ROLE OF ICT AND TEACHER EDUCATION

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ABSTRACT

Information and communication technologies (ICT) are widely believed to be important potential levers to introduce and sustain education reform efforts. Despite evidence of increasingly widespread use of ICTs in education initiatives around the world, however, there is little guidance available for policy makers to meet the education-related Millennium development goals. Teaching is becoming one of the most challenging professions in the society where knowledge is expanding rapidly. As new concepts of learning have evolved, teachers are expected facilitate learning and make it meaningful to individual learners rather than just to prove knowledge and skills. Recent developments of innovative technologies have provided possibilities to teaching profession but at the same time have placed more demands on teach to learn how to use these technologies in their teaching.

ICTs are one of the major contemporary factors shaping the global economy and producing rapid changes in society. They have fundamentally changed the way people learn, communicate, and do business. They can transform the nature of education – where and how learning takes place and the roles of students and teachers in the learning process. Education faces a number of problems. These problems include the shortage of qualified teachers, very large student populations. High drop-out rates of students and teachers, and weak curricula. All of the negative aspects result in poor delivery of education.

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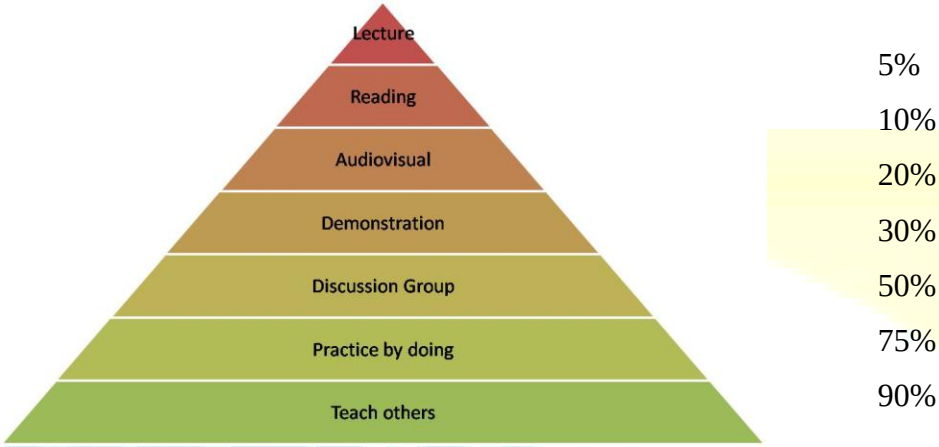
ICT has emerged as major tool for learning and teaching and from one of the survey it is clear that the average rate of retention is high when learner learn through listening and even more by seeing. The learning Pyramid below clearly indicate this and hence, it is clear that how ICT is useful in teaching and learning.



In learning Pyramid People retain only 20% of what they see and 30% of what they hear. But they remember 50% of what they see and hear, and as much as 80% of what they see, hear and do simultaneously. While societies undergo rapid changes as a result of increased access to information, the majority of the school-going youth continue to undergo traditional rote learning. Very little is done to take advantage of the wealth of information available on the Internet. Whereas the processing of information to build knowledge is one of the essential literacy skills vital for the workforce in the 21st century, it is often overlooked in current educational practices.

In order to function in the new world economy, students and their teachers have to learn to navigate large amounts of information, to analyses and make decisions, and to master new knowledge and to accomplish tasks collaboratively. Technology is not new to education. However, contemporary computer technologies, such as the Internet, allow new types of teaching and learning experiences to flourish. Many new technologies are interactive, making it easier to create environments in which students can learn by doing, receive feedback, and continually refine their understanding and build new knowledge. In the education sector, curriculum review efforts are geared toward modernisation, including the incorporation of important ICT components. However, even the reviewed curricula tend to treat ICT as a subject rather than as an application tool that can be used in all other subjects, in teaching and learning.

