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AIMS AND OBJECTIVES

The COMOSA Journal of Open Schooling is a peer reviewed international journal committed to school education through open learning methodologies. The journal is inter nationally contributed, abstracted and subscribed. The affairs of the COMOSA Journal of Open Schooling are being managed with the help of an Editorial Advisory Board, and an Editorial Board, placed at NIOS, India .

The aims and objectives of the Journal are:

- to provide a forum across the Commonwealth Countries for scholarly discussion on concerns and issues in Open Schooling/Open Learning.
- to disseminate research, theory and practices including inter-disciplinary studies.

The COMOSA Journal includes research papers, articles, review of research, review of Books on Open and Distance Education and highlights programmes and activities in Open Schooling in Commonwealth Countries.

The research papers may inter alia reflect need of the study, objectives, research methodology including sample and results of the study. The researches may be empirical, archival, historical etc.

EDITORIAL CORRESPONDENCE

All communications related to publications should be addressed to:

The Chief Editor, COMOSA Journal of Open Schooling, National Institute of Open Schooling, A-24/25, Institutional Area, Sector-62, NOIDA-201309, Uttar Pradesh (India)

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(continued in inside back cover)

COMOSA JOURNAL OF OPEN SCHOOLING

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CONTENTS

Managing Editor's Note

Commonwealth Open Schooling Association (COMOSA), is a non-profit, democratic, collaborative and futuristic organization based on mutual respect and committed to support the efforts of open schooling institutions. The basic objective of the association is to cooperate and collaborate in development, promotion and introduction of innovative, high quality, relevant, equitable, gender-sensitive and cost-effective programmes of school education for sustainable development in commonwealth countries through Open and Distance Learning Mode, and thereby targeting to achieve the Millennium Development Goals (MDG) of the United Nations.

The Association aims at achieving a number of outcomes. One of these is sharing of resources by compiling, publishing and distributing research and other materials. The Journal provides a forum to the member countries to mutually benefit by sharing views, activities, research and innovations, etc. I am happy to share the news that the COMOSA Journal of Open Schooling has been registered and assigned **Number ISSN 0976-0407.**

The present issue of the COMOSA Journal has several articles/papers on varied themes which cover different aspects of Open and Distance Learning across the commonwealth countries.

The paper on **Selected Innovations for Open and Distance Learning System highlights** on compilation of few such representative innovations. It also discusses how these can be effectively adapted at the various open universities of India.

The paper on **Making Open and Distance Learning Inclusive: People with Differently-abled in Bangladesh** discusses issues and strategies needed with regard to education of this group of people and also to address their special needs for inclusion in the ODL system

The paper on **MOOCs and the Indian Higher Education Landscape** focuses upon explaining the impact of MOOCs in Indian Higher Education system in the long run and the challenges and promises which they will bring to the Indian Students.

The paper on **Technology Mediated Learners' Support Services in Open and Distance Learning: a Survey** based on a survey conducted survey was conducted on 100 students (selected purposively) in various level of the programmes of Indira Gandhi National Open University. The findings show that students were realizing that technology is an integral part of their study. Most students had positive attitude to use technology added with Self Learning Material what they have received to do their study.

The paper on **Learning without Books** elaborates_that the learner is no longer dependent on the printed material or text books only for gaining knowledge and information. The paper suggests two new models of independent bookless learning by the ODL learners.

The paper on **Computer Technology and Teaching System: Interaction and the Challenges Ahead** throws light upon the teaching system and interaction with various elements of teaching system like method, material, learner and colleagues through computer technology. It also discusses about challenges already met and challenges ahead in this direction**.**

There is a review of the book on ***A Comprehension on Educational Technology and ICT for Education*** **authored by Vinod Kumar Kanvaria.** The review points out that the book tries to deal with such several questions and takes a stand that teacher is a vital component for learning and teaching, but no doubt the role of the teacher has been transformed and become a much more demanding than the earlier.Report of the **Workshop on eContent Development for Virtual Open Schooling and Workshop on Developing Environment Awareness through Open Schooling** are also included.

The contributors of this issue of the Journal deserve special thanks for their valuable contribution on varied themes. I appreciate the hard work of the Editorial Board of COMOSA and Printing Unit of NIOS for bringing out this issue of the Journal. We look forward to receive articles for the forthcoming issues of COMOSA. We invite comments and suggestions for quality improvement of this Journal.

Best Wishes !

(Dr. Kuldeep Agarwal)
Director (Academic), NIOS
&
Treasurer, COMOSA

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Selected Innovations for Open and Distance Learning System

C.K.Ghosh* Moumita Das**

*Regional Director, IGNOU Regional Centre, Dwarka, New Delhi
**Assistant Director, NCIDE, IGNOU, New Delhi

Abstract

Open and Distance Learning System is more than three decades old in India. The first Open University was established in Andhra Pradesh in 1982, it is now called Bhim Rao Ambedkar Open University (BRAOU). The Indira Gandhi National Open University (IGNOU), a National Open University, came up in 1985. Open and distance learning system is in itself an innovation. Thirty years ago nobody would have imagined that teaching-learning transaction can take place even without entering into the portals of an academic institution. In order to make this very significant innovation viable and sustainable it is necessary that it gets the continuous support of all the sub-systems involved therein. With the changing scenario of the milieu of education and its stakeholders, these sub-systems must be open to desirable changes. For example, today's students can get access to high quality learning material at the press of a button. He can receive SMS alert services as well as contents on his cellphone. Notwithstanding the fact that the 'Chalk and Talk' method has produced a large number of scholarly teachers and professionals at every field we have to look for innovative ways for enabling the electronic media in a very judicious way so as to increase the outreach of the teacher and make his deliberations interactive. Innovations are underway all over the globe in the areas of Open and Distance Learning. Here we have made a compilation of few such representative innovations and have discussed how these can be effectively adapted at the various open universities of India.

