THE OPPORTUNITIES AND CHALLENGES OF ICT IN OPEN AND DISTANCE LEARNING SYSTEM WITH SPECIAL REFERENCE TO WEST BENGAL

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Abstract: In a huge country like India Open and Distance Learning system of education emerges to provide quality education to a large number of learners. ODL is an area to address the fundamental issues of access, equity and quality of higher education to improve human capabilities and to achieve the vision of knowledge economy. ICT is playing an important role in ODL which was difficult to perform for the traditional system for its limited resources. Innovative use of ICT has completely revolutionized the conventional ODL system by reducing the cost and time of imparting education and introducing need based educational programmes to a large number of learners. In distance learning as students are remote to the institution, web based learning and student support services are required at different phases of student learning cycle and also for knowledge and information sharing as done in conventional system. In this paper the tremendous potentialities of ICT to serve all the purposes are discussed. However, there are some challenges and issues on its application in ODL set up which are also addressed.

Introduction:

In a huge country like India the growing population demands a system of education which is flexible and innovative and brings the education to the door step of the learners. The requirement of such an educational system gave birth to Open and Distance Learning (ODL) system of education. ODL has provided an openness of learning where students are having a freedom to learn at their own place, time and rate. According to Ministry of HRD, ODL system is a system wherein teachers and learners need not necessarily be present either at same place or same time and is flexible in regard to modalities and timing of teaching and learning as also the admission criteria without compromising necessary quality considerations.

ODL system has emerged to increase the Gross Enrolment Ratio (GER) in higher education by targeting the dropouts, housewives, employed people, rural population and those who have no access to conventional system. Information and communication technology (ICT) is playing a role of an enabler and a catalyst to fuel the growth of open and distance learning and to meet the requirements and expectations of the learners. Use of ICT has completely revolutionized the conventional ODL system by reducing the cost and time of imparting education and introducing need based educational programmes to a large number of learners. It also reduces the time required for sanctioning new programmes by adopting flexible system of administration.

Objectives of the study:

The objectives of the study are –

1. To study the growth of open and distance learning system of education in West Bengal.
2. To study the potentialities of ICT in teaching-learning process and student support services in ODL system in West Bengal.
3. To study the issues and challenges of using ICT in ODL set up.

Methodology of the study:

The study is based on primary and secondary sources of data. Primary information is collected directly from the different educational institutions in the state of West Bengal through interview and questionnaires. Secondary data are collected from different journals, books, e-resources etc.

Role of ICT in ODL: The possibilities

Defined as a diverse set of technological tools and resources used to communicate, create, disseminate, store and manage information, ICT in open and distance learning inevitably playing a very important role in spreading education and making teaching-learning process interesting as it has a plenty of unique features. Some of them are:

a) Individualization of learning – ICT allows each learner to relate to the content as an individual and not as a homogenous group.

b) Interactivity – A learner has the freedom to start at the point depending on the previous knowledge instead of always in a sequential way.

c) Low cost – Use of ICT always reduces the cost of imparting education remarkably.

d) Distance and climate insensitivity – ICT has enormous potentialities to communicate with the distant learners and brings education at their doorstep overcoming all geographical barriers.

e) High speed delivery – ICT makes it possible to deliver contents instantly.

f) Uniform quality – A good quality content can be delivered to urban and rural learners uniformly which is not always possible by the conventional system for the non-availability of the good faculties.

Since the learners in ODL system are not directly involved in the regular classroom teaching-learning process having direct interaction with the teachers regularly, they are provided with adequate Learners Support Services at all phases of their learning cycle for knowledge and information sharing as done in a conventional system of education. Web-based student learning and support system can be developed and implemented using ICT at different phases - the pre-enrolment phase (pre-enrolment counseling), the admission phase (providing programme details, fee structure, admission procedure and registration & re-registration), the learning phase (learning schedule, programme delivery - lectures through video conferencing, webinars, audio & video programmes, multimedia presentations, virtual classroom, the library support facilities etc.), the evaluation phase (examination schedule, internal & external assessment, examinations, improvement, valuation, revaluation and result declaration) and the certification phase (marks /grades updates, certificate printing & issuing and convocation schedule). Also various information services related to rules, regulations, procedures, schedules, available facilities for students can be provided with proper utilizing the available options of ICT. Using ICT, information about placement opportunities and future career guidance can be provided to a large number of pass-outs.