Teacher education institutions and programmes have the critical role to provide the necessary leadership in adapting pre-service and in-service teacher education to deal with the current demands of society and economy. They need to model the new pedagogies and tools for learning with the aim of enhancing the teaching-learning process. Moreover, teacher education institutions and programmes must also give guidance in determining how the new technologies can best be used in the context of culture, needs and economic conditions of their country.

PRINCIPLES FOR EFFECTIVE ICT DEVELOPMENT IN TEACHER EDUCATION

Society for Information Technology and Teacher Education has put forward three key principles for effective ICT development in teacher education. The first principle is that technology should be infused into entire teacher education programme. This principle means that ICT should not be restricted to a single course but needs to permeate all course in the programme. The second principle is that technology should be introduced in context. According to this principle, particular ICT application like word processing, databases, spreadsheets and telecommunications should not be taught as separate topics rather encountered as the need arises in all courses of the teacher education programme.

The third of the key principle is that students should experience innovative technology-supported learning environments in their teacher education programme. The last principle requires that students should see their lecturers engaging in technology to present their subjects, for example, utilizing power point or simulations in lectures and demonstrations. Students should also have the opportunity to make such applications in practical classes, seminars and assignments. The application of these principles will go a long way towards effectively integrating ICT in teacher education.

INFUSED CURRICULUM

ICTs should be infused into the entire curriculum. Throughout their teacher education experience and professional development programmes, pre-service and in-service teachers should learn how to incorporate ICTs into their own subjects. Restricting technology experiences to a single course or a separate area of teacher education will not prepare students to be technology-using teachers. More attention is needed for this integration into the curricula.

INFUSION IN CORE COURSES

For example, an Educational Psychology course might include some work on brain science and learning theory and roles of computers in brain science and learning theory. An

educational Foundations course might include some work on "teaching machines" that existed before the advent of computers and on behaviorism, which underlies much of today's drill and practice materials. Both instruction about ICT and use of ICT can be integrated into any content or methods course required in a teacher education program.

INFUSION IN METHODS COURSE

The focus is on ICT as an aid to instruction, assessment and the routine work the students do as an aid to learning and to demonstrate their learning. The integration of ICT into a Methods course is often done by team-teaching or by making use of "guest" lecturers. However, the most effective approach is for the regular instructor of a Methods course to have an appropriate level of ICT expertise, so that he or she can assume responsibility for the integration of ICT instruction and use into the course. This fits well with the ultimate goal of having the pre-service teachers learn to integrate ICT into the courses that they will teach as part of content, as part of the instructional process, and as part of assessment.

CONCLUSION

So technology has the potential to draw out teachers from the isolation of classrooms. Some have through indifference or intellectual incometence or through circumstances such as lack of time, lack of opportunities, lack of resource have accepted a role confining their professional practise to the classroom. Their isolation kept them from participating in activities that could have improved their own practise. They also have no impact on or to the larger educational community. To these teachers, technology offers the opportunities to draw a personal road map that would enable them to become active contributor to growth of new knowledge. Technology can definitely help teachers assume personal responsibility for shaping their learning. For technology to be used as a powerful and transforming tool same conditions must prevail and its effectiveness would require structural changes and reforms from the educationists, academicians, government and policy makers.

REFERENCES

Bronowski, J. (1990). *Science and Human Values.* New York: Harper Collins.

Bruer, J. (1993). *Schools for Thought.* Cambridge: MIT Press.

Driscoll, M.P. (1994). *Psychology of Learning for Instruction.* Boston: Allyn and Bacon.

Pandey, V.C. (Ed.). (2005). *Framework for ICTs and Teacher Education*. New Delhi: Isha Books.

Pribram, K. (1991). *Brain and Perception: Holonomy and Structure in Figural Processing. Lawrence Erlbaum.* New Jersey: Mahwah.

Sandholtz, J., Ringstaff, C. and Dwyer, D. (1997). *Teaching with Technology*. New York: Teachers College press.

Tapscott, Don. (1998). *Growing Up Digital: The rise of the Net Generation.* New York : McGraw Hill.

Vygotsky, L.S. (1978). *Mind in Society*. Cambridge: Harvard University press.