Role of Information and Communication Technology (ICT) in effective management of higher education through the system of Open and Distance Learning (ODL)

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INTRODUCTION

Higher education systems have grown exponentially in the last five decades to meet the demands of quality education for all. This aspect has further gained momentum due to swift advancements in Information and Communication Technology (ICT). Demand for skilled and competent labour is ever increasing in the contemporary globalised society. Competition in every sector ranging from access to quality in higher education has emerged as determining factor of economic growth and development. In order to increase the access to higher education and improving its reach to the remotest parts of the country contribution of open and distance learning facilities is on increase. In addition, it is catering to life long learning aspirations and that too at affordable cost. The last two decades have witnessed the inclusion of developments in ICTs in higher education systems around the world. Even then the challenge to develop a higher education system that is flexible and dynamic so as to holistically integrate the technology in the management and delivery of learning programmes is daunting. Involvement of ICTs in different dimensions of the Indian education system is taking place at a fast pace. Use of audio visual aids, radio, TV to support education and dissemination of information for national development is not new. The use of satellite in education started as Satellite Instructional Television Experiment (SITE) in 1975-76. This led to the establishment of CIET-SIET studios for production and transmission of school oriented programs, initiation of the country-wide classroom of the UGC with CEC as the nodal agency by creating educational media resource centres (EMRCs) and audio-visual resource centres (AVRCs) in several universities. Presently these programmes are continuing as Vyas Channel supported by the CEC and various EMRCs, Gyandarshan II of the IGNOU, Open School and NCERT broadcast channel. EDUSAT was conceptualized to meet the communications requirements of the education sector. The Twelfth five year plan is further giving impetus to use of ICTs in education by setting up a National Mission in Education through ICT. In this regard, use of ICTs would contribute significantly to enhance the access and quality of education but at the same time it may generate situations, which warrant attention. For instance to promote technology driven education and open and distance learning the country launched a dedicated satellite EDUSAT. It was expected that EDUSAT would bring both quantitative and qualitative revolution in education. However, the quantitative expansion appears to have been achieved in being able to reach out to large numbers, yet the qualitative revolution envisioned due to introduction of new services and better quality teaching with learning materials, has not been quite visible (Bhatia, 2009). Most important question, which comes in mind, is what should be the role of ICT in higher education system. The unprecedented changes have taken place in the society due to the impact of rapidly growing technological interventions. The delivery mechanisms and content of education in general and higher education in particular have been highly influenced and are under transition. These changes are creating enormous opportunities for improving the quality and efficiency of education on the one hand
and on the other present challenges before us to design and develop mechanisms to harness the great potential of information and communication technologies for achieving the set goals.

EDUCATIONAL TECHNOLOGY

Educational technology is developing rapidly and is exhibiting many new characteristics. Riding and Rayner (1995) pointed out six characteristics of the superhighway and personal computers that are helpful to understand distance learning:

- control of the mode of delivery and presentation rate;
- control of the order of presentation, pace of instruction and selection of learning activities,
- monitoring of learning performance, storing responses and conducting assessments
- provision of simulations which supply learning experiences in a variety of low-cost and risk-free topics;
- formation of a collaborative learning group by linking the learner to the instructor and to other students for support; and
- access to learning resources and assessment materials.

Moreover, distance education technology has the responsibility of following functions. McCreary and Duren (1987) points ten educational functions of computer conferencing such as

- the notice board,
- the public tutorial,
- the individual project
- free flow discussion
- the structured seminar,
- peer conferencing
- collective database
- group products
- community decision making and (10) inter-community network

According to Bola, B. (1994, p.2)

“Educational technology consists of all modern media, methods and materials and needs to be used in a well integrated manner of maximising the learning experiences of students at various levels. It implies a behavioural science approach in teaching and learning and makes use of relevant scientific and technological methods and principles developed in psychology, sociology, linguistics, communication and other related areas.”

TECHNOLOGY AND ODL SYSTEM OF EDUCATION

Distance education is a field of education that focuses on pedagogy/Andragogy, technology and incorporated in delivering education to students who are not physically “on site” to receive their education. Instead, teachers and students may communicate asynchronously by exchanging printed
or electronic media, or through technology that allows them to communicate in real time. Simonson, M.R (2006, p.35) further points that distance education courses that require a physical on-site presence for any reason including the taking of examinations is considered to be a hybrid or blended course or program.