Evolution of Distance Learning with ICT:

Use of ICT for promoting education and development has always been a part of the policy on education. The Govt. of India has taken several initiatives during the eleventh Five Year Plan to increase access to higher education by adopting ICT in open and distance system of learning. At the present moment both the Central and the State Govt. are emphasizing on the implementation of internet based ICT/IT in education by adopting virtual classroom/virtual universities. In 2007, Distance Education Council allowed all premier institutes in the country to offer online courses. The National Mission on Education through Information and Communication Technology (NMEICT) is envisaged as a centrally sponsored scheme to leverage the potential of ICT in teaching-learning

process for the benefit of the learners in higher education in any-time any-where mode. UGC has cleared a proposal to publish the e-content for 77 postgraduate courses and many undergraduate courses in Engineering, Management, Technology, Sciences, and Humanities etc. National Knowledge Network (NKN) has launched initiative to establish network between all participating universities and to provide digital campuses, video-conferencing classrooms, wireless hotspots etc. to the learners. As a part of the National Programme on Technology Enhanced Learning (NPTEL), IITs and IIS are providing e-learning opportunities through online web and video courses in Engineering, Sciences etc. to enhance the quality of education in the country. Through Internet and World Wide Web, new and enlarged source of information and knowledge offers endless opportunities to learners. E-mail and other Internet related feedback mechanisms reduce the time delay in distance education. Web technologies (LAMP/WAMP) are available to develop web-based software to enrich teaching-learning with enhanced graphics, animation, visualization that can be accessed any where any time. There are several learning management systems (LMS) like Moodle, Blackboard, Web CT, e-education, virtual-U etc. for documentation, administration, tracking, reporting and delivery of e-learning courses.

An increased trend is observed towards digital repository of books (e-books) to create a digital learning environment for learners. The digital version of books embedded with text, graphics, videos, simulations and visualizations help students to learn the concept in an interactive way. Also many high quality e-journals are available through open access resources – DOAJ (Directory of Open Access Journal), DOAR (Directory of Open Access Repositories), OATD (Open Access Thesis and Dissertations) and DOAB (Directory of Open Access Books) etc. to help students in research activities.

Of late Web 2.0 technologies have greatly transformed the educational environment with various tools like Blogs, Wikis and Rich Site Summary (RSS) providing student support services irrespective of mode of teaching. Other than these, E-portals and Social Networking Sites are gaining tremendous popularity and can be used as a platform for sharing of knowledge.

Also different security devices like firewall, intrusion detection system (IDS), intrusion prevention system (IPS), the antivirus software and other monitoring systems are available which are essentially required to protect the systems (servers and personal computers), software, applications and the data that are being used in an institution where student learning and support services are made available in open and distance learning system.

Growth of Distance Education in West Bengal:

At present there are 14 open universities in India out of which one is national and others are state universities. Besides, there are 12 open schools along with 140 dual mode providers of higher education. Indira Gandhi National Open University (IGNOU) is the only central open university in India which was established by an act of the Parliament in 1985. In West Bengal, Regional Centre of IGNOU was established in 1998 in Kolkata. Since then the university was contributing to the process of distance education and at present it has 66 study centers in the state.

Netaji Subhas Open University (NSOU), the only state Open University in West Bengal was established in 1997 to provide quality education in a flexible mode to serve the aim of establishing an equitable knowledge society within the state. NSOU provides higher education through the language of the state, i.e.Bengali. The University is doing a remarkable job and has received a prestigious International award 'Excellence in Distance Education Award' for institutional excellence in 2006 from Commonwealth of learning (COL), Canada. At present the University is running its 141 study centers in different districts of West Bengal.

