COMPETENCY OF ICT IN TEACHING, LEARNING PROCESS

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1. Introduction

The 21st Century learning is the process whereby digital natives utilise the power of modern technology to learn anything, anytime and anywhere. Classrooms are no longer necessarily defined by rigid walls, as hybrid learning models blend the virtual with the physical into a truly engaged and collaborative educational experience. Effective teaching in the 21st century must be student centred and must infuse technology into the learning experience for both rigour and relevance and emphasise higher order thinking skills. Education is for a change. The aim of education has varied from time to time but the main objective of any education is to improve the mental quality of a student. Technology of education is being developed with the aim not only making education more widely available but also of improving the quality of available education. The use of computer based instruction to improve teaching, learning has wide spread acceptance in education.

2. ICT Competency for Teachers

2.1 Integration of teaching skill

Today's classroom teachers must be prepared to provide technology-supported learning opportunities for their students. Being prepared to use technology and knowing how that technology can support student learning must become integral skills in every teacher's professional repertoire.

2.2 Effective Teaching: Teachers must be prepared to empower students with the advantages of technology. Schools and classrooms, both real and virtual, must have teachers who are equipped with technology resources and skills and who

can effectively teach the necessary subject matter while incorporating technology, concepts and skills.

2.3 Use of Resources in teaching: Real-world connections, primary source material, and sophisticated data-gathering and analysis tools are only a few of the resources that enable teachers to provide unimaginable opportunities for conceptual understanding.

2.4 Skill development: Traditional educational practices no longer provide prospective teachers with all the necessary skills for teaching students, who must be able to survive economically in today's workplace.

2.5 Problem Solving: Teachers must teach students to apply strategies for solving problems and to use appropriate tools for learning, collaborating, and communicating. The problem is not necessarily lack of funds, but lack of adequate training and lack of understanding of how computers can be used to enrich the learning experience.

2.6 Interest in teaching: Teacher must be prepared and using the material in more interesting and attractive way. Teacher also guides and helps students in searching the qualitative material. In teaching teacher prepare learning material for students, rather teaching in conventional situations.

2.7 Solve the study problems of students: Information technologies affect the teaching learning process in different ways. These helps the teachers in preparing lecture notes for interesting presentation, on the one hand and facilitates the students on the other hand. Different technologies help the teachers and students according to their respective nature and capabilities of storage and presentation. For example computers are used in education for various purposes as they can store and retrieve a huge amount of information.

2.8 collaborative learning activities: In teaching teacher take more activities such as reading, writing, listening, discussion, peer group learning, symposium and preparing the seminar. Different methods and techniques are used learning activity.

3. ICT Competency for Students

3.1 The International Society for Technology Education has released its Educational Technology Standards for teachers. These standards include 21st century skills such as finding and managing resources, publishing on the web and connecting with colleagues, students, parents and local and global communities.

3.2 In this line quality teachers must be provided with quality teacher education by enhancing ICT competency. Because ICT competent teachers are needed to develop ICT competent students to face the emerging challenges such as global warming, famine, poverty, health issues, global population explosion and other environmental and social issues. These issues lead to a need for these future citizens to be able to communicate, function and create change in personality, socially, economically and politically on local, national and global levels. Therefore quality of a nation depends upon the quality of its citizens. The quality of the citizens rests upon the quality of their education. The quality of their education depends upon the competency of the teachers.

3.3 Exchange learning experiences and information with others students and teachers living anywhere in the world. Information technologies facilitate students in their learning process through their active participation on one hand and help teachers on the other hand.

3.4 Participate in a media revolution, profoundly affecting the way they think about and use information technologies.

3.5 improve the ways of learning in new learning fashions

3.6 extend the ability and skills of applying their learning in real situation.

3.7 Working in groups for cooperative and collaborative learning

3.8 Developing self-learning habits at their own pace and time.

3.9 Learn with the teacher rather by the teacher.

4. ICT: Its Need and Importance in Education:

4.1 Life-long Process: Education is a lifelong process therefore anytime anywhere access to it.

4.2 Explosion of Knowledge: Information explosion is an ever increasing phenomenon therefore there is needed to get access to this information

4.3 Learn to capacity of Learner: Education should meet the needs of variety of learners and therefore INFORMATION TECHNOLOGY is important in meeting this need

4.4 Society needs: It is a requirement of the society that the individuals should posses' technological literacy

4.5 Face to new challenges: We need to increase access and bring down the cost of education to meet the challenges of illiteracy and poverty-INFORMATION TECHNOLOGY is the answer

Importance

4.7 Access to variety of learning resources: In the era of technology. IT aids plenty of resources to enhance the teaching skills and learning ability. With the help of IT now it is easy to provide audio visual education. The learning resources are being widens and widen. Now with this vivid and vast technique as part of the IT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work.

4.8 Immediacy to information: IT has provided immediacy to education. Now in the year of computers and web networks the pace of imparting knowledge is very very fast and one can be educated anywhere at any time. New IT has often been introduced into well-established patterns of working and living without radically altering them. For example, the traditional office, with secretaries working at keyboards and notes being written on paper and manually exchanged, has remained remarkably stable, even if personal computers have replaced typewriters.

4.9 Anytime and anywhere learning: Now in the year of computers and web networks the pace of imparting knowledge is very very fast and one can be educated .One can study whenever he wills irrespective of whether it is day or night and irrespective of being in India or in US because of the boom in IT.