Open and Distance Learning

Open and Distance Learning (ODL) earlier used to be known and called interchangeably as correspondence education; home study; independent study; external studies; continuing education; distance teaching; self-instruction; adult learning; technology-based or mediated education; open-learning; open access; self-learning; flexible learning; and distributed learning.

Later the Staff Training and Research Institute in Distance Education (STRIDE) at IGNOU picked up three expressions (1) which were still being used interchangeably.

These are Correspondence Education (CE), Distance Education (DE) and Open Education (OE). These are characterized by distinctive features shown in Table1.

Table: 1 : Three Expressions forming the conceptual background of Open and Distance Learning

Correspondence Education	**Distance Education**	**Open Education**
Exam-Oriented	Learning-oriented	Wide range of innovations
Postal Communication	Learner-based	Instructional design
Single Medium (Print)	Multi-media based	Diverse methods of delivery
Part of conventional university	Specially designed syllabus of study	Relaxation with regard to selection of courses
	Self-instructional materials as mainstay	Flexible entry mechanism
	Democratization of education	Relaxation with regard to place and time of study

ODL system happens to be the aggregate of the 'philosophy of open learning' and the 'methodology of distance education'. The philosophy manifests itself through different facets which are as under:

- Learner centredness
- Flexible entry norms
- Provision for individualized study
- Study based on use of modern education and communication technologies
- Modular approach towards study
- Resource sharing
- Option of free choice of courses
- Scientific scheme of evaluation with formative and summative components.

- Nationwide support service network
- International jurisdiction
- Open to collaboration and networking with other universities, institutions of higher learning.
- Facilities of 'Credit Transfer'
- Associate studentship (for a part of the whole programme as per the need base of the learner).
- Convergence with the conventional system

Distance Education is a 'methodology' where the teacher is at a distance from the learner but he is made omnipresent in two-way interaction that takes place between the 'learner' and the 'teacher'. He is made inbuilt if through print, audio-visual medium, interactive audio via radio and interactive video via satellite, mobile phone and virtual classroom via internet. A learner is supposed to be taught by the 'teacher inbuilt' in these technological modes and he gets the back-up of 'face-to-face' support' by 'live teachers' at the learner support centres.

Global History of Open and Distance Learning.

The history of Open and Distance Learning goes back to 1728, when an advertisement in the Boston Gazette prompted "Caleb Phillips, Teacher of the new method of Short Hand" seeking students to learn through weekly mailed lessons **(2).** Modern distance education has been practiced since Isaac Pitman taught shorthand in Great Britain via correspondence in the 1840s **(3)**. The University of London was the first university to offer distance learning degrees, establishing its External Programme in 1858. In Australia, the University of Queensland established its Department of Correspondence Studies in 1911 **(4)**. The University of South Africa has been offering courses through Correspondence Education since 1946.

The year 1969 was marked by the opening of first Open University in the world in U.K. Hence forth this was established that 'a learner can get access to higher education even without entering the portals of an institution of higher learning'. It opened windows of educational opportunity to working adults, people having family based responsibilities and social commitments and so on. In particular, the developing countries got encouraged by the success of the University and embarked on providing this scheme for the disadvantaged. It was indeed a great even in the history of ODL in the world **(5)**.

The overall status of some prominent open universities of the world and that of India have been presented through Tables: 2 and 3.

Table: 2 *Some of the prominent Open Universities of the world*

Sl. No.	Year	Name of the Open University	Country
1	1969	The Open University	United Kingdom
2	1972	Universidad National de Educacion a Distancia	Spain
3	1974	Fern Universitat	Germany
4	1974	Allama Iqbal Open University	Pakistan
5	1975	Athabasca University	Canada
6	1978	Open University of British Columbia	Canada
7	1978	Sukhotai Thammathirat Open University	Thailand
8	1979	The Open University of China (China Central Radio and TV University) + 44 Provincial Radio and Television Universities	China
9	1981	The Open University of Sri Lanka	Sri Lanka
10	1982	Dr. Bhim Rao Ambedkar Open University (BRAOU)	India
11	1982	University of Air	Japan
12	1982	Anadolu University	Turkey
13	1982	Korea National Open University	South Korea
14	1983	National Open University of Nigeria	Nigeria
15	1984	Universitas Terbuka	Indonesia
16	1986	National Open University, Taiwan	China
17	1989	Open University, Hong Kong	China
18	1992	Bangladesh Open University	Bangladesh
19	1992	University of Air	Japan
20	1992	University of Distance Education	Myanmar
21	1992	The Open University of Tanzania	Tanzania
22	1994	Universidad Abierta	Portugal
23	2000	Open University Malaysia	Malaysia
24	2002	Arab Open University	Kuwait
25	2006	Wawasan Open University	Japan

Open and Distance Learning in India

In India, especially after the independence, many steps were initiated to strengthen and democratize the education system. Demands from the growing number of population seeking higher education were very high. The conventional universities and colleges were not able to cater to the required needs. Then, ODL was identified as a natural choice.

The Central Advisory Board of Education appointed a Committee during 1961 under the Chairmanship of Dr. D. S Kothari and with his recommendation the School of Open Learning, formerly known as the School of was Correspondence Courses and Continuing Education, established under the University of Delhi, in 1962. This was out of Third Five Year Plan which emphasize the need for correspondence education in India keeping in view the greater flexibility, economic viability and innovative methods of imparting education **(6)**. Afterwards, many conventional universities have started correspondence courses by opening correspondence institutes later converted to Directorates of Distance Education.

