POTENTIALITIES OF ICT IN OPEN AND DISTANCE LEARNING SYSTEM WITH SPECIAL REFERENCE TO NORTH EAST INDIA

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Abstract

In a huge country like India where the fruits of development are not equally distributed, the importance of ODL system is tremendous. ODL system is being adopted throughout the world as an important tool to ensure access, equity and quality in the realm of higher education. Information and Communication Technology (ICT) is playing a vital role in open and distance learning (ODL) to meet the requirements and expectations of the learners'. It is difficult to perform the same using any traditional institutional system due to its limited resources. ICT has various proven tools and technologies to meet the requirements of a learner at various phases of learning cycle viz the admission phase, the learning phase, the evaluation phase and finally the certification phase as a service. This paper is an attempt to study the growth of ODL system in North East India; the potentialities of ICT in the field of distance education and the issues and challenges on using ICT in an ODL setup.

Keywords

Open Distance Leaning, ICT, Availability, Access ,Digital

Introduction

Among the few innovations in the field of education, distance education ranks very high. Its importance is being realized because of its usefulness and potentials for providing greater access to education and making education flexible and innovative. Over the last few decades the revolution in communications has opened out vast possibilities for widening, strengthening and deepening the educational system. Right to education has revolutionized thinking of the education planners and administrators. Distance education has come into the educational scene as one of the most potent strategies to fulfill the demands of the mass education as well as individualising it **(Rana, 1994)**.

In a huge country like India where the fruits of development are not equally distributed, the importance of ODL system is tremendous. ODL system is being adopted throughout the world as an important tool to ensure access, equity and quality in the realm of higher education. ODL in its organized form is one of the path breaking innovations in the field of education of the Twentieth century. The period between "1960-1985" has witnessed remarkable growth of distance education all around the world **(IGNOU, 2001)**. Over the past decades, there has been noticeable growth in distance education around the world. It is very much evident from the increasing enrolment in ODL institutions **(Fozdar, Kumar** and **Kannan 2006)**. **Reddy (2005)** stated that among the few innovations in the field of education, distance education ranks very high. Distance education is that mode of education which frees the student from the necessity of travelling to a fixed place, at a fixed time, to meet a fixed person in order to be trained. In this context, **Rastogi (2007)** said that distance education has provided openness to learning and students have a freedom to learn at own

rate, pace and time. The growing population of a country demands a system of education which brings the education to the door steps of the learners. The need for such education which could be provided to an individual at his own place gave birth to the concept of ODL system. It has emerged in the developing countries to promote higher education and play a vital role in accommodating the aspirants, especially adult learners in getting accommodated in the higher education sector. The Gross Enrolment Ratio (GER) in higher education in India is around 17% at present and this is well below the world average of 24%. It is opined that ODL system is the answer in the developing country like India to raise the GER in higher education and in this context ODL system gains much significance in the present scenario. Indira Gandhi National Open University (IGNOU), functioning at the national level for almost three decades, made considerable progress and gives equity and access to those who could not join the formal mode of higher education **(Kishore, 1998)**. ODL worldwide has been established as an effective and innovative alternative system of education. This system can fulfil the educational needs of different categories of society, school dropouts, house wives, employed people who want to learn while earning some livelihood, people from rural areas and all these were denied access and opportunity for formal education due to geographical distances, socio-economic and cultural barriers **(Pandit, 2008)**.

Objectives of the Study:

The objectives of the study are:
1. To study the growth of distance education in North-East India,
2. To study the potentialities of ICT in ODL in North East India and
3. To find out the issues and challenges of using ICT in ODL setting.

Methodology of the Study:

The present study utilizes both primary and secondary data. Primary data have been collected from the sample institutions through questionnaires and interview schedules. Different institutional documents have also been analyzed. On the other hand secondary sources like books, journals, magazines and e-resources have also used by the researcher for the study.

Sample of the Study:

The researcher has selected three pioneer open and distance learning institutions from Assam for conducting the study. These institutions are: Indira Gandhi National Open University(IGNOU) Regional Centre, Guwahati; Institute of Distance and Open Learning, Gauhati University(IDOL) and; Krishna Kanta Handique State Open University,Guwahati (KKHSOU).

