INNOVATIONS IN EDUCATION FOR KNOWLEDGE SOCIETY

ROLE OF ICT IN EDUCATION

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Abstract

Information and communication technologies (ICT) have become common place entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of Endeavour within business and governance. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century.

Introduction

Education has always lived a tension between two functions. On the one hand education is a matter of assuring continuity that is, passing on what is known. On the other, it is a matter of fostering creativity and change that is, propelling learners into the unknown. Both of these functions relate equally to knowledge and attitudes, to understanding and behavior. They are simultaneously complementary and conflictive. Since education has, fortunately, come to be considered as a human right, the main instrument of delivery of basic education is the school,

and the right to education is, with exceptions, perceived as a right to schooling. So the tension between continuity and change is played out in an important way in the classroom. In the educational process, people are central. The role of teachers is always crucial. One of the most universally recognizable and enduring human institutions is the school. In many cases, technologies have been brought in to enhance an otherwise static process. The learners gather, the teachers communicate information, the learners reproduce what they have heard and seen, and they are evaluated on their accuracy. Over the past 200 years, we have tried to perfect the education services provided by schools and we have succeeded in squeezing a multidimensional, multifaceted world into a flat text in a constrained classroom environment channeled through a teacher. The school system has been remarkable in its contribution to the fulfillment of basic learning needs, to skill formation, to scientific progress, to reproduction of the social order and the preservation and evolution of cultures. As we look back at the achievements of the last century, we marvel at the extraordinary advancements in science and technology. All this was possible because of a set of unique human features: the capacity to acquire knowledge generated by others and build on it; the ability to record one's knowledge, explore, and make sense of the universe; to solve day-to-day problems; and the faith that nothing is impossible or beyond the reach of the human mind. Educational institutions at all levels are the embodiment of these human features and have been at the center of human achievement. They have excited many minds, opened new doors into the mysteries of the universe, and dared many spirits to delve into the unknown.

ICT Enhancing the Accessibility of Education:

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning. Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. One of the most vital contributions of ICT in the field of education is- Easy Access to Learning. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other

commitments (Young, 2002). Wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching. Learning at anytime, teachers are also finding the capabilities of teaching at any time to be opportunistic and able to be used to advantage. Mobile technologies and seamless communications technologies support 24x7 teaching and learning. Thus, ICT enabled education will ultimately lead to the democratization of education. Especially in developing countries like India, effective use of ICT for the purpose of education has the potential to bridge the digital divide. India has a billion-plus population and a high proportion of the young and hence it has a large formal education system. There exist drawbacks in general education in India as well as all over the world like lack of learning materials, teachers, remoteness of education facilities, high dropout rate etc (UNESCO,2002). Innovative use of Information and Communication Technology can potentially solve this problem. Internet usage in home and work place has grown exponentially (McGorry, 2002). ICT has the potential to remove the barriers that are causing the problems of low rate of education in any country. It can be used as a tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome time and distance barriers (McGorry, 2002). ICTs also allow for the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time (Bhattacharya and Sharma, 2007; Cholin, 2005). Such facilities allow the networking of academics and researchers and hence sharing of scholarly material. This avoids duplication of work (Cholin, 2005).ICT eliminating time barriers in education for learners as well as teacher. ICT provides new educational approaches (Sanyal, 2001). Bottino (2003) and Sharma (2003) mention that the use of ICT can improve performance, teaching, administration, and develop relevant skills in the disadvantaged communities. It also improves the quality of education by facilitating learning by doing self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and teach (Yuen et al, 2003). A great deal of research has proven the benefits to the quality of education (Al-Ansari 2006) state that the literature contains many unsubstantiated claims about the revolutionary potential of ICTs to improve the quality of education.

ICT Enhancing learning Motivation:

ICTs can enhance the quality of education in several ways, by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training.

ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner centered environment. ICTs, especially computers and Internet technologies, enable new ways of teaching and learning. ICT has an impact not only on what students should learn, but it also plays a major role on how the students should learn. Along with a shift of curricula from "content-centered" to "competence-based", the mode of curricula delivery has now shifted from "teacher centered" forms of delivery to "student-centered" forms of delivery. ICTs such as videos, television and multimedia computer software that Combine text, sound, and colourful moving images can be used to provide challenging and authentic content that will engage the student in the learning process and become more involved in the lessons being delivered. Some of the parents of the respondents opined that their children were feeling more motivated than before in such type of teaching in the classroom rather than the stereotype 45 minutes lecture. They were of the view that this type of learning process is much more effective than the monotonous monologue classroom situation where the teacher just lectures from a raised platform and the students just listen to the teacher. ICT changes the characteristics of problems and learning tasks, and hence play an important task as mediator of cognitive development, enhancing the acquisition of generic cognitive competencies as essential for life in our knowledge society. ICTs allow learners to explore and discover rather than merely listen and remember.

ICT in Expanding Educational Opportunities:

The potential of ICTs to reach large audiences. The open universities expand opportunities to populations that traditionally have been excluded from education due to geographic, cultural, and social barriers: minorities, girls, rural populations, and the elderly. The personal contact with peers and with teachers in a good onsite institution is incomparable in its richness. Libraries, possibly obsolete in a not-too distant future, still serve as an unmatched resource for investigation and learning. Distance learning, on the other hand, provides opportunities for those who could not attend courses on campus because of cost and time constraints. Distance learning increasingly provides rapid and personal interaction; it can provide more reliable learning materials than inferior institutions; it is generally far lower in terms of cost to the student; and it often offers more for lower capital and recurrent costs.

ICT in Improving Quality:

In many schools, *teachers* are not well qualified to translate the curriculum into teaching/learning activities or to be the chief mediators between knowledge and learners. Their initial training, often the only one they have received, generally does not include the preparation of teaching materials or the use of contemporary technologies for teaching. But, teachers can be empowered with high-quality educational videos and software. Teachers are no longer the sole providers of information but facilitators of the learning process. Second, most educational software comes with a teacher's guide and tutorials, and support can be found on the Internet. At the same time, ICTs can contribute significantly to the teacher professional development. Properly developed multimedia materials can enhance initial preparation by providing good training materials, facilitating simulations, capturing and analyzing practice teaching, bringing world experience into the training institution, familiarizing trainees with sources of materials and support, and training potential teachers in the use of technologies for teaching/learning.

Conclusion:

In order to conclude we will try to proceed to synthesize from a general viewpoint the results obtained, taking into consideration the relevant aspects of the literature. The results provided by both the quantitative and qualitative analysis of the literature obtained will be exposed especially regarding those aspects which are related to ICTs for Education and ICTs in Education. This literature review has sought to explore the role of ICT in education as we progress into the 21st century. Extrapolating current activities and practices, the continued use and development of ICTs within education will have a strong impact on: ICT and teaching learning process; quality and accessibility of education; learning motivation, learning environment and ICT usage and academic performance. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and

improved academic achievement of students. The overall literature suggests that successful ICT integration in education.

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