

## **Using ICT in Teacher Education**

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### **Abstract**

This paper attempts to examine and explore the possibilities of quality improvement in Teacher Education using INFORMATION COMMUNICATION TECHNOLOGY. Studies of ICT development around the world reveal that many of the countries interested to accept ICT curriculum at the school as well as teacher educational levels are in the early stages of development in commerce, industries and particular society. Teacher education institutions are faced with the challenge of preparing a new generation of teachers to effectively use the new learning tools in their teaching practice. For many teacher education programmes, this duty task requires acquisition of new resources and careful planning. Thus it is designed to provide a guide to help teacher educators and policy makers, infuse, or integrate ICTs into teacher education.

### **Introduction:-**

India is such a large country and education is the backbone of our country. We are also advanced and progressive to spread our specialties in various sectors like science, business, technology, hospitality, communication and education. India is stepping towards the title of 'super power' and to contribute to the process of this advancement it is necessary to produce the quality teacher educators. Today's teacher has number of responsibilities and his/her role in fostering the student centric learning is becoming wider and wider. So to perform the multifarious task and other responsibilities with good performance is the demand of the world. Even teacher workload issues are also concerned with ICT so one should make it strategy instead of a technique of teaching.

"Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change" (UNESCO, 2002).

Education systems around the world are under increasing pressure to use the new information and communication technology to reach students the knowledge and skills they need in the 21<sup>st</sup> century. This technology included computers, internet, broadcast technologies [Radio-Television] and telephony.

ICT is the gift of information technology and communication technology to the human kind. It is estimated that the contribution of knowledge led to the development of ICT will double the global GDP (ICT) and exemplified by the internet and interactive multimedia are obviously of great significance for education.

When used appropriately different ICT are said to help expand access to Education. strengthen The relevance of Education to the increasingly digital workplace and raise educational quality by among other. helping to make teaching into and engaging active process connected to real life. Thus it is designed to provide a guide to help teacher Educators, administrators and policy makers infuse interute or embed ICT is into teacher Education.

### **Objectives:**

- ICT is a gateway of the world of information to keep teacher educator regularly in update.
- To make teacher educator innovative and aware of current trends in instructional and evaluation methodologies.
- To feel the teacher educator empowered while dealing with larger mass with dissemination of ideas.
- To make teacher educator a facilitator who can interrelate technology with human, pedagogical, social, financial, ethical, scientific issues and their deep understanding.

### **Different type of ICT**

There are so many types of ICT used teacher Education latest digital technologies are evolving and conveying rapidly, some of these are,

“Use of ICT in Teacher Education” will include:

- i. CAL (Computer Assisted learning)
- ii. PBL (Project Based Learning)
- iii. CAI (Computer Assisted Instructions)
- iv. CBT (Computer Based Testing)
- v. CALL (Computer Assisted Language Learning)
- vi. IRCT (Internet as a Research and Communication Tool)

- Multimedia pc laptop notebooks digital video still camera on-line learning, e-learning local area networking and other networking and other networking mobile phone.
- (World wide web)www cd-rom and email and chat blended learning(combination of class room teaching)(on-line learning and web based training) digital libraries.
- Computer mediated conferencing virtual reality Application of software such as word processing spread sheet, power point and simulation and speech recognition etc.

This type technologies are very commonly use in teacher Education, Educator teachers should be aware of the some issues before the use of different ICT in teaching process,

### **Integration of ICT in Teaching and Learning**

While the potential of technology to offer creative opportunities for individual and collaborative learning for Educators is no longer the subjects of debate the realities of Education in the developing countries include the fact that computers in Educational institution are in adequate, connectivity is limited and expensive and most other technology resources are unevenly distributed. The burning question here is can technology in this context still promote the best practices in and design elements of high quality professional development?

### **The Uses of ICTS in Education**

Education policymakers and planners must first of all be clear about what educational outcomes (as discussed above) are being targeted. These broad goals should guide the choice of technologies to be used and their modalities of use.

The potential of each technology varies according to how it is used. Haddad and Draxler identify at least five levels of technology use in education: presentation, demonstration, drill and practice, interaction, and collaboration.