Also there are six Universities of the State which are providing education in dual mode. These are:

1. Directorate of Distance Education, Rabindra Bharati University

2. Directorate of Distance Education, University of Burdwan, Burdwan
3. Directorate of Distance Education, University of North Bengal, Siliguri, Darjeeling
4. Directorate of Distance Education, Vidyasagar University, Midnapore
5. Directorate of Distance Education, Kalyani University, Kalyani
6. Directorate of Distance Education, Jadavpur University, Kolkata

Other than these universities many popular distance Open Universities of the other states have their study centers in the state of West Bengal.

ICT based ODL in West Bengal:

In a state like West Bengal where the enrolment ratio in the ODL system is quite high, integrating ICT in the system is the only viable solution to provide quality education to a large number of remote learners. In the recent years like the other parts if India, West Bengal has witnessed a remarkable growth in the technology enhanced learning through ODL mode.

IGNOU provides multi-channel, multiple media teaching-learning packages for instruction and self-learning. In addition to the conventional printed study materials, other ICT embedded components like audio-video materials, radio and television broadcasts, teleconferencing, video-conferencing, interactive radio counseling, interactive multimedia CDROM, Internet based learning, mobile learning are also used. The University is gearing towards the development of interactive multimedia content and learning support through video conferencing and web based platforms by utilizing both EDUSAT and the Internet. The educational radio and television channels like Gyan Vani and Gyan Darshan are playing an important role to enhance and supplement the process of education by reaching out to the wide spread learners.

Also NSOU is contributing substantially towards developing an ICT enhanced learning environment through ODL system within the state. It is providing the web based student support services at different phases of student learning cycle by introducing the exclusive on-line admission procedure, various information services etc. NSOU has started an educational radio service the Gyan Vani FM, Kolkata on 105.4 MHz. The university broadcasts different subjects on 4th Sunday of every month through All India Radio (AIR) at Kolkata B.

The Challenges in Using ICT in ODL Setup:

Information and communication technologies are playing a prime role in supporting various services in open and distance learning in large scale and at same time there are many issues and challenges in setup and usage of ICT infrastructure. If barriers associated with the use of ICT are not addressed, the benefits of such technologies will remain a pipe dream. The following are various issues and challenges:

Application/service compatibility with respect to the computer hardware and software Technology is changing very frequently. It is difficult every time to develop application software for various services using such frequently changing 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 and 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 same time expectations from learners are 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.

Policy updates

Due to flexibility in open distance learning system, there will be frequent changes in admission criteria, evaluation criteria and even in learning procedure and policies to be adopted accordingly. As there is a frequent change in policies, it is a difficult task to update the policies every time. This issue can be addressed by introducing dynamic policy updating and enforcement approach in open distance learning system.

Network connectivity

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 centers). It is difficult to have proper network connectivity among various operational nodes to provide/access services. This problem can be overcome by establishing dedicated network connectivity among various operational nodes in form of intranet by using MPLS/VPN technology.

Sometimes there is a significant disparity in ICT usage between the learners in the urban areas and the semi urban/rural parts of the country because of the connectivity issue. With the rapid increase in mobile penetration and evolution of 4G technology, it is expected that broadband connectivity issues can be resolved by the end of 12th Five Year Plan (2012-2017).

Support services

In open and distance learning system, learners are geographically remote to the institution and require various online support services to perform their activities. The flexibility of the system demands that 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 stakeholders 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.

Trained manpower with change in technology

As technology is frequently changing, it is a difficult task to have updated manpower with change in technology. This problem can be achieved by introducing brainstorming, counseling sessions, refresher courses and training/workshops on change in technology time to time.

Also there are linguistic barriers, especially in rural areas which need to overcome to improve the ICT adoption.

Conclusion:

The effective use of ICT in open and distance learning definitely improves the quality & delivery of education and student support services for remote learners of the West Bengal. It also lowers administration costs and provides tremendous flexibility and convenience to students which the system requires most. However, there are certain issues and challenges which need to be addressed very seriously with proper action plan and time frame.

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