The first Open University in the country was opened in 1982 named as Andhra Pradesh Open University This was followed by Indira Gandhi National Open University established in 1985 by an Act of Parliament to democratize higher education in the country. It provided a gateway to all those desirous of improving their qualifications and sharpening their academic skills, through the open and distance learning system. Then, ushered the era of open and distance learning in India to a greater extent with the slogans, - 'To Reach the Unreached' and 'Education for All', etc. In particular for a country like India, it opened up opportunities for learners located in rural and remote areas, having physical and mental impairment, belonging to scheduled castes, scheduled tribes, minority groups and most importantly the women. Currently India has 14 open universities with IGNOU as the only national Open University. The detail of establishment of Open Universities in India is provided at Table 3.

Table: 3 *Open Universities in India*

S.No.	Year	Name of the Open University	State/Jurisdiction
1	1982	Dr. Bhim Rao Ambedkar Open University (BRAOU)	Andhra Pradesh
2	1985	Indira Gandhi National Open University (IGNOU)	National
3	1987	Nalanda Open University (NOU)	Bihar
4	1987	Vardhman Mahavir Open University (VMOU)	Rajasthan
5	1989	Yashwantrao Chavan Maharashtra Open University (YCNOU)	Maharashtra
6	1991	Madhya Pradesh Bhoj Open University (MPBOU)	Madhya Pradesh
7	1994	Dr. Babsaheb Ambedkar Open University (BAOU)	Gujarat
8	1996	Karnataka State Open University (KSOU)	Karnataka
9	1997	Netaji Subhas Open University (NSOU)	West Bengal
10	1999	UP Rajarshi Tandon Open University (UPRTOU)	Uttar Pradesh
11	2002	Tamil Nadu Open University (TNOU)	Tamil Nadu
12	2005	Pandit Sunderlal Sharma Open University (PSSOU)	Chattisgarh
13	2005	Uttarakhand Open University (UOU)	Uttarakhand
14	2006	Krishna Kanta Handiqui State Open University (KKHSOU)	Assam

(Source: Distance Education Council, IGNOU currently Distance Education Bureau, UGC

In India, leaving IGNOU, the national Open University, 13 States have their open universities. Many other States are also planning; the union government is also encouraging each one of them to have an open university in order to make higher education reach to the doorsteps of the unreached.

Learning through Distance Mode

According to Keegan **(7)** the following are the characteristic features of learning through distance mode:

- *The learners are separated from the teachers:* The learners and the teachers are separated by geographical distance and time. There is no regular face to face classroom interaction. The interaction between the teacher and the learner is mostly asynchronous.

- *Media is used to connect teacher and learner:* A variety of media is used to connect the learner with the teacher. There is the self instructional print medium, which is the mainstay. The other media are letters, telephone or mobile phone, and email. Audio and video CDs, and interactive radio and TV are also important media used in distance education.

- *Interaction through seminars or two way communication system:* There is a possibility of interaction between the teachers and learners through seminars. Interactivity can also be facilitated through two was audio or two way audio/video.

- *Organizational structure:* The University has an organized structure with its schools of study and departments concerned engaged in learner support activities. The activities of pre-admission counseling, admission process, teaching-learning transaction, examination, declaration of results and certification are carried out by a university.

- *Individual responsible for learning:* The distance education learner is responsible for her/his learning. She/his has to be self motivated enough to continue with her/his learning process.

Modes of Instructional Delivery

The mode of instructional delivery in distance education is through print, audio, video and computer (CD and web based). These are described below in brief.

Print

In distance education the print material mainly comprise of handbooks, study guides etc. The study material is called self learning print material. It is a specialized material that follows the pedagogy of distance education. The Programmes of IGNOU comprise of several courses. Each course is comprised of blocks, and each block is combination of a few Units. The Units in turn are comprised of sections. Each section may have subsections. The books are made slim so that the learner can carry them easily to places comfortable for study. This facilitates learning with three anys – anyone, anywhere anytime.

The Units are structured in such a way that it facilitates easy access by the learners. Each Unit comprises of the title, introduction, objectives, and subject content divided into sections and sub sections, summary, questions, answers to questions, glossary and references. Also, there are special questions in the text to allow the learners to check his/her progress.

Audio

Distance education extensively uses audio due to its quality of versatility, low cost and user friendliness. Through audio, the learner can learn at his/her own place. Through audio, interactivity is possible and thus it helps in collaborative learning. The types of audio technologies used in education are audio CDs, audio conferencing, voice mail, and radio.

Video

There are several types of video in use in distance education, such as video cassettes, television, computers and video conferencing. It is extremely useful for dissemination of contents such as experiments in science, destinations in tourism studies.

Computers

The phenomenal changes have occurred in 'Distance Education' due to ICT Revolution. Computers have become vital not only for teaching-learning transaction, but also the management and administration of distance learning. Computers are being used for delivering content in the form of CDs or through the web.

Changing Scenario of Distance Education

The New Learner

Traditionally, the learner had to study whatever the teacher taught. Learning was a teacher centric activity. In recent times, the focus has gradually changed to learner centric teaching-learning transaction. This was due to attitudinal change among educationists, with reference to meaningful role of education in social development. It has been realized today that education has to be linked to livelihood, which brings about socio-economic prosperity. Therefore, the education system is gearing towards learner-needs. It is becoming leaner centric in the following ways:

i. It allows the learner the flexibility to select a course of his/her choice.

ii. The system allows the learner to choose the place and time of his/her study. S/he can take exams within the range of one to several years.

iii. There is no age bar for taking admission.

iv. It allows continuous and lifelong learning.

v. It allows perusal of new and innovative courses that enhance the knowledge and skills of the learner.

This wide plethora of choices has transformed the learner into a new learner. The characteristics of the new learner are:

i. S/he realizes what s/he wants to achieve.

ii. S/he knows what kind of learning suits her/him.

iii. S/he does not accept notions but wants to experiment with the available educational choices.

