



Prepare for digital era-ICT integration in education

Dr. Goggi Gupta

Assistant Professor

Shivalk Institute of Education and Research

Phase-6 Mohali

Abstract

Countries across the world are using ICT in facilitating information dissemination and communication in all areas of education and training. Updating the technical, professional knowledge and skills of teacher is a need of the hour. Even though teacher may have master traditional pedagogies in teaching their students, the rapid changing world dictates that these are no longer sufficient. The teacher must acquire knowledge and skills themselves before they can prepare their student to meet the demands and challenges of 21st century. Opportunities to do so are increasing through both formal and non-formal channels. In order to make education meaningful, exciting and interesting and accessible to all technology must be linked with the purpose of learning. The new technology is capable of overcoming the barriers due to its importance and use in the field of education. The effective handling of ICT in the classroom by teacher will change the very nature of instructional processes. This paper mainly highlights the importance of ICT in every sphere of education so that new generation can easily face the challenges of technological world.

Key Words –ICT integration , teacher ,education, 21st Centeury.

Introduction- Indian education system is known for its special type of institutional practices where activity based learning is given top priority in teaching and learning process. When formal education system came into force, the textbooks laid a platform for traditional classroom processes in which instruction was mostly memory- oriented ; recitative methods are concerned with accumulation and reproduction of vast store of unrelated and isolated facts where memory was focal Point. Today, it has been proved that concrete experiences should form the basis of meaningful learning. Information Technology can be used to compensate for what conventional system cannot afford to offer. If this is done the reach of serious education can be extended to reach people who otherwise would have much poor quality instruction or none at all. Alternatively, Information Technology can be used in conjunction with factors that are scarce and expensive, such as highly trained and motivated teachers. This combination could lead to significant level of learning in case of developing countries.

Information and Communication Technology (ICT) has become an integral part of today's teaching- learning process . There are now educational and training institutions imparting skills in the basic and advanced concept of ICT. Besides , ICT is being used in facilitating distance learning .It is enabling online designing of courses, online delivery of courses, Computer aided teaching ,online assessment, besides management and networking of a large number of educational institutions . ICT based systems CD-based courses, online courses and digital libraries, discussion forums digital portfolios, teleconference etc. have made e-Learning a reality today.



Lim(2007) argues that activity theory could be used as critical framework to provide insights into ICT integration process in education .According to him activity theory :

1. provide a conceptual map to the major loci among the which human cognition is distributed in the learning environment, with ICT as one of the mediating tools
2. includes other people who must be taken into account simultaneously with the subject as the constituent of activity system.
3. proposes that activities are driven by something more robust and enduring than an individual goal-directed activity .
4. Consider the history and development of ICT integration process

The concept of institutionally mediated practice is very wide and has many component parts .

Wide sphere of technology in education

We have seen how technology was used as tool and got upgraded from the teaching machine to the institutional TV and related to computer and internet and Smartphones .But the traditional academic ambience, curriculum, teaching- learning and assessment, infrastructure and support services and governance have not fully utilise the benefits and opportunities offered by these advancements. Systematic changes has to be assessed in terms of its impact in all the subsystem. Education's subsystems are interrelated and that changes to anyone such as technology, require consideration of their impact on all its subsystems .The fast changes in the information, Communication and technology (ICT) sector using digital technology applications contributed to formation of trends that need in- depth studies . Distance as a barrier to communication is becoming insignificant, speech text, graphics ,and video can made available in a common digital stream – multimedia, changes in the nature of mainstream education and training to perpetual education combining work and leisure, convergence of computing and telecommunications, evolution of entertainment /infotainment as combination of education, information and entertainment and reversal of mass media revolution where the electronic messages reach specialised /unique needs of customers instead of identical masses reaching million people are the current trends.

ICT in the curriculum

Many universities have introduced programs like Technology Across the curriculum (TAC) for institutional improvement and instructional technologies to ensure that their students of different disciplines achieve a high degree of fluency in information technology and its related areas. This has been initiated by UGC and incorporated to some extent in some of the universities and colleges in India. Development of Curriculum for courses in information technology (IT) and computer applications at a minor / major level can be initiated.A number of universities have developed their courses,electives and programs in IT, computer application, data management, Analytics,Business Intelligence , Big Data Analytics ,IT as a service, Cloud computing techniques and multimedia applications. There is a need to integrate the world wide web(www) as a research tool into the curricula of various disciplines.