4.10 Collaborative learning: Now IT has made it easy to study as well as teach in groups or in clusters. With online we can be unite together to do the desired task. Efficient postal systems, the telephone (fixed and mobile), and various recording and playback systems based on computer technology all have a part to play in educational broadcasting in the new millennium. The Internet and its Web sites are now familiar to many children in developed countries and among educational elites elsewhere, but it remains of little significance to very many more, who lack the most basic means for subsistence.

4.11 Multimedia approach to education: Audio-Visual Education, planning, preparation, and use of devices and materials that involve sight, sound, or both, for educational purposes. Among the devices used are still and motion pictures, filmstrips, television, transparencies, audiotapes, records, teaching machines, computers, and videodiscs. The growth of audio-visual education has reflected developments in both technology and learning theory. Studies in the psychology of learning suggest that the use of audio-visuals in education has

several advantages. All learning is based on perception, the process by which the senses gain information from the environment. The higher processes of memory and concept formation cannot occur without prior perception. People can attend to only a limited amount of information at a time; their selection and perception of information is influenced by past experiences. Researchers have found that, other conditions being equal, more information is taken in if it is received simultaneously in two modalities (vision and hearing, for example) rather than in a single modality. Furthermore, learning is enhanced when material is organized and that organization is evident to the student. These findings suggest the value of audio-visuals in the educational process. They can facilitate perception of the most important features, can be carefully organized, and can require the student to use more than one modality.

4.12 Authentic and up to date information: The information and data which are available on the net is purely correct and up to date. Internet, a collection of computer networks that operate to common standards and enable the computers and the programs they run to communicate directly provides true and correct information.

4.13 Online library: Internets support thousands of different kinds of operational and experimental services one of which is online library. We can get plenty of data on this online library. As part of the IT curriculum, learners are encouraged to regard computers as tools to be used in all aspects of their studies. In particular, they need to make use of the new multimedia technologies to communicate ideas, describe projects, and order information in their work. This requires them to select the medium best suited to conveying their message, to structure information in a hierarchical manner, and to link together information to produce a multidimensional document.

4.14 Distance learning : Late 20th-century communications technologies, in their most recent phases multimedia and interactive, open up new possibilities, both individual and institutional, much of it part-time. The term distance learning was coined within the context of a continuing communications revolution, largely replacing a hitherto confusing mixed nomenclature—home study, independent study, external study, and, most common, though restricted in pedagogic means, correspondence study. The convergence of increased demand for access to educational facilities and innovative communications technology has been increasingly exploited in face of criticisms that distance learning is an inadequate substitute for learning alongside others in formal institutions. A powerful incentive has been reduced costs per student. At the same time, students studying at home themselves save on travel time and other costs.

Whatever the reasoning, distance learning widens access for students unable for whatever reason (course availability, geographical remoteness, family circumstances, individual disability) to study alongside others. At the same time, it appeals to students who prefer learning at home. In addition, it appeals to organizers of professional and business education, providing an incentive to rethink the most effective way of communicating vital information.

4.15 Better accesses to children with disabilities:

Information technology has brought drastic changes in the life of disabled children. IT provides various software and technique to educate these poor peoples. Unless provided early with special training, people profoundly deaf from birth are incapable of learning to speak. Deafness from birth causes severe sensory deprivation, which can seriously affect a person's intellectual capacity or ability to learn. A child who sustains a hearing loss early in life may lack the language stimulation experienced by children who can hear. The

critical period for neurological plasticity is up to age seven. Failure of acoustic sensory input during this period results in failure of formation of synaptic connections and, possibly, an irremediable situation for the child. A delay in learning language may cause a deaf child's academic progress to be slower than that of hearing children. The academic lag tends to be cumulative, so that a deaf adolescent may be four or more academic years behind his or her hearing peers. Deaf children who receive early language stimulation through sign language, however, generally achieve academically alongside their hearing peers.

4.16 Students can get mastery on applications of Information Technology.

4.17 Students can draw pictures in paint can easily draw, drafting, calculating, and making PPT become easier.

4.18 Student's self-confidence can be increased and his overall development occurs.

4.19 Teaching of different subjects made interesting: The integration of information technology in teaching is a central matter in ensuring quality in the educational system. There are two equally important reasons for integrating information technology in teaching. Pupils must become familiar with the use of information technology, since all jobs in the society of the future will be dependent on it, and information technology must be used in teaching in order to improve its quality and make it more effective. In teaching educational data storage and access to the source of information is helped.

5. Conclusion:

Information technologies are the result of knowledge explosion. These include Hardware & software technologies and facilitate teaching learning process. Using Information Technologies learners are now able to participate in

learning communities throughout the world. They are independent and free in choice of their programmes of study and access to the resources. They may learn collaboratively, share information, exchange their learning experiences and work through cooperative activities in virtual learning communities. Information technologies facilitate teaching learning process in more productive fashion. Similarly, the role of teacher is also different in new settings than in the conventional system. Teacher facilitates and guides the learners in their study playing the role of a coach or mentor. Now teacher is not at the center of the instruction and sole source of information as in conventional classrooms. He/she decides contents/experiences and/or activities, locates the resources and guides learners how to have access and utilize the information for required outcomes. In nutshell, information technologies are restructuring teaching learning process to meet the International standards.

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