Now, the educational systems preferably are laying emphasis on the learners' ability to make rational choices. It is based on the presumption that unless the learner is motivated enough to learn, his/her learning will not take place. So, it is the learner who sets the conditions of learning. S/he is looked upon as the autonomous entity in higher education. The teacher has to assure the role of mentor and facilitator.

Increasing use of ICT in Teaching – Learning

The current generation distance education is largely based on ICT. The tool of ICT comprise of both, hardware and software.

The range of software that is available to enable learning is enormous. These range from learning management systems (LMS) and Learning Content Management System (LCMS) for Virtual Universities to e-learning and multimedia creating applications. The LMS and LMCS are discussed in the subsequent sections. Together, these ICT tools provide distance learning through the WWW or the Internet. The use of ICT tools for distance education has necessitated a change in the traditional pedagogy. The interactivity provided by these ICT tools enhances the learning process. The plethora of choices of ICTs tools that are available allow the teachers to devise innovative presentation of contents and ways of teaching. The learners too can access these resources and learn in an interactive way.

E-learning

The use of ICT has enabled electronic learning or e-learning. E-learning is essentially the process of learning electronically through the computer using the Internet. The components of e-learning include text, graphics, audio, video, animation and interactivity.

Demand driven Curriculum

The course curriculum of distance education is another area which is rapidly evolving. With the changes in social needs, there has been a demand of different types of courses. Education is being seen as a means for social and economic progress and development respectively. It is seen as a means to enhance one's quality of living. The market demand for employees with specialized skill sets and qualifications have created a demand among the learners to pursue diverse and new subjects that add value to their existing qualifications. The ODL system is thus striving to develop more and more new varieties of programmes for future needs.

Further, with the rapid development of ICT and its equally rapid assimilation in the ODL system, a blending of technology with pedagogy had happened. Today Open Educational Resources (OERs) are available, which enable free sharing of knowledge and information resources among teachers and learners.

The digitization of the courses has led to the production of what is known as learning objects. A learning object is a small piece of information that can be used and reused for supporting learning. Since it can be reused again and again, it is also called Reusable Learning Objects (RLOs). An RLO is self contained and self explanatory in nature. It is portable, which means it can be copied out of a paragraph and used elsewhere.

The Need for Innovations in the ODL System

Innovation in ODL system is a relatively new concept, which dates back to the early 2000s. Prior to that, worldwide, the concept of 'Best Practices' was prevalent. The concept of best practices emerged from the quality issues in the ODL system, mainly in the nineties **(8)**. At that time the quality issues were a major concern, and from these concerns arose the adaptation of best practices. Creativity and innovation were considered aspects of best practices. Today, adaptivity and innovation have become key principles of best practices. The best practices in the ODL system are spread across diverse areas, such as course designing, managing, tutoring and different media used to impart instruction **(9)**.

Today almost one-third of the students enrolled in higher education are having teaching-learning transaction through the distance mode, i.e., through one national and 13 States Open Universities or through the correspondence courses of traditional universities or the directorates of distance education.

The ODL system in India has shown a tremendous growth during the past few decades due to its unique feature of user-friendliness. In this system, the students are free to learn from their own place, in accordance with own pace and convenience while being located far away from the institution. This uniqueness and the ease of obtaining knowledge have a pivotal role to play in facilitating today's emerging knowledge society.

There are some State Open Universities which are in the forefront of innovation, such as the BRAOU and YCMOU. They have put in place innovative mechanisms to improve the system. The BRAOU has been using technology based teaching and learning system to reach the unreached and strive to provide education for all. It has adopted a multi-media approach for instructional delivery which comprises printed course materials, contact cum counseling sessions on Sundays, Winter/Summer schools of short duration, extension lectures, radio lesions and interactive radio, audio/video programmes live teleconferencing, hands on laboratory practice and continuous evaluation through assignments **(10)**.

However, it has also been found that there is a felt need for the flexibility in the top management to bring in a positive change. There have been suggestions that if the higher management is not enthusiastic in effective management, the enhancement of the system would be an unattainable task **(11)**.

The authors have also established that the sensitization of the administration is important for nurturing innovations **(12)**. The YCMOU has adopted several best practices mostly in tandem with the emerging social needs pertaining to the areas of institutional commitment and support, flexibility in curriculum and learning strategies, and assessment and evaluation. The most notable innovations are in the areas of technology enabled teaching-learning. The University has laid special emphasis on staff training and professional development, which has perceptible impact.

Thus, innovations have been noted in the areas of policy frameworks, administrative processes, curriculum, instructional design, and technology applications, but the canvas of innovations is you broader. There are areas of concern, which do not display the visible impact of the innovations **(13)** and the problems of efficiency, equity; quality and benchmarking still persist in the ODL system. All this is reflected in the low acceptability of students from the ODL system in reputed traditional universities for higher degrees. Further, the students of the ODL system find gainful employment with more difficulty in comparison with their conventional counterparts. The need for

best practices in the ODL system in India has thus arisen from the growing need of providing quality services to the learners.

Areas of Innovation in the ODL System

In the wake of the UN Millennium Development Goals, which emphasize on education for sustainable development, there is a need and demand for innovative methodologies and programmes in the ODL system that would meet the quality requirements of the large and diverse communities of the country, for their overall development. The heterogeneous learner base coupled with the unique features of the ODL system call for innovative methods of delivering quality services especially in the areas of policy initiatives, design and development of courses, methods and strategies of instruction, media used in learning, student support services, and management and finance **(14)**. There is an increasing use of ICT in every aspect of the ODL system, such as educational administration, learner management, and learner preparation for readiness, curriculum construction, instructional design, and support services including tutoring and library services as well as learner evaluation **(15)**. Agrawal et al **(16)** collated several best practices at IGNOU with regard to learner support services in the Regional Centres, and classified these into the areas of promotional issues, student registration, support service, academic initiatives, monitoring and special initiative.