Findings of the Study:

1. Growth of distance education in North-East India:
In India, at present, we have 14 open universities out of which one is national and other 13 are state open universities. Besides, it has 12 open schools along with 140 dual mode providers of higher education. Indira Gandhi National Open University (IGNOU), the only central open university of India, was established by an Act of the Parliament in 1985, with the major objective to widen access to higher education. In the North-East India, there was relatively lower number of enrolment in IGNOU in 1987, when the IGNOU regional center was established in Guwahati, Assam. But today, IGNOU has more than twenty two thousand students in the North East alone. But other than IGNOU, at present in the North East India, we have total 12 conventional universities out of which six of them provide education through dual mode. These are

- Institute of Distance and Open Learning (IDOL), Gauhati University, Assam

- Directorate of Distance Education (DDE), Dibrugarh University, Dibrugarh, Assam
- Center for Distance Education (CDE), North-East Hills University, Shillong, Meghalaya
- Institute of Distance Education (IDE), Rajib Gandhi University, Arunachal Pradesh
- Directorate of Distance Education (DDE), Sikkim Manipal University, Sikkim
- Directorate of Distance Education (DDE), Tripura University, Tripura

In NE state like Assam where the history of ODL is not more than 15 years old, open and distance learning has solved many of the problems of outreaching. Particularly in Assam, we have found that the system of open and distance learning was successfully introduced for the first time by the Institute of Distance and Open Learning (Formerly known as Post Graduate Correspondence School) in the Gauhati University campus in 1998. IDOL Gauhati University has contributed immensely to the Human Resource development of India by producing more than 10,000 post-graduates in various disciplines. In recent times, Krishna Kanta Handiqui State Open University, the only state Open University of the North East, established in the year 2006, is yet another ODL institute which has provided educational opportunities to the learners in a successful rate. It has been successful in motivating a total of 10,383 learners in 2010-11 to take admission in the Bachelor Preparatory Programme (BPP), and a total of 14,373 in all Bachelor Degree Programmes in 2008-09. (In 2010-11, the total no. of students taking admission in Bachelor Degree Programme being 15,033).This university has played prominent role in providing education even to the inmates of Guwahati Central Jail, Jorhat Central Jail, Abhyapuri Jail and Biswanath Chariali Jail. Thus, in a democratic country like ours, we have to enjoy the basic human rights like the right to education, and the authority (the Government) should ensure education for all people by adopting the convenient mode of education system that will benefited this country in a large scale. ODL institutes in this region of India, have thus rendered great services to mass education in a large scale.

2. Potentialities of ICT in ODL system in North East India:

ICT-based ODL in North East India:

Information and communication technology has rendered great services in the field of open and distance education. It has been realised that democratisation of education is possible only when the applications of ICT is ensured to its optimum level. Defined as a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information. ICTs have made the processes of teaching-learning interesting, and has also inculcated a practical mindset among the learners. In fact, the use of ICTs has broken the trends of the conventional ODL system by providing learners and experts comfortable places to discuss, share and exchange knowledge and information on various topics through a global network. The growth and penetration of digital technologies in recent years have greatly influenced education and the educational practices in India. The proposed 11th five year plan suggests the allocation of more than 600 crores of rupees specifically for integrating ICT in school education. The Indian Government also has plans to spend abundant resources on information and communications technologies (ICT) aimed at enhancing access and at improving educational quality in India through both the regular and the distance mode. As the Government increases its investments in ICTs for education, continued efforts, must be made to ensure that investments in technology positively impact all aspects of education, including intangible aspects such as community development, psychological and cognitive developments, development of social skills, and development of critical and creative faculty. Thus, while dealing with the issue of using ICTs in Open and Distance education, one cannot but refer to what the National Knowledge Commission (NKC, 2009) of India has to say. It has stated: "The biggest challenge in higher education, therefore, is the provision of quality higher education to the greatest number, at the lowest possible cost to the learner." What is also important is that the fact that the National Knowledge Network (NKN) also aims at establishing

