arrangements especially the barriers and facilitators for ICTs integration need to be identified,

The other consideration is proper infrastructural requirements including building facility for housing technology, availability of electricity and telephony and proper security arrangement.

Skilled teachers and proper leadership is another requirement for integration of ICTs in Teacher Education.

Specification of financial resources including grants, public subsidies, private donations, community support, membership fee etc and other resources and development strategies for long term use of ICTs.

Teaching and learning material should have locally meaningful content for different regions and countries.

## **CURRICULUM FRAMEWORK FOR ICT IN TEACHER EDUCATION .**

Now, the vision is not simply of ICT but of better Education facilitated through the adoption and promotion of ICT. Communities and regions may have very limited resources, so it is important to undertake a careful analysis using an ethnographic approach to develop an organic strategy for the growth and development of Education and Teacher Education that take advantage of ICT.

In Planning for infusion of ICT into teacher preparation programmes several factors conducive to programme's success must be considered. ISTE (International Society for Technology in Education) provides a holistic framework for designing the integration of administrators to consider local infrastructure, culture and content. Technology resources among other factors those are important in planning the integration of technology into pre-service curriculum.



---

The curriculum framework is comprised of four clusters of competencies encircled by four supportive themes.

#### **Four Themes :-**

##### **Context and culture:**

Identifies the culture and contextual factors that must be considered in infusing technology in Teacher Education curriculum . It includes the use of technology in culturally appropriate ways and development of respect for multiple cultures.

##### **Leadership and vision :**

Implies that leadership and support from administration of Teacher Education for successful implementation of ICTs in Teacher Education .

##### **Planning and Management of Change:**

Planning and management change is the final theme that signifies the importance of careful planning and effective management of change process.

These themes are strategic combination of approaches that help teacher education to develop four competencies. These competencies are :

##### **Pedagogy :-**

Pedagogy is focused on teacher's institutional practice and knowledge of the curriculum as well as the individual approach of teacher linked with their subject discipline . The adoption of ICT by teacher should challenge and support changes in teaching practice and extend teacher learning.

##### **Collaboration and Networking:**

ICT potential helps is support communication between learning groups and beyond classrooms. The teachers's role expands to that of a facilitator of collaboration and networking requires-respect for diversity, including inter-culture education and equitable access to electronic learning resources.

##### **Social Issue:-**

The power to access ICT brings increased responsibilities for everyone. Legal and moral codes need to be extended to respect the intellectual property of freely accessible information. The challenges faced by society, locally and globally by adoption of technology example, prolonged engagement with ICTs (including screens and keyboards) requires appropriate support for the body. Especially hands and back. Similarly, hazards of electricity and other powers sources require care and the modeling of safe practice.

##### **Technical Issue:**

This is an aspect of life long learning theme through which teacher update skills with

---



hardware and software as new generations of technology emerge.

The above discussion Model illustrates the interdependence of themes and competencies-all themes interacting with all competencies. Use of the framework will be helpful for Teacher educators and Administrators when planning for infusion of ICTs.

Effective integration of ICT with pedagogies require empowering teachers to develop knowledge skills and positive attitude towards integrating ICT in teaching and learning which is possible only through Teacher education programmes encompassing both Pre-service as well as In-service programmes.

To live, learn and work successfully in an increasingly complex and information rich society, the use of ICT is unavoidable. Teacher education institutions may either assume leadership role in transformation of education or be left behind in the swirl of rapid Technological change.

Success of Technology in Teacher Training.

UNESCO has shown in its guidelines that for proper implementation of ICT's in teacher education, the following indicators may be helpful in the success of the efforts made for promoting ICT into the teaching learning process:

Shared Vision	There is proactive leadership and administrative support from the entire system.
Access	Educators have access to current technologies, software, and telecommunications networks.
Skilled Educators	Educators are skilled in the use of technology for learning
Technical Assistance	Educators have technical assistance for maintaining and using the technology.
Content Standards and Curriculum Resources	Educators are knowledgeable in their subject matter and current in the content standards and teaching methodologies in their discipline to learning
Assessment	There is continuous assessment of the effectiveness of technology for learning.
Community Support	The community and school partners provide expertise, support, and resources.
Support polices	School and university policies, financing , and rewards structures are in place to support technology in learning.

These ten indicators are to be looking into and followed for excellence in teacher education or we can say that “The potential benefits of technology can only be achieved if policy planners & teacher educators and aware of the importance and



specific contributions to must not refer Technology Integration as an optional, superfluous activity, “to be done when we have time. “Instead, They Must Adopt An Attitude of “Cultural, Sociological, Pedagogical And didactic Awareness to Understand The Future Make-up of Schools, Students, And Their Curriculum”.

***References:-***

1. Arora, G.L. (2002). School Experience Programme and Quality in Teacher Education, <http://www.ncte-in.org/glalron.htm>.
2. Bhatia, R. (2005). ICT Enabled Teacher Education, University News, 43 (22), May 30-June06.
3. Davis, N. (1999). The Globalisation of Education Through Teacher Educationk with New Technologies: A view informed by Research Through Teacher Education with new Technologies” AACE Journal.1 (12), pp. 8-12 Charlottesville, VA: AACE. [http://www.editlib.org/index.cfm?fuseaction=Reader:viewAbstract&paper\\_id=8116](http://www.editlib.org/index.cfm?fuseaction=Reader:viewAbstract&paper_id=8116).
4. Hawking , R.J. (2002) Ten Lesson for ICT and Education in the Development World, Ch.4, the world Bank institute. [http://www.cid.harvard.edu/cr/pd/gitrr2002\\_ch04.pdf](http://www.cid.harvard.edu/cr/pd/gitrr2002_ch04.pdf)
5. Jager A.K. and Lokman A.H. (1999) Imacts of ICT in Education. The role of the teacher and teacher training, <http://leeds.ac.uk/educol/documents/00001201.htm>.
6. Zhiting Z. and Hanbing Y. (2000). ICT and Pre Service Teacher Education: Towards an integrated Approach [http://www.2.unescobk.org/elib/publications/aceidcom//ICT Preservice. pdfp](http://www.2.unescobk.org/elib/publications/aceidcom//ICT%20Preservice.pdf)