Das and Dikshit **(17)** classified the diverse areas of innovation of the ODL system into the following categories:

i. Innovative Programme

ii. Innovative application of ICT in delivery mechanism

iii. Innovations in admission procedures and learner support

iv. Innovations in evaluation methodologies and practices

v. Innovations supporting convergence of systems

vi. Quality management and benchmarking

These areas are described in detail in the following sections. The important aspect to be noted is that these innovations are carried out either by creative individuals or teams, through a collaborative effort.

Innovative Programme

A programme forms the core of the ODL system. It refers to a certificate, diploma or a degree that consists of a few courses (the number of which

differs from one programme to the other). Examples of programmes offered by IGNOU include Masters in Business Administration (MBA), Bachelor in Tourism Studies (BTS), Post Graduate Diploma in Community Cardiology (PGDCC), Certificate in Information Technology, etc. Various programmes with innovative content, such as parent education, parenting skills, child psychology, school phobia, school psychology, staff development, aromatherapy, Reiki etc., are offered in universities all over the world. These programmes encourage capacity building and impart knowledge to even a lay person who is able to read and write. These can be suitably adapted and offered in India through the ODL system. Presented below are some select programmes being offered all over the world, including IGNOU, which are innovative in instructional design and content, followed by suggested strategies of adaptations by ODL institutions.

Certificate programme in Motorcycle Service and Repair, *IGNOU-HHML Motorcycle Technicians Competency Development Project (IH-MTCDP), School of Engineering & Technology (SOET). IGNOU*

Introduction

The IGNOU-HHML Motorcycle Technicians Competency Development Project (IH-MTCDP) is a collaborative initiative of Indira Gandhi National Open University (IGNOU) and Hero Honda Motors Limited. (HHML), world's number one motorcycle manufacturing company, towards competency based skill development training for the motorcycle technicians of the country. Under the project, a Certificate Programme in Motorcycle Service and Repair (CMSR) is on offer since April, 2006. Till now, more than 1000 learners have been trained and certified under this programme **(18)**.

For this innovation, the Programme got the gold medal instituted at IGNOU for Innovative Programme Design (Delivery Mechanism) for the year 2007-2008.

Innovative Features

1. The innovative programme design of CMSR programme includes firstly, the theoretical and demonstrative training of learners at PSCs and then attaching them to actual workplace to practice what is learnt. In fact, it is a perfect example of education-work linkage in vocational education where industry is participating shoulder-to-shoulder in terms of arranging the hands-on job training of the learners at the actual workplace. Here, the learners are exposed to real life situations and the challenges of the field.

2. The very first activity of the programme, i.e. Induction and Orientation of students of CMSR programme is conducted through teleconferencing from EMPC, IGNOU, New Delhi.

3. All nine existing training centres of HHML recognized as Programme Study Centre (Vocational) and a strong network of HHML Dealers' Workshop is being used as Work Centres for imparting hands-on training to the learners.

4. There is an intense participation of industry all along in delivery of the programme making this model of Public-Private Partnership (PPP) a good example of industry-institute interaction.

5. The training methodology is adopted on the basis of Competency Statement developed for the programme. Here the stress is on 'doing the work' instead of 'knowing the work'.

6. Hero Honda Motors Ltd., sponsoring this project and working towards the betterment of technicians, the backbone of automobile industry is an example of discharging their Corporate Social Responsibility (CSR).

7. As per the Act of the University, it has a mandate to initiate programmes for disadvantaged and marginalized segments of the society. This vocational training programme certainly fulfils the objectives of the University.

8. Under innovative evaluation mechanism, the learners are continuously evaluated by their trainer during the hands-on training session apart from participating in Trade Test at the end of the programme.

Possibility of adaptation

The CMSR programme is a live case study of implementing a vocational training programme through ODL. It breaks the myth that ODL system is not suitable for vocational training due to the problems of imparting hands-on training. In fact, the flexibility and openness of the ODL system support hands-on training in a real leading industry, which is, otherwise, a difficult task in formal system.

One of the significant achievements of IGNOU has been to provide access of its academic programmes to the jail inmates who have got enrolled with IGNOU through it study centres located in prisons.

Among the programmes generally opted by the convicts, CMSR is the most popular one. It enables them with the skill set that makes themselves employable after their release. This very factor is a testimony to the adaptability of this model by an unconventional system.

The innovative vocational education model developed for the motorcycle technicians may be helpful for designing similar kinds of vocation education and training programmes through ODL. Keeping in view the target population and vocations, specifics, the contact sessions and other delivery components may be suitably designed.

The industry participation with an academic institution not only in terms of sponsoring the ODL project, its continuous involvement in the delivery of the programme is the strength of the model and, in fact, is the innovation in the conventional industry sponsored projects. This kind of programme, if developed, certainly has long-term impact on ODL system in terms of its continuous refinement in delivery mechanism.

2. Innovative application of ICT in delivery mechanism

This category includes the innovative use of ICT tools in instruction delivery mechanism and learning methodologies. The ICT has the capacity to encourage and promote the paradigm shift from teacher centric to learner-centric education. It can facilitate effective learning by providing synchronous as well as asynchronous communication between teachers and learners. It helps in extending the outreach, and most importantly in facilitating teacher-learner and peer group interaction.

Learning Management System (LMS), Sakshat, Ministry of Human Resources Development, New Delhi, India.