ICT in teaching, learning and examination-

Facilities of Technology for audio and video, text- based chat sessions ,web tours, multimedia playback, interactive whiteboard, digital boards decision making tools such as rolling and quizzing to help the group select among competing proposals, ability to record, archive, and playback sessions can be made available for teaching and learning and assessments. Computer mediated learning has advantages of access and frees learning opportunities from the restrictions of space and time. Computer conferencing,



electronic mails, threaded discussion forum, social networking media to interact with on-line learning communities, webinars ,etc. are various ways of use of technology in teaching learning .

1. ICT in Student administration

- use of electronic media for student to apply for admissions
- use of computer for student registration/ enrollment
- availability of time table/ class schedule in electronic form
- usage of computer for maintenance of attendance of students communication of academic details of students to their parents/guardians through e-media
- use of e-media for notification regarding transportation

2. Staff Administration

- Usage of computer for recruitment and work allotment of staff in the institution
- automation of attendance and leave management of staff members in the institutions
- use of electronic media for performance appraisal communication with staff using e-media
- e-circulars from the institution regarding official matters
- e-kiosks are available in the institution

3. General administration

- usage of e-media for scheduling / allocation of halls for examinations
- Dissemination of information in the institution through e-kiosks
- usage of e-media by students to apply for university examination
- usage of e-media for processing and display of result of students
- facility for student to make the fee payment electronically.

Use of Edusat

Satellites can establish the connectivity between urban educational institutions with adequate infrastructure imparting quality education and large number of rural and semi -urban education station that lack the necessary infrastructures. Besides supporting formal education, a satellite system can facilitate the dissemination of knowledge to the rural and remote population about important aspects like health, hygiene and personality development and allow professionals to update knowledge base as well .Thus in spite of limited trained and skill teacher the aspiration of the growing student population at all level can be made through the concept of tele-education. The concept of beaming educational programme through satellite was effectively demonstrated for the first time in India in 1975 -76 through Satellite Instructional Television Experiment (SITE) conducted using American Application Technology Satellite (ATS-6.) During this unique experiment, which is hailed as a largest sociological experiment conducted everywhere in various program pertaining to health ,hygiene and family planning .As of now National Institutions like IGNOU NCERT and regional Institutions like SOUs have established their PC-based interactive networks using web camera and the service is functional for video conferencing. (2V , 2A). IGNOU has established two national networks: one for primary education and teacher training with teaching end at EMPC, IGNOU .About 850 schools in 4 districts , one each in Chhattisgarh, Bihar, Madhya Pradesh and Uttar Pradesh were initially connected and network is being operated successfully since December 2005.



The great advantage of EduSat Supported networks are:

- point to point (2A,2V) communication from the teaching- end to learning end located under the footprint of a satellite beam
- the transmission can take place from any teaching end available in different part of country ;and
- the best resource person(teachers /researcher/expert) is made available to all ensuring uniformity in quality of education

These network have additional capabilities to support virtual classroom ,video on demand,national and state level repositories, online operations linking different FM radio stations for simultaneous broadcast. now ICT networks are being established througha combination of satellite and Fibre Opticconnectivity for tele- education and tele-medicine .one such example is of trans- continent Pan -African network being facilitated by India .As of now, program are being offered in Ethiopia under this initiative. The ICTs are creating advantage of cultural synergies and value added education.

In general the capacity of EduSat is being under-utilized and reasons are many; the basic perception is inconvenient timing of telecasts . From January 2008 IGNOU has begun to conduct video-conferencing between 6 pm to 8 pm .However, Our availability of outside expert with appropriate expertise After hours, Limited duration for a large number of programs/courses, and learner convenience need some serious consideration

Conclusion-The planning and implementation of use of technology has to be with the assistance of expert resource person and has to be realistic in terms of money and other resources.The major benefit for institutions could be staff development opportunities through the implementation of ICT projects in the teaching learning and evaluation roles. The teaching profile of institutions will improve as a result of external recognition of innovation through ICT integration. The benefit for staff include in involvement in the projects, job satisfaction flowing from the improved learning of their students, increased understanding and skills in the use of information technologies, improved understanding of student learning, student need and difficulties, improved understanding of their own discipline area ,enhanced enthusiasm for teaching and an increase in personal profile. The community is ultimately beneficiary of the outcome of the use of ICT spotted educationl institution as such practices will result in the improved learning The possibility of using the resources more for entertainment and non -academic purposes has to be addressed while providing the ICT facilities in the campuses .Policies and action plan to stop activities such as music and video download on such campus network need to be formulated .Equal access , copyright law, choice of software, patents and Intellectual Property Right (IPR) ant time- anywhere learning, planning and funding for education are some of the concern in the technology driven education.

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