a strong and robust Indian network which will be capable of providing secure and reliable connectivity to all participating educational institutes. It is hoped that using NKN, all vibrant institutions of India will be able to transcend space and time limitations in accessing information and knowledge, and derive all associated benefits for themselves and society. Print media, Audio media, Audio-Visual media, Telecommunication and Multimedia Communication are the different stages of the use of ICTs in India,which are being experienced in educational transaction in all higher educational institutes throughout India. The application of ICT has helped in spreadingeducation in two obvious ways—one is access, and the other is effective teaching-learning. It has given the facility to reach out to a large number of people effectively in no time. For example, with the help of transmission networks and satellite based communication systems an institute can access a large number of the population. After telephones, fax machines and mobile phones, and now computers have brought technologies closer to people. The latest trends in teleconferencing which includes—audio conferencing, video conferencing and computer conferencing, have made the application of ICTs much more productive and efficient. Subsequently, there emerged various other technologies to suit the requirements of the content being used for teaching. Electronic mail or E-mail so to call it has become the order of the day. Of late Web 2.0 technologies have greatly transformed the educational environment with various tools like Blogs, Wikis and Rich Site Summary (RSS) as student support services irrespective of the mode in which one is conducting the teaching. Other than these, E-portals and Social Networking Sites within the educational institutions are gaining tremendous popularity in bringing together all those concerned with a meaningful educational interaction. Communication technologies have, to a great extent, replaced both the teacher and the text books by placing the learners at their own in the learning process.The point we are discussing here seeks to address to what extent the ODL mode in India has adapted itself with the use of ICTs for enhancing the teaching–learning processes.

In an economically underdeveloped and educationally backward region like North East where ODL still needs expansion, ICT enabled education may be considered a solution to the various problems of outreaching. The growth and penetration of digital technologies in recent years have greatly influenced the educational practices in North East India as well. Of late, the North-East, like the other parts of India, has experienced tremendous growth in the use of technology to enhance learning through the distance mode. Indira Gandhi National Open University (IGNOU) provides multi-channel, multiple media teaching-learning packages for instruction and self-learning. The educational radio and television channels like Gyan Darshan, a fully digital 24 hour exclusive Educational TV channel, GyanVani, a unique Radio Service of IGNOU, have played a prominent role in supplementing the teaching-learning process. This exemplifies the feasibility of using ICTs to effectively enhance the learners support services even in the North Eastern part of India.

In the context of entering into ICT-based learning in Assam, the Institute of Distance and Open Learning (IDOL), Gauhati University as well as Krishna Kanta Handique State Open University (KKHSOU), Guwahati, have taken a number of visionary initiatives. IDOL, GU has launched the first e-portal of the North-East namely *www.bodhidroom.idolgu.org* on November 13, 2009. This portal has thus become a key tool for the delivery and development of educational contents to be used by teachers, experts and students not only from the North-East but also from other parts of the world. Similarly, Krishna Kanta Handique State Open University has earned a distinction in the North East region by promoting the use of ICTs in higher education through its initiative to produce audio and audio-visual materials for the learners. It is also planning to launch its web portal shortly. Rightfully proposed to name this portal as *e-dristi,* this portal is intended to provide a number of facilities like provision of audio book and e-radio service, audiovisual programmes and so on. Besides these, various social networks (such as *www.snkkhsou.org*, facebook, twitter) are gaining tremendous popularity among the students community. Of late, Community Radio has attracted many students from the Mass Communication sector. The first Community Radio Station of the North East of India

"Gnan Taranga" has been set up under the auspices of KKHSOU, Guwahati. This is followed by "Radio Luit", which has so far been the second CRS of the NE set up by Gauhati University under the Institute of Distance and Open Learning (IDOL). Such marked developments bear testimony of Assam's looming large as a 'knowledge community' in a technology driven world. Other institutes, as far as the latest information goes, are also making their own ICT-based systems prevail very shortly. Such initiatives are sure to have a direct impact on quality of education as well as on the increase of Gross Enrolment Ratio in the North Eastern Region. The applications of NKN, National Program on Technology Enhanced Learning (NPTEL), National Mission for Education through Information and Communication Technology (NMEICT), SIRD linked with Satellite hub for with SITs (Satellite Interactive Terminal) in the North East can bring in a marked difference in the functioning of the educational institutes of this region. KKHSOU is the first among the Universities of the North East to be connected with NKN. Following the Government announcement in the Budget Speech of 2008-09,an initial amount of Rs. 100 crores the year 2008-09 was allocated for establishing the National Knowledge Network with an objective to bring together all the stakeholders in Science, Technology, Higher Education, Research & Development and Governance. This has been a major boon in the education of the North East as it can be extensively used in areas like Agriculture, Education and Health. National Knowledge Network (NKN) will facilitate creation, acquisition and sharing of Knowledge resources among the large participating Institutions; collaborative research; country wide classrooms (CWCR) etc. and help the country to evolve as a major Knowledge Society in the true sense.