The practice of distance education has dramatically changed since the early 1990s. Educators are using technology to increase the distant learner’s access to the local classroom, to improve access of all learners to resources and to make the experience of the remote student comparable to that of the local learner. According to Moore, M.G (2005, P.7)

“Distance education no longer relies heavily as it used to on the delivery of point and broadcast media technologies. Recent innovations in hardware, software and internet technologies have made communications based distance education systems more available, easier to use and less costly.”

Technology is an important factor in distance education. For the communication purposes different types of technologies are used. Rumble (1994) said that four media namely print, audio, television, computers are available for teaching purposes, in one technological form or another. Electronic publishing will be a major development in distance education.

A medium is a generic form of communication associated with particular ways of presenting knowledge.

There are five important media in education namely direct human contact (face to face), text (including still graphics), audio, television and computing. The use of each medium gives both variety and chance of accommodating different learning styles.

Role of ICTs in ODL system of Teaching Learning

Another most important dimension of higher education sector influenced by ICT integration is improving quality of teaching-learning. Also, the changes taking place due to globalization and internationalization attach premium to knowledge and information. Therefore, the integration of ICT's would not only help in promoting personal growth but also in developing “knowledge societies”. The call of the hour is the need to provide education for everyone, anywhere, and anytime. Life long learning has become the driving force to sustain in the contemporary competitive environment. Therefore to strengthen and/or advance this knowledge-driven growth, new technologies, skills and capabilities are needed. In this regards however the research available is scarce, though the efforts for improving pedagogical practices/approaches are being undertaken in many countries. The scope includes development of infrastructures, content ware and trained personnel. Adoption of ICTs in education requires establishment of infrastructural facilities, acquisition of technologies and their periodic updating, management and professional support services. However, initial investments for the process of developing interface between technology tools and delivery of education are exorbitant. Conventional teaching-learning processes are undergoing a paradigm shift. Focus of instruction is now on education programs/practices that promote competency and performance. Such curricula tends to require access to variety of information sources, information forms and types; student centered learning settings based on information access and inquiry; learning environments centred or problem-centred and inquiry-based activities, authentic settings and examples; and teachers as coaches and mentors rather than content experts (Oliver 2002). The shift towards development of educational programs whose curricula is competency and performance-based is well supported by and encouraged by the emerging instructional technologies. In addition, ICTs lend themselves strongly to educational programmes offered by open and distance learning universities and provide a choice to students who are otherwise unable to attend the campuses. Integration of ICTs would thus lead to quality learning.
settings not only within the classrooms/ institutions but also through online distance learning modules. Some of the Indian universities/ institutions namely IIMs, IGNOU, BITS Pilani, MAHE, NIIT are already offering online programs and many more have emerged in the recent period. Although such a learning module will lack face-to-face teacher-learner interaction but at the same time provide a participatory experience of higher order learning. Another important aspect is development and availability of learning modules/ and content material. The development of e-content for encouraging and supporting independent learning has to be based on processes of constructing knowledge as promoted by constructivist theories. The emergence of ICTs has enabled the availability of knowledge contained in books, documents, research literature and other sources online for instance the online libraries such as Questia. Some western foreign universities have allowed some of their titles in libraries for digitization in their collections such as University of Michigan (seven million titles), Harvard University (40,000 titles), Stanford University, Oxford University (6.5 million books) and the New York Public Library (nearly 20 million titles) digitized books in their collections and make them accessible via Google, Print (Carlson & Young, 2004). Presently many foreign universities such as Coventry University, UK have initiated online learning across all modules and for all students (Beaty and Deepwell, 2005). Many universities such as Stanford University provide day to day instructional lessons/materials online in many engineering programs. Apart from enhancing student’s learning experience, role of ICTs in capacity building/ training of educational personnel has very large potential. National level institutes can provide leadership role in enhancing technical and managerial manpower in different disciplines through ICT networks and collaborations. Technology facilitated learning would result in preparation of staff regarding innovative pedagogic methods, new ways of learning and interacting, easy sharing of new practices among teaching community and result in widening the opportunities for their participation. The capabilities of competent and trained teachers/ academic experts can be made available to larger audiences/ students through flexible and virtual settings

**HOW ODL/DISTANCE EDUCATION MEET ITS GOALS?**

Distance Education methods of instruction that utilize different communication technologies to carry teaching to learners in different places. As Lockmiller, D.A. (2005) stated:

* Distance education programs enable learners and teachers to interact with each other by means of computers, artificial satellites, digital libraries, telephones, radio or television broadcasting or other technologies. Instruction conducted through the mail is often referred to as correspondence education.*

