Integrating Information and Communication Technology in Teacher Education

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ABSTRACT *Education has been considered as an important element in bringing social & political changes and for national development of any country. But the rapidness of development depends on the standards of education in the country. Teacher is the most vital component in the educational system and therefore selecting candidates with teaching aptitude and providing them sound training becomes the responsibility of teacher education institutes. Informatioin and Communication Technology involves the use of different types of hardware and software system for storing retrieving, processing, communicating, diffusing accessing and sharing of useful information for decision making in an optimized and organized way for eventual success of organization. The purpose of this paper is to explore and discuss the importance of practical work related to Information and communication technology (ICT) in the teaching and learning of teacher education.*

INTRODUCTION:

Teacher is now expected not only to inculcate knowledge regarding the content of the subject in four walls of the classroom but is expected to sustain interest of the students in the subject as well as in the teaching learning process by encouraging students thinking. Teacher has to become more of an adviser advisor, a partner to talk to. Teachers have to seek improved ways of teaching by developing new programmes and instructional strategies. Conducting various experiments and undertaking innovative practices, such as inquiry approach, simulation games, and computer-Assisted instruction and programmed learning materials. To meet the new challenges and expectations boldly and to play the role meaningfully, teacher has to teach the students not only the art of learning but also the art of living and working in a society, so teachers need to be ensure development of competencies and abilities among them.

With the advent of globalization and liberal policies, the societal fabric is under a tremendous change in terms of living, thinking and doing. The social structure is adopting and absorbing alien socio cultural practices which have a consequential effect in our school and teacher education programmes. As a result, the needs of the society have becomes so varied to be created by standard teacher education programme. Teacher education programme should enable the teachers to acquire adequate knowledge, skills, interests and attitude towards the teaching profession.

INTEGRATING ICT IN TEACHER EDUCATION: A BETTER OPTION

ICT involves the use of different types of hardware and software system for storing retrieving, processing, communicating, diffusing accessing and sharing of useful information for decision making in an optimized and organized way for eventual success of organization. Now we are in the era of e-education, e-business and e-administration in cinematic e-society. The computer, television and telephone are the media of information. It improves the efficiency of educational system by increasing the rate, depth, precision and value of learning. It has also helped to understand the learner's psychology and evolve suitable techniques of teaching and evaluation.

Today's student know many more things about technology and its hardware, at times even students help teachers in learning about technology, and they feel empowered, taking greater responsibility in the process of learning. Many teachers abroad have tried to put students work on a web page, which motivated them to work harder. Assigned task can be taken more seriously since the whole world would see their work on internet.

ICT is a tool for communication and presentation bringing teacher, students and teacher educators on a common platform for exchange of views, presentation of ideas and increase in effectiveness of presentation and feedback.

Technology is not just machines and equipments but technology is extension of human abilities, competencies and talents in using machines and equipments to get information by overcoming barriers of time, space, expenses and efforts.

SOME OBSERVATIONS

It increases students' motivation to learn making them more respective and engaged throughout the learning process. They stay on task for longer period and have fewer behavior problems and their persistence remains much greater than in traditional ways of learning.

It enables teachers also to dig deeper into the subject matter and investigate new areas of inquiry in his or her area of performance.

Good teachers can provide students a chance to excel by assigning group work and problem solving activities demanding usage of information technology. Gifted and intelligent students can do wonder given a chance to show their potentialities and creativity.

It envisages more informal interaction and conversation between teachers and students and among the students themselves.

Technology helps teachers to become a facilitator and a guide for students to learn by exploring more and more opportunities through various exposures of ICT.

Helps achieving equity in education in terms of getting accessibility to high quality learning materials designed by the top ranked experts and thereby removing regional disparities in education that also reinforces self initiated autonomous learning.

A student can feel comfortable while studying his lesions before a computer terminal without any fear for the physical presence of teacher or peers, need not feel unnecessarily concerned about his scores, grade or ranks while taking formative tests, e.g. CAI which enhances one's self confidence and self esteem.

A human teacher may feel fatigued irritated or frustrated sometimes due to variety of situational as well as extraneous factors, where as computer can instruct the student on demand any time and any number of time with same efficiency to enable a studeny learn what he is supposed to learn.

Even the low achievers react better towards technology and internet base tools than with traditional approach of teaching. Some times in a traditional classroom situation a child with learning difficulty feels ignored or unwanted due to teachers lack of adequate attention towards him. It is practically impossible on the part of human teacher to give due attention to all students in a usually overcrowded classroom. A teacher may not have sufficient time at his/her disposal to give a mandatory reinforcement to all students all the time, which is a technical principle of teaching learning. Under such circumstances machines like computers or Computer Assisted Instructional packages do not make any distinction between bright and dull students so far as giving them instructions or feedback are concerned.