Introduction

Sakshat is perceived to be a single stop education portal for addressing the needs of students, scholars, teachers and lifelong learners. This Education Helpline is designed by the Ministry of Human Resource Development as part of the National Mission in Education through Information and Communication Technology (NMEICT) **(19)**. Sakshat was launched on 30th October, 2006 by His Excellency, Dr. A. P. J. Abdul Kalam, the then President of India with the objective of providing free of cost scope of lifelong learning for students, teachers and those in employment.

The portal envisages providing one-stop solution to the educational requirements of learners ranging from K to 20 covering all fields of study including vocational education and learning for life skills.

In Indian scenario there is vast disparity of educational facilities available in various regions across the country; the portal will help in bridging the gap by providing just in time quality educational resources and teachers 24 × 7 to learners irrespective of their social, economic and educational status.

Innovative features

The innovative features of Sakshat are:

1. ***Educational Resources***: To explore the web based knowledge resources, a link on Educational Resources is given on the Sakshat Home Page. In Educational Resources, e-books, digital repository, digital library, e-Journals and study material of (NPTEL), (KVS), (IIT), (CBSE), (ICSE) are provided.

2. ***Scholarship***: Scholarships and fellowships are incentives as well as encouragement to meritorious students. A special emphasis is given to studies abroad where also the innovative methods are used and substantial developments have taken place in the field of education. The details about scholarships and fellowships by (MHRD, USSEFI, DAAD), Indo-fellowships, Shastri Indo-Canadian Institute, etc. are provided.

3. ***Online testing and evaluation services***: A student can test his/her knowledge quotient through online testing and evaluation services provided at Sakshat Website. They can assess the level of knowledge through self-assessment modules. There is also a provision for assessing the progress continually.

4. Chat Board: Through Chat Board a student can make video and voice chat with the help of webcam and telephone, with the teachers to take their help during the study. Mainly the student, particularly 10+2 students, takes benefit of this facility during the examination.

5. A Learning Management System with a four quadrant approach: For Learning Management System (LMS) a four quadrant approach has been adopted. Let us discuss the LMS using the 10+2 Physics curriculum. In that case, the above said approach takes the shape mentioned below:

    1) Quadrant-1 The text is basically picked up from NCERT Text Books, but the diagrams are made active by using animation which adds value to students' learning.

    2) Quadrant-2 These are web resources like MIT Lectures, NPTEL Lectures etc. While choosing them proper care has been taken regarding the IPR related issues.

    3) Quadrant-3 It consists of small video snippets on teaching points, conceptual points, hard spots identified by teachers, and

animation, etc. on areas where students face conceptual problems.

4) Quadrant-4 It consists of different types of questions, i.e. graded problems, simple/harder/very hard questions, multiple choice type questions, true/false type, etc.

It has been the experience of the resource persons that this fourth quadrant is visited the most by the learners during examination preparation stage.

Possibility of adaptation

A similar Learning Management System is very much the need of the hour for the learners of ODL. The features of interactivity, such as chat and discussions would enable the learners to interact with the resources persons and also with each other, making their learning more effective. Efforts should be made by institutions of higher learning irrespective of it being conventional or ODL, to adapt this LMS for the different subjects of the undergraduate and post-graduate curriculum.

As mentioned above, the adaptation can be planned by ODL as well as conventional institutions. An ODL institution may provide its learners with tablets rather than the usual self-instructional print material. Net connectivity with adequate band width has to be ensured. The learners may be asked to depend primarily on the LMS for their learning and visit their allocated study centres on the prescribed days with their tablets to get their doubts clarified. A conventional institution can plan a judicious mix between the classroom lectures and the LMS. It would ensure uniformity of delivery of a particular topic. We have mentioned that in Quadrant-1, the text has been picked from the NCERT text book followed at the senior secondary level. Similarly a uniform text for every discipline at the UG and PG levels be identified and put in Quadrant-1. It would ensure complete coverage of the curriculum across the institutions affiliated to a university or any regulating academic body, as the case may be. Classroom teaching will be a facilitation to the learner in his journey of interaction with the LMS. Over and above this, the LMS should have provisions for dissemination practical components in respect of all laboratory based subjects like physics, chemistry, life sciences, engineering etc.

3. Innovations in admission procedures and learner support

An innovative application of technology in admission procedures and practices that are useful and effective; and also have the characteristics of user-friendliness and cost effectiveness has been considered as an innovation.

One-stop student services, Open University Malaysia

Introduction

The Open University Malaysia has its main campus situated at Jalan Tun Ismail, Kuala Lumpur. It has established 45 learning centres across the country. These learning centres are fully equipped with tutorial rooms, computer laboratories, library and Internet facilities. The university provides support services in the following areas (**20**, **21**).

- e-CRM (Electronic Customer Relationship Management)
- LSC (Learner Service Centre)
- e-Academic Counselling
- Face-to-face Academic Counselling
- Study Skills Workshop
- Examination Clinics
- Financial Assistance
- Learner Connexxions

The Learner Service Centre (LSC) is a one stop student service. LSC was established in May 2002 as a one-stop centre offering efficient customer service to OUM learners. The highest priority accorded by LSC is in the provision of support services to OUM learners. Conspicuous among the services provided are Information Dissemination, Academic Counselling and Serving Confirmation Letters for tutorials and fees.

Innovative features

i. Easy reach for learners: Learners can reach LSC through phone call, e-Customer Relationship Management (e-CRM), fax or walk-in to submit Enquiries, Complaints, Compliments and Suggestions.

ii. Keeping track of the learner inputs: The e-CRM is a unique customer relationship management software suite. The system helps the OUM keep track of learners' requests/complaints made through the Customer Care Ticket module.

iii. Generation of reports: The e-CRM is such that it enables all enquiries to be distributed to the relevant units/departments/faculties for timely responses.

iv. Enabling resolving of issues: The reports enable the critical issues to be deliberated upon in a Committee Meeting held on a regular semester basis to come up with improvement measures, and also to avoid similar issues from recurring.