3.The Challenging Issues of ICT Infrastructure Setup and usage in ODL

Information and communication technologies playing a prime role in supporting various services in open distance learning in large scale and at same time there are many issues and challenges in setup and usage of ICT infrastructure in ODL setting. The following are various issues and challenges:

Application/service compatibility with respect to the computer hardware and software

Technology is changing very frequently, but it is difficult every time to develop application software for various services using such technology. New technology has always flexible features that are needed in ODL system to meet the demands of the learners in large scale, but it is a challenging task to choose ideal hardware and software that have compatibility with existing application software. Application compatibility with respect to hardware and software can be achieved by placing platform independent infrastructure (the hardware, software and application).

Scalability issues

Open distance learning is a more flexible education system than any other conventional education system. Due to this, the student enrollment is very high and at the same time expectations from learners also high. As learners are more in scale and remote to the institution, most of the activities being performed remotely through the online services that are provided by the institution. Since, the learners and their usage is increasing progressively, time to time, it is a challenging issue to maintain always scalable resources in terms of memory space, handle number of users and their transactions. This issue can be addressed by anticipating the scalable load at network level, system level, application/service level and data storage level at least for a period of 5 to 7 years and place an adequate computing, storage and network infrastructure.

Ensure data compatibility

As database technology is changing time to time, ensuring data compatibility with changing database technology is a challenging task. If the old data is not compatible with new database

technology, it is very difficult to use and access data through various services/applications. Data compatibility problem can be achieved by encouraging data migration process in various stages time to time so that the data is always compatible to new database technology to use and access it all the times.

Dynamic allocation of Internet bandwidth

Dynamic allocation of internet bandwidth to a specific service is a challenging issue. The accessibility of a service shall be ensured only with the availability of internet bandwidth as it is one of the prime parameters. As allocation of internet bandwidth to a specific service is directly proportional to the amount of usage of that service, there is a need of dynamically allocation of bandwidth time to time to that service. The problem can be achieved by introducing bandwidth management and load balancing system to ensure availability of a service. As online services are essential in ODL, it is ideal to have more than one ISP so that the availability of a service can be ensured always.

Dedicated network connectivity among various operational nodes

In open distance learning system, learners are remote to the institution in many ways and getting services through one of its operational nodes (the headquarters, regional and study centres in case of IGNOU). It is difficult to have proper network connectivity among various operational nodes to provide/access services due to non availability of technical manpower. This problem can be achieved by establishing dedicated network connectivity among various operational nodes in form of intranet by using MPLS/VPN technology.

Support services

In open distance learning system, learners are remote to the institution many ways and require various online support services to perform their activities. Since ODL is a flexible system, the operational policies need to be changed frequently and is difficult to provide updated support services in time due to laps at various levels in the system. This problem can be addressed by involving all related personnel at the time of initiation of an activity so that its impact, if any on existing services can be discussed and find timeframe to provide support services in time.

Manpower inline with change in technology

As technology is frequently changing time to time, it is a difficult task to have updated manpower inline with change in technology. It is even very difficult to have such manpower in government organizations. This problem can be achieved by introducing brainstorming and counseling sessions time to time and also to impart training/workshops on change in technology time to time.

Conclusion

ODL is considered very effective for a country like India, where literacy and education levels are low and ICT has rendered great services in the field of open and distance education. Though ICT is playing a vital role in open distance learning but at same time there are many issues and challenges that are to be addressed for smooth functioning of various online services that are to be implemented for its learners and other public. In this paper, the required ICT infrastructure and various issues and challenges in usage and setting up of ICT infrastructure in open distance learning are addressed. The ODL institutions should look at all the addressed issues and challenges and take necessary steps with a proper action plan along with timeframe.

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