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VARIOUS WAYS TO INTEGRATE ICT IN TEACHER EDUCATION:
Innovations in information technology and telecommunications have changed the type of people required. Quality of education has to be global and the educational standards have to be raised at all levels and made comparable with the best in the world. So the system needs to prepare such men power which can face the challenges of this changing world scenario where technology touches every aspect of one's life.

In teachers education institutions the teacher educators and student teachers will be continuous learners and will be able to apply the knowledge in the schools. Teacher has to be adaptive to absorb or imbibe the new technologies and pedagogy. Whatever the improvement or new adoption that made in the teacher education program should percolate down to the schools via teachers. The schools thus should be the best beneficiaries at final stage otherwise there is every possibility of staying all the new technologies at higher level of education only.

By providing opportunities to student teachers to use information technology tools and information sources to analyze process and present information for their assignments in practically oriented work as well as in their method courses assignments.

Guest faculty can be invited through lecturers, discussions, seminars, workshops and conferences, to give various exposures of integrating ICT with the subject to be taught at school level.

Practical work assignment even for at least one topic in each compulsory course can be assigned, asking for collecting maximum information through internet, and exploring various worldwide educational websites. Eg. for understanding structure of education at national and state level, and role of various agencies student – teachers can visit websites of NCTE, NCERT, SCERTS, UGC etc. and can get information regarding their functionaries.

For teaching the subjects like "Education in emerging Indian society", technology can be best utilized for depicting various pictures representing different races of the society and even problems and the role that education can play best in meeting them all.

Various slides can be prepared and power point presentation, can be made for teaching various " Principles and techniques of teaching" as one of the compulsory course,

Method courses dealing with the subjects to be taught at school level, need to integrate ICT to a greater extent indicating concrete illustrations and examples from the subject matter of the content.

Computer devices combined with telecommunication networks i.e. internet and multichannel television networks, CD ROMs are some of the tools that can be used very effectively in the classroom by teacher educator. Progress has to be observed from usage of classroom aids like slide projectors, overhead projectors and LCD projection to tools like the audio, video tapes, radio and television broadcasts, cable television, education through satellite, video conferencing, CD ROMs for large capacity data storage. Educational material can be prepared and stored in computers, graphics, animation, music, speech and video interactivity is also possible through computers.

During the simulation and practice teaching student – teachers can be given the feedback with help of audio tapping or video recording. That enables student – teacher to analyze his teaching behavior critically and objectively, so will land to desired behavior modification.

Computer assisted instructional packages can be developed for various course content of teacher education program which will thereby inspire teachers to prepare the same for the content matter of various school based subjects.

Not only for teaching learning process in the classrooms but use of computers and latest technology in setting of question papers, use of CCTV at the time of conducting examination, for preparation of report card, increases and ensures transparency in evaluation and examination system, ICT could be substantially fair and objective towards students irrespective of their caste, creed, color and intellect.

NECESSARY TRAINING TO BE PROVIDED TO TEACHERS
In order to explore the potential of information technology it is necessary to enhance the awareness among the intended users, which can be created among students and teachers by designing special courses to offer them for

providing training and education in different area of educational and information technology.

To make teaching – learning process productive incorporation of scientific techniques by resorting to use of television, overhead projectors, and computers not merely us 'aids' or supplementries to make teaching process more meaningful but also self instructional materials can be initiated. To incorporate these media into teaching, teachers need, time guidance, support and the eligibility to experiment.

Teachers can be trained for such integration by various ways like, distance education, open University mode, use of electronic media and satellites like radio, television, talk back through satellite etc.

Teachers need to be trained to use ICT to present share and exchange their ideas with others even through satellite based communication technologies such as television, fax machines, e – mails, cyber space, internet etc.

Teachers need to be trained to find and use appropriate stored information, with the help of ICT based models, create sequences of instructions, plan, to control devices and achieve specific outcomes, generates, develop and organize their work and evaluate student task.

Needs of users are to be considered and addressed, teachers should be trained to select appropriate information sources and ICT tools to prepare educational kit for dealing with specific tasks taking into account ease of use and suitability in relation to the content are of subject matter.

The use of nearby cyber cafes for practice on contract basis can be explored initially. Tying up with private bodies for providing in-service course. At nominal cost is also another option.

Inspire of being challenging tasks we cannot neglect it, in order to complete in the global market. To make the student self seeker of knowledge, teacher education institutions will have to take leadership in providing the requisite skills by modifying its course and curriculum in order to accommodate the inculcation of such skills in teacher trainees.

CONCLUSION
Finally we conclude that, Higher education institutions must adopt an institution wise information and communication technological (ICT) strategy to avoid the obsolescence and large maintenance cost in education institutions. ICT investments in higher education institutions in support of teaching, research, and community engagement which are essential for developing and retaining competitive advantage in the knowledge economy.

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