Each medium and each technology for delivering it has its own strengths and weaknesses. One of the worst mistakes an organization or an instructor can make it to become dogmatically committed to delivery by an single medium. Roschelle, pea, Hoadley, Gordin and Means (2000) identify four fundamental characteristics of how technology can enhance both what and how children learn in the classroom;

1. **active engagement**
2. **participation in groups**
3. **frequent interaction and feedback and**
4. **connections to real-world contexts.**

They also indicate that use of technology is more effective as a learning tool when embedded in a broader education reform movement that includes improvements is teacher training, curriculum, student assessment and a school’s capacity for change.
WEAKNESSES AND STRENGTHS OF APPLYING ICT

Everything has its strengths and weaknesses but this can be covered with the positive handling of any instructor/tutor/teacher. Anyhow in distance education environment, technology has the following advantages:

- Accessibility and flexibility to be used anytime, anywhere.
- Less costs as far as internet facility is concerned
- Broader view of possibilities for the use of technology.
- There are unlimited resources in the context.
- Use of technology to literate people through computer.

For Michaelosit (2008) technology put the following positive effects:

- Supportive in students achievement
- Improve professional abilities
- Fulfill special needs
- Encourage continuing education
- Provide workforce skills

On the other hand, there are also some problems which are faced in distance education situation in the use of technology such as:

- High cost of technology.
- Mostly people are unfamiliar with technology.
- Problems with technology such as server down, internet connection failures, individual problems etc.

Due to all of them learning surely is affected. A distant learner who is already going away from the learning boundaries and dejected one will hardly accommodate or motivate himself to stay longer on with education. However, this position can be cleared out by a vigilant teacher.

FUTURE OF EDUCATIONAL ICT IN DISTANCE EDUCATION

There is no doubt in the fact that the future of educational technology in education is very bright. This is further recommended by James L. Morison (2009) in his article entitled “The role of Technology in Education Today and Tomorrow” i.e. wireless high-speed networks will be common.

Multimedia and three dimensional modeling, now in their infancy, will show up in more parts of the curriculum. The technologies coming to market over the next decade or more likely to enhance what faculty already to rather than fundamentally change faculty behaviors and practices.

India has actively promoted the use of ICTs in education sector ranging from radio to satellite based interactive television. Use of media for promoting education and development has always been a part of policy and plan documents on education. Presently the decision makers at both central and state level are favouring inclusion of new computer and internet based ICTs in education. The GOI has implemented several national as well as state specific schemes that run concurrent to large number of privately led ICT initiatives at school and higher education levels. Draft of National Policy on ICT in School Education is available in the MHRD’s website. 12th Five Year Plan has proposed for launching
of a National Mission in Education through ICT to increase ICT coverage in all the 378 universities and 18064 colleges. The Mission aims to focus on digitization and networking of all educational institutions, developing low cost and low power consuming access devices, and making available bandwidth for educational purposes. Collaborative efforts of agencies such as MHRD-Department of Information Technology (DIT)-Department of Tele communications (DoT) would be utilized to ensure fully electronic universities and digital campuses. Although, advanced computational facilities will be provided in select institutions. Despite the fact that ICTs in education has gained recognition and place in national and state specific policy and plan documents yet it would be advantageous to have a focused national level ICT policy framework to provide the necessary thrust, direction and guidelines to strategies at all levels of education.

CONCLUSION

The technology revolution increased the need to educate great number of people. Hellman, J. A (2003, P5a) admits that distance education is apparently offering a big potential to its students as well as facilitators. It can provide a high quality education via a diverse technology and media formats. So distance education is essential to the population which is not able from various reasons to attend traditional classroom courses. In order to successfully implement distance education one must cautiously consider many aspects of distance education such as students needs must be carefully balanced with the curriculum and the learning environment, teacher must serve as a supportive element who can ensure effectiveness of distance learning module and finally, selection of most appropriate technology should be done to exchange its materials. In examining large scale state and national studies as well as some innovative smaller studies on never educational technologies, Schacter (1999) found that students with access to any of a number of technologies such as computer assisted instruction, integrated learning systems, simulations and software that teaches higher order thinking, collaborative networked technologies or design and programming technologies show positive gains in achievement. The materials can be in written format (print, e-mail etc), video or audio format and computer based. Due to the proper handling of technology Counts, J (1996, p.122) points that assuming the societal changes brought, by micro electronic technologies would have greater implications for changes in educational programmes than would the instructional potential of these technologies. It shows that distance education has a bright future.

REFERENCES


Bola, B. (1994). Educational Technology with reference to multimedia approach to Distance Education. Vol. XI, AIOU.

Bansal, A (2004). “Distance Education is 21st century”. Sublime publications, Jaipur, India.


