USE OF ICT IN EDUCATION

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ABSTRACT

Technology is increasingly becoming popular and it is being exploited for teaching and learning all over the world mostly because of its flexibility in terms of time, place and pace. Its importance is increased because of its ability to present material in a more diverse ways than a book or video does. Today, thousands of video clips are available on different subjects. There are visual aids in ICT which makes the teaching more effective especially practical skill and presentation skill. Online resources like e - books, journals and videos are easily accessible for all the subjects. Students can submit assignments and projects online and get it reviewed by the teachers. It also generates interaction and improve communicative competence, including providing authentic material to the class or self – learning. The effectiveness of using any technological tool depends on the knowledge and expertise of the qualified teachers who manage and facilitate the learning environment in the classroom. This paper discusses the impact of using ICT in education as it improves student learning, knowledge and innovative teaching methods.

Keywords: ICT, Education, Teaching, Learning, Online resources, improves knowledge

INTRODUCTION

ICT (Information and Communication Technology) can empower teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centred, and this transformation can result in increased learning gains for students, creating and allowing for opportunities for learners to develop their creativity, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills. ICT has been used in almost all fields of life, and in education, computer technology has become so essential that the Government in most of the states in India is insisting on integrating ICT in teaching and learning to enhance the quality in Higher Education. ICT has been publicized as potentially powerful enabling tools for educational change and reform. As Hartoyo (2008) stated in his book, a computer is a tool and medium that facilitates people in learning, although the effectiveness of learning depends totally on the users. The technology in this era has been grown up not only from the quality but also the efficiency. They are moving fast without any limit from every product. However, in order to use these techniques successfully, the teachers and students should be familiar with using computers and internet, and capable of interacting with these techniques.

Advantages of using ICT for Teaching and Learning

ICT has the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005). In a rapidly changing world, basic education is essential for an individual be able to access and apply information.

The Internet promotes fast communication across geographical barriers, and therefore gives students an opportunity to communicate early in life with a broad range of people not imagined possible before. ICT allow for a higher quality lessons through collaboration with teachers in planning and preparing resources (Ofsted, 2002).

The Internet facilitates cooperative learning, encourages dialogue, and creates a more engaging classroom. Conventional teaching has emphasized content. For many years course have been written around textbooks. Teachers have taught through lectures and presentations interspersed with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary settings are now favouring curricula that promote competency and performance. Curricula are starting to emphasize capabilities and to be concerned more with how the information will be used than with what the information is. Contemporary ICTs are able to provide strong support for all these requirements and there are now many outstanding examples of world class settings for competency and performance-based curricula that make sound use of the affordances of these technologies (Oliver, 2000). The integration of information and communication technologies can help revitalize teachers and students. This can help to improve and develop the quality of education by providing curricular support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaborative projects and development of intervention change strategies, which would include teaching partnerships with ICT as a tool.

ICT Enhance the Quality and 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 as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore &Kearsley, 1996). 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. ICT also allows the academic institutions to reach disadvantaged groups and new international educational markets.

People have to access knowledge via ICT to keep pace with the latest developments (Plomp, Pelgrum& Law, 2007). ICT can be used to remove communication barriers such as that of space and time (Lim and Chai, 2004). 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. ICT provides new educational approaches (Sanyal, 2001). It can provide speedy dissemination of education to target disadvantaged groups (UNESCO, 2002;

Chandra and Patkar, 2007).ICT enhances the international dimension of educational services (UNESCO, 2002). It can also be used for non-formal education like health campaigns and literacy campaigns (UNESCO, 2002). It improves the quality of education by facilitating learning by doing, real time conversation, delayed time conversation, directed instruction, self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and learn (Yuen et al, 2003).

ICT Enhances Learning Environment and Motivation

ICT is a powerful tool that provides educational learning opportunities to the students. It gives a new learning environment such as critical thinking, research, and evaluation skills that provide increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2007). ICT provides opportunities to access an abundance of information using multiple information resources and viewing information from multiple perspectives, thus fostering the authenticity of learning environments. ICT environment improves the experience of the students and teachers and to use intensively the learning time for better results. The ICT environment has been developed by using different software and also the extended experience in developing web based and multimedia materials. ICT has an important role to play in changing and modernizing educational systems and ways of learning.

ICT 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 centred environment. ICTs, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. 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-centred to competence-based, the mode of curricula delivery has now shifted from teacher centred forms of delivery to student-centred forms of delivery. ICT influence the students to learn as it provides videos, television and multimedia computer software that combine text, sound, and colourful moving images challenging and authentic content that could engage the students in the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students to listen and become more involved in the lessons being delivered. 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.