Each of the different ICTs—print, audio/video cassettes, radio and TV broadcasts, computers or the Internet—may be used for presentation and demonstration, the most basic of the five levels. Except for video technologies, drill and practice may likewise be performed using the whole range of technologies. On

the other hand, networked computers and the Internet are the ICTs that enable interactive and collaborative learning best; their full potential as educational tools will remain unrealized if they are used merely for presentation or demonstration. ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” [4] These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.

### **How Have Radio and TV broadcasting been used in Education?**

Radio and television have been used widely as educational tools since the 1920s and the 1950s, respectively. There are three general approaches to the use of radio and TV broadcasting in education:

- direct class teaching, where broadcast programming substitutes for teachers on a temporary basis;
- school broadcasting, where broadcast programming provides complementary teaching and learning resources not otherwise available; and
- general educational programming over community, national and international stations which provide general and informal educational opportunities.

The notable and best documented example of the direct class teaching approach is Interactive Radio Instruction (IRI). This consists of “ready-made 20-30 minute direct teaching and learning exercises to the classroom on a daily basis. The radio lessons, developed around specific learning objectives at particular levels of maths, science, health and languages in national curricula, are intended to improve the quality of classroom teaching and to act as a regular, structured aid to poorly trained classroom teachers in under-resourced schools.” IRI projects have been implemented in Latin America and Africa. In Asia, IRI was first implemented in Thailand in 1980; Indonesia, Pakistan, Bangladesh and Nepal rolled out their own IRI projects in the 1990s. What differentiates IRI from most other distance education programs is that its primary objective is to raise the quality of learning—and not merely to expand educational access—and it has had much success in both formal and non-formal

settings. Extensive research around the world has shown that many IRI projects have had a positive impact on learning outcomes and on educational equity. And with its economies of scale, it has proven to be a cost-effective strategy relative to other interventions.

Mexico's Telesecundaria is another notable example of direct class teaching, this time using broadcast television. The programme was launched in Mexico in 1968 as a cost-effective strategy for expanding lower secondary schooling in small and remote communities. Perraton describes the programme thus:

Centrally produced television programs are beamed via satellite throughout the country on a scheduled basis (8 am to 2 pm and 2 pm to 8 pm) to Telesecundaria schools, covering the same secondary curriculum as that offered in ordinary schools. Each hour focuses on a different subject area and typically follows the same routine—15 minutes of television, then book-led and teacher-led activities. Students are exposed to a variety of teachers on television but have one home teacher at the school for all disciplines in each grade.

The design of the programme has undergone many changes through the years, shifting from a “talking heads” approach to more interactive and dynamic programming that “link[s] the community to the programme around the teaching method. The strategy meant combining community issues into the programs, offering children an integrated education, involving the community at large in the organization and management of the school and stimulating students to carry out community activities.”

Assessments of Telesecundaria have been encouraging: drop out rates are slightly better than those of general secondary schools and significantly better than in technical schools.

In Asia, the 44 radio and TV universities in China (including the China Central Radio and Television University), Universitas Terbuka in Indonesia, and Indira Ghandi National Open University have made extensive use of radio and television, both for direct class teaching and for school broadcasting, to reach more of their respective large populations. For these institutions, broadcasts are often accompanied by printed materials and audio cassettes.

Japan's University of the Air was broadcasting 160 television and 160 radio courses in 2000. Each course consists of 15 45-minute lectures broadcast nationwide once a week for 15 weeks. Courses are aired over University-owned stations from 6 am to 12 noon. Students are also given supplemental print materials, face-to-face instruction, and online tutorials..

Often deployed with print materials, cassettes and CD-ROMS, school broadcasting, like direct class teaching, is geared to national curricula and developed for a range of subject areas. But unlike direct class instruction, school broadcasting is not intended to substitute for the teacher but merely as an enrichment of traditional classroom instruction. School broadcasting is more flexible than IRI since teachers decide how they will integrate the broadcast materials into their classes. Large broadcasting corporations that provide school broadcasts include the British Broadcasting Corporation Education Radio TV in the United Kingdom and the NHK Japanese Broadcasting Station. In developing countries, school broadcasts are often a result of a partnership between the Ministry of Education and the Ministry of Information.

