ICT for Education :Challenge and Changing Role of Educators

Dr.A.J.Desai

I/C.Pri. S.T.T.College,

Visnagar

Introduction

According to Daniels (2002) ICTs have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. However, there appears to be a misconception that ICTs generally refers to 'computers and computing related activities'. This is fortunately not the case, although computers and their application play a significant role in modern information management, other technologies and/or systems also comprise of the phenomenon that is commonly regarded as ICTs.Pelgrum and Law (2003) state that near the end of the 1980s, the term 'computers' was replaced by 'IT' (information technology) signifying a shift of focus from computing technology to the capacity to store and retrieve information. This was followed by the introduction of the term 'ICT' (information and communication technology) around 1992, when e-mail started to become available to the general public (Pelgrum, W.J., Law, N., 2003). According to a United Nations report (1999) ICTs cover Internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centres, commercial information providers, network-based information services.

The 1990s was the decade of computer communications and information access, particularly with the popularity and accessibility of internet-based services such as electronic mail and the World Wide Web (WWW). At the same time the CD-ROM became the standard for distributing packaged software (replacing the floppy disk). As a result educators became more focused on the use of the technology to improve student learning as a rationale for investment. Any discussion about the use of computer systems in schools is built upon an understanding of the link between schools, learning and computer technology. When the potential use of computers in schools was first mooted, the predominant conception was that students would be 'taught' by computers. In a sense it was considered that the computer

would 'take over' the teacher's job in much the same way as a robot computer may take over a welder's job. However, the use of information and communication technologies in the educative process has been divided into two broad categories: ICTs for Education and ICTs in Education. ICTs for education refers to the development of information and communications technology specifically for teaching/learning purposes, while the ICTs in education involves the adoption of general components of information and communication technologies in the teaching learning process.

A Few Key Trends and Challenges

If the creation and sustenance of a knowledge society is a policy goal, then there are several trends and challenges introduced by ICT which cut across all sectors in society. A society that wishes to create, share, and use knowledge for socio-economic development must be aware of these trends and their related challenges, paying particular attention to how these challenges impact on the education sector, which feeds and supports all other sectors. The past 20 years has seen rapid development in ICT in all economic sectors. Lagging behind this rapid development, there has been an accompanying explosion of ICT-related activity in the education sector in the last decade. Education institutions and national systems can no longer ignore ICT, and now grapple with the challenge of how best to deploy ICT to the benefit of students, academics, and countries. The long-term impact of ICT on education is still largely a matter of conjecture (often driven by ideological determinism or commercial marketing), and will only really start to become fully clear over the next ten to 15 years. Nevertheless, certain trends in ICT use that are evident across sectors, but are particularly relevant to education, are emerging:

1) ICT is expanding the range of options available to education planners in terms of the teaching and learning strategies they choose to use, providing an often bewildering array of choices in terms of systems design options, teaching and learning combinations, and strategies for administering and managing education.

2) ICT is allowing for exponential increases in the transfer of data through increasingly globalized communication systems, and connecting growing numbers of people through those networks.

3) ICT is reducing barriers to entry of potential competitors to traditional education institutions, by reducing the importance of geographical distance as a barrier, by reducing the overhead and logistical requirements of running education programmes and research agencies, and by expanding cheap access to information resources.

4) Digitization of information in all media has introduced significant challenges regarding

how to deal with issues of intellectual property and copyright. Copyright regimes, and their associated business models, that worked effectively prior to the development of ICT are increasingly under threat, and in some cases rapidly becoming redundant.

5) Systemically, ICT is tending to accentuate social disparities between rich and poor.

Increasingly, investment in ICT is being seen by education policy makers and planners as a necessary part of establishing national competitive advantage, because it is attractive to students (particularly in those parts of the world where young people have increasingly ubiquitous access to ICT) and because it is deemed essential by governments, parents, employers, and other key funders of education. Despite this, it is becoming clear that there is no direct correlation between increased spending on ICT and improved performance of education systems. Benefit and impact, to the extent that it can be reliably measured at all, is more a function of how ICT is deployed than what technologies are used. Hopefully, as this knowledge becomes more widespread, it will help education systems around the world – whatever their current resourcing constraints – to harness ICT over the coming years to improve education delivery and reduce its cost, rather than creating additional expenses, exacerbating operational complexities, and generating new problems.

ICT enhancing 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. As well as 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. Choosing how much time will be used within the 24x7 envelope and what periods of time are challenges that will face the educators of the future (Young, 2002). 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. The demand for education in developing countries like India has skyrocketed as education is still regarded as an important bridge of social, economic and political mobility

General Conclusions of the review

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. ICTs for education refers to the development of information and communications technology specifically for teaching/learning purposes, while the ICTs in education involves the adoption of general components of information and communication technologies in the teaching learning process.

This literature review has sought to explore the role of ICT in education as we progress into the 21st century. In particular ICTs have impacted on educational practice in education to date in quite small ways but that the impact will grow considerably in years to come and that ICT will become a strong agent for change among many educational practices. 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.

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. 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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