Examples of ICT use in Education Systems of Developed Countries

Most of the developed countries have applied ICT in the 1980s to the level of K- 12 education for a variety of reasons, which are still valid. Some of the reasons as discussed by Pedro and et.al (2004), are as follows: A new society requires new skills ICTs increasingly pervade every aspect of life (work, learning, leisure, and health). Because ICTs are excellent tools for information processing, the new generation needs to become competent in their use, should acquire the necessary skills, and therefore must have access to computers and networks while at school (Kok, 2007). Schools are information and knowledge holding institutions. Therefore, ICT should be fundamental information management tool at all levels of an educational system, from classroom to ministries.

A Quest for Quality learning

Educational institutions should revise present teaching practices and resources to create effective learning environments and improve life-long learning skills and habits in their students. ICTs are versatile, and powerful tools that can help in this purpose and should therefore present in every classroom, library and teacher room. Developed nations are using ICT in their education systems. For instance, in the United Kingdom, 'rising of standards' of teaching and learning has become intertwined with the use of ICTs (Watson, 2001). As the UK Minister for Education and Employment states, using digital technology for improving the delivery of education has enormous potential to raise standards and increase employability. To realize this, number of computers in schools increased time after time.

Implications of ICT-Enhanced Education for Policy and Planning

ICT has significant contribution to bring changes in teaching practices, school change and innovations, and community services. Thus, policy makers and project leaders should think in terms of input factors that can work together to observe the right impact of ICT in education. Matching the introduction of computers with national policies and programs related to changes in curriculum, pedagogy, assessment, and teacher training is more likely to result in greater learning of students and other out comes (Kozma, 2005).

The need for linking ICT to education policies requires recognition. In reflecting the importance of technologies, education policies should focus in the following major points (UNDP, 2004): (1) Education policies have to reflect alternate and new teaching paradigms that ICT can offer in terms of providing a more effective, relevant, and flexible mode of learning for the underprivileged and the general masses. (2) Policies must take into account the retraining of teachers incorporating use of ICTs in education. Teachers should skilfully redesign learning environments so that students can transfer their newly gained ICT skills to other applications to use in an ICT rich environment. (3) Most educational policies reflect the need for ICT infrastructure but they left out the need for local educational content. The development of instructional content-ware remains a neglected area, affecting investments in hardware and resulting in a heavy economic and educational loss. (4) The focus of developing countries should be on how they use ICTs to compensate for the factors that are lacking in education, namely, well-trained teachers and the resources to pay for expensive equipment. The task is to concentrate on technological alternatives that, at low cost, bring to students the imagination and creativity of a few excellent teachers.

Limitations of ICT use in Education

ICT as a modern technology that simplifies and facilitates human activities is not only advantageous in many respects, but also has many limitations. Teachers' attitude plays an important role in the teaching-learning process that utilizes computers and internet connections. Although teachers' attitude towards use of these technologies is vital, many observations reveal that teachers do not have clarity about how far technology can be beneficial for the facilitation and enhancement of learning. Of course, some teachers may have positive attitudes to the technology, but refrain from using it in teaching due to low self-efficacy, tendency to consider themselves not qualified to teach with technology. Teacher resistance and lack of enthusiasm to use ICT in education may also be another limitation. Furthermore, many teachers may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their teaching.

Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is in a disadvantage (Brosnan, 2001). And many times students tend to misuse the technology for leisure time activities and have less time to learn and study. Yousef and Dahmani (2008) described online gaming, use of face book, chat rooms, and other communication channels as perceived drawbacks of ICT use in education, because, students easily switch to these sites at the expense of their study. The other limitation of ICT use in education is technology related. The high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power are among the technology related limitations of ICT use in education. Despite many limitations, it is believed that computer and the internet are especially useful to enhance students learning and positively impact student performance. Moreover, the usefulness of ICT is more evident in the 21st century, where the time is an era of information that the conventional modes of teaching learning could hardly handle it.

Conclusion

The use of ICT in teaching and learning make the process more effective. Innovative ICT-based learning can provide vast opportunities for students to hone and promote competence on an international scale. Thus the adoption and use of ICT in education has a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. Further, ICT can increase the 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. In short, ICT can foster better teaching and improve the academic achievement of students and so this paper suggests the teachers and students to integrate ICT in improving the quality of education.

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