### **What is Teleconferencing and what have been ITS Educational Uses?**

Teleconferencing refers to “interactive electronic communication among people located at two or more different places.” There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology: 1) audioconferencing; 2) audio-graphic conferencing, 3) videoconferencing; and 4) Web-based conferencing.

Audioconferencing involves the live (real-time) exchange of voice messages over a telephone network. When low-bandwidth text and still images such as graphs, diagrams or pictures can also be exchanged along with voice messages, then this type of conferencing is called audiographic. Non-moving visuals are added using a computer keyboard or by drawing/writing on a graphics tablet or whiteboard.

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

Teleconferencing is used in both formal and non-formal learning contexts to facilitate teacher-learner and learner-learner discussions, as well as to access experts and other resource persons remotely. In open and distance learning, teleconferencing is a useful tool for providing direct instruction and learner support, minimizing learner isolation. For instance, an audiographic teleconferencing network between Tianjin Medical University in China and four outlying Tianjin municipalities was piloted in 1999 as part of a multi-year collaboration between Tianjin Medical University and the University of Ottawa School of Nursing funded by the Canadian International Development Agency. The audio-graphic teleconferencing network aims to provide continuing education and academic upgrading to nurses in parts of Tianjin municipality where access to nursing education has been extremely limited. Other higher education institutions using teleconferencing in their online learning programs include the Open University of the United Kingdom, Unitar (Universiti Tun Abdul Ruzak) in Malaysia, Open University of Hong Kong, and Indira Gandhi National Open University.

### **What Does IT Mean to Learn about Computers and the Internet?**

Learning about computers and the Internet focuses on developing technological literacy. It typically includes:

- Fundamentals: basic terms, concepts and operations
- Use of the keyboard and mouse
- Use of productivity tools such as word processing, spreadsheets, data base and graphics programs
- Use of research and collaboration tools such as search engines and email
- Basic skills in using programming and authoring applications such as Logo or HyperStudio
- Developing an awareness of the social impact of technological change.

**What about Learning with Computer and the Internet?**

Learning with the technology means focusing on how the technology can be the means to learning ends across the curriculum. It includes:

- Presentation, demonstration, and the manipulation of data using productivity tools
- Use of curriculum-specific applications types such as educational games, drill and practice, simulations, tutorials, virtual laboratories, visualizations and graphical representations of abstract concepts, musical composition, and expert systems
- Use of information and resources on CD-ROM or online such as encyclopedia, interactive maps and atlases, electronic journals and other references.

Technological literacy is required for learning with technologies to be possible, implying a two-step process in which students learn about the technologies before they can actually use them to learn. However, there have been attempts to integrate the two approaches.

**Results:**

- They will become more independent learners, who do not consider the rigid/traditional methods as the sole sources of knowledge anymore.
- They will enjoy learning with the use of ICT.
- They will be able to produce the democratisation process at classroom level.
- They will stop spending considerable time and money running around libraries to look for information when given an assignment and there will be no time bothering about library hours or learning hours.
- They will be able to learn any thing at any time with out paying extra fees. They will also better able to assess educational practices and policies.
- Teacher will relate it with others as they undertake research activities together and assist each other.

**Conclusion:**

Thus, ICT is very useful in Education. And technology cannot simply be boated onto existing structures and ways of doing things. This type of technologies also use in Education but little. So we can use more technologies. The development of technical skills alone would be a very poor outcome of the potential benefits so quality learning that the technology as society changes, the skills that teacher needs to be successful in life also changes. Basic literacy skills like reading, writing, and mathematics are no longer sufficient. Our teacher need to master the skills like thinking, finding, creating, evaluating, analyzing and applying new content understanding with great flexibility. So use of ICT is the only thing which can implement and advance the teaching process more advanced.

**REFERENCES**

Mehra v. (1995) “educational technology ” new delhi, s.s. Publishers

Dr. K. Kumarasamy (2002) “information technology and teacher education” published by neelkmal publication, hydrbad.

Suppas. P. (1996) “the use of computer in education ” scientific american vol. 64-82

Anderson, R.E., & Plomp, T., (2000). ICT knowledge management competencies. <http://www.emb.gov.hk>

UNESCO, (2002). Information and communication technologies in teacher education: A planning guide. <http://www.unesco.org>