Possibility of adaptation

The Regional Centres of IGNOU are the best grounds for adaptation of this innovation of e-CRM. IGNOU operates in a three tier mode – Headquarters '! Regional Centres '! Study Centres. The Regional Centres are the administrative offices in the regions, which is either a full state or a cluster of districts of o/c a state and in some cases also its adjoining states. A regional centre is entrusted with the task of monitoring the entire gamut of support services rendered to a learner through the stages of pre-admission counselling, registration, alteration of study centres, teaching-learning transactions, formative and summative evaluation up to certifications. The three tier structure of IGNOU is time-tested and the regional centres act as the ideal interface for the learners between his study centre and the headquarters. Adaptation of i-CRM will add value to the services rendered at the regional centres.

4. Innovations in evaluation methodologies and practices

Evaluation of students in ODL system becomes critical since the learner is not present physically in front of teachers/evaluators as in case of traditional teaching/evaluating mode. The learner in ODL system is generally evaluated by providing self assessment questions in the course book itself, questions at the end of each unit, multiple choice questions, projects, assignments, and through term end examination.

Any innovative method or practice that contributes to the efficiency of the evaluation system is considered an innovation under this category.

E-assessment using Open Mark, The Open University, UK

Introduction

The Open University, UK developed Open Mark—a computer-assisted assessment (CAA) system. It is an on-line interactive formative and summative assessment system, which has been developed for science and mathematics **(22)**. The aim of 'Open Mark' is to provide feedback to students, which is instantaneous, targeted and detailed. Traditionally the OU has used multiple choice questions in CMSs, but Open Mark has broadened the range of question types. Thus enabling more skills to be assessed and making the assessment more interesting for students. Question types which enable plotting of points

and lines on graphs, matching pairs, dragging and dropping words or symbols into appropriate places in mathematical expressions or text are available, as well as straightforward entering of numerical and algebraic answers and multiple choice. 'Open Mark' has endeavoured to enable mathematical expressions to be entered easily and for equivalent mathematical expressions to be recognized and equally correct. An important feature of 'Open mark' is that students can be allowed multiple attempts at each question (the maximum score diminishing with each attempt). Students receive appropriate feedback after each attempt. The feedback after the final attempt usually includes a full worked solution or equivalent. The feedback can be tailored to the student's actual answer. Upon completing each 'Open Mark' assessment, a student receives his marks and some study advice appropriate to the mark obtained. References to the appropriate sections of the teaching materials are given as appropriate, enabling students to quickly check on any areas which need more attention. A useful feature of 'Open Mark' is the administrator's reports, which show all the responses for all the users. This can be used on an individual level for the telephone help-line and on a macro-level to analyze responses, improve questions and their feedback and even modify the teaching materials.

Innovative features

The innovative features of Open Mark are provided below:

1. The emphasis is placed on feedback on written assessments. The design of 'Open Mark' includes feedback at multiple levels. For example, if a student wrongly answers a question, a feedback by the computer is provided immediately there and then.

2. It allows multiple attempts. Students can act on feedback that is given 'there and then', while the problem is still in their mind. If their first answer is incorrect, they can have an immediate second, or third, attempt.

3. Assessments are created using multiple media to make the interactions engaging and interesting.

4. 'Open Mark' assessments are designed to enable students to complete them in their own time in a manner that fits with normal life. They can be interrupted at any point and resumed later from the same location or from elsewhere on the internet.

Possibility of adaptation

This innovative assessment system can be adapted for ODL learners. The scenario about formative assessment at IGNOU will make the situation clear. For every course the learners are given set of assignment questions. It is a component of the entire evaluation package and the weightage varies between 25 to 30 per cent, but assignment is not merely a tool for evaluation of the learner. In keeping with the true spirit of formative evaluation, the assignment responses are commented upon so that the learner is aided towards his preparation for the summative evaluation, called the term-end evaluation. The flowchart followed at the study centre begins with the receiving of the responses from the learner, getting it evaluated with teaching comments and returning the response sheets to the learner after recording the grades, ideally the above mentioned turn-around time should not be more than a month. But, primarily due to very high enrolment and non-availability of adequate number of suitable evaluators, the reality is far from what is desired.

Thus adaptation of E-assessment using Open Mark will bring in quite a significant improvement in learner support through assignments. It would be particularly useful for the learners of science and mathematics based subjects.

Moreover, in case of multiple choice type of questions, the said adaptation will not only enable the evaluator to tell the learner whether he is right or wrong, but also in case of himself being wrong, it would tell him through the application of a software about his misconception which had led him to a wrong answer, called distractor. Thus the said adaptation will do the proper justice to the learning component of evaluation which otherwise by and large remains dormant under the present circumstances.

5. Innovations supporting convergence of systems

Educational systems in any country are made of institutional subsystems. The subsystems include the processes of education (conventional or distance mode) infrastructure and personnel. Cross-national research on educational systems may focus on any combination of these elements. Shifts in the structural make-up of national educational systems can be determined through analysis of changes in several characteristics of those systems. Convergence of sub systems is envisioned to ease the flow of students from one system to another system. The creation of intelligent solutions to address credit transfers, exemptions, transfers, recognition of prior learning etc., have been considered as part of innovations under convergence of subsystems.

Reform 2000 of the Danish vocational education and training system. Ministry of Education, Denmark

Introduction

The Danish Vocational Education and Training (VET) is an apprenticeship system, which dates back to the middle ages. The system displays all the traditional features of the apprenticeship within the trades. There are about 90 different types of trades in which apprentices are engaged in Denmark. A student has to start as an apprentice either in college or in an enterprise workplace. The apprentice has to sign a contract with an assigned enterprise for the course period and is thereby engaged as an employee in that enterprise. He receives a salary according to the tariffs agreed upon by the labour market. The apprentice is supposed to learn the trade by taking part in the daily working being undertaken in that enterprise **(23)**.

In order to stay in the course all apprentices must have either signed a written agreement with an employer on workplace placement or, alternatively, has qualified to obtain an offer from the vocational college offering workplace substitution education.

The duration of the different courses varies from two to –mostly –four and up to five years.

The courses consist of alternating college and workplace periods.

The evaluating system is based partly on traditional college evaluation of the college-based part of the curriculum and partly on the results from the journeyman's test arranged by the trades' test-committees. A journeyman is an apprentice who has completed his/her apprenticeship and acquired full knowledge and skills, but yet not has become a master. The journeyman acquires a trade certificate to practice his craft.

The whole arrangement is supported and negotiated in a very complex tripartite system comprising the apprentice, the government and the social partners.

These features have been updated in Reforms 2000 and new features added to improve the system with many legislative amendments, thus bringing innovations in the VET system.

Reform-2000 aimed at increasing in a substantial amount the following:

1) The transition of apprentice students from lower secondary school to the youth education sector and to some extent increases the proportion of the cohort that attends the VET-sector.

2) The transmission in the VET-system so that all (at least 95 % of the cohort) students graduate either with a journeyman's certificate or the like or with a grammar school-diploma/general upper secondary certificate (or a combination).

3) The transition from youth education to higher education, so that 50 % of the cohort will enter higher education.

Innovative features

1. Costs: Admission is free. Students having an apprenticeship contract receive a salary (also when in college); being in the college-based alternative, a student will receive a substitute for the salary. Students not having the contract and not being in the alternative arrangement have state grants.

2. Personal education plan: Students who want to follow a VET programme must follow a track or path, which in principle is individual and which therefore has to be planned, argued and agreed upon, and so must be written down in the so-called personal education plan. The path starts with a basic course and is followed by a main (principal) course.

3. Short duration: For most students the basic course lasts for 20 to 60 weeks. For most students a minimum of 20 weeks is mandatory. The short duration saves a lot of time and money of the apprentices.

4. Choice based curriculum: The student can start his programme either on a VET-college attending a basic course or in an enterprise if an apprenticeship contract is signed. In the latter case the apprentice must also pass the basic course some time before. The basic course is a VET college arrangement offering the students' elements (modules) of learning possibilities from which paths or routes can be constructed on an individual basis according to the specific needs of the student in relation to his learning abilities and his future plans.

5. Wide range of subject combinations: An extremely wide range for combinations of subjects exists. Combinations between the vocational and the general programmes are possible.

6. Support for disabled: Support is provided to the disabled through a handicap-policy based on the inclusion principle.

Possibility of adaptation

India has thousands of apprentices in vocations such as carpet weaving, stone sculpting, handicrafts, etc., who need to be brought to the mainstream

and provided relevant education and opportunity for employment. First we had introduced the vocational programme CMSR, which has a very special requirement and required collaboration with a motorcycle manufacturing company. Now, we are talking about indigenous areas which are deeply impregnated in Indian culture and traditions. In the fast changing world, aestheticism may appear to be dying. But they come alive through handicraft exhibitions, handloom expo and so on. We get to see the hidden talents which need to be unearthed in the true spirit, nurtured with the positive outlook of inclusiveness of the marginalized, the poor, the street children, the so-called dropouts and even the differently abled. Such innovative initiatives are indeed welcome to be adapted by ODL based institution to include not only the apprentices but others who missed the bus of formal education into the mainstream.

6. Quality management and benchmarking

Quality management deals with the quality of the learning experience and the support services. It helps to ensure the completion rates of studies and diminishes dropout results in satisfied students who may in the future be willing to start new studies. It also ensures that the students are easily accepted in the traditional universities and tip jobs.

Benchmarking is one form of monitoring and measurement used in quality management. Benchmarking is being highly used in educational organizations to evaluate various aspects of the teaching-learning processes in relation to best practices or innovations. It provides new methods, ideas and tools to improve the effectiveness of the organization.

A practice that has markedly improved the quality of the system is considered an innovation under this category.

1. National Standards for Quality Online Programme. International Association for K-12 Online Learning, Vienna, Austria.

Introduction

The International Association for K-12 Online Learning ensures that its students receive world class online learning. Therefore, it developed a set of standards meant to be followed while designing online programmes. The programme is designed to provide states, districts, and other organization with a set of quality guidelines for online programme leadership, instruction, content, support services, and evaluation **(24)**.

Innovative features

The standards have the following features, which can be rated according to the level of quality of the service:

1) Institutional Standards: It contains the *Mission* (with six parameters); *Governance* (with five parameters); *Leadership* (with four parameters); *Planning* (with six parameter); *Organizational Staffing* (with four parameters); *Organizational Commitment* (with four parameters); *Financial and Material Resources* (with three parameters); *Equity and Access* (with three parameters); and *Integrity and Accountability* (with two parameters).

2) Teaching and Learning Standards: It contains *Curriculum and Course Design* (with eleven parameters); *Instruction* (with ten parameters); and *Assessment of Student Performance* (with eight parameters).

3) Support Standards: It contains *Faculty* (with Four parameters); *Students* (with Seven parameters); *Guidance Services* (with Four parameters); *Organizational Support* (with two parameters); and *Parents and Guardians* (with Three parameters).

4) Evaluation Standards: It includes *Programme Evaluation* (with ten parameters); and *Programme Improvement* (with fourteen parameters).

5) Rating: A value is awarded to the practice, which ranges from 'Not Applicable' to issues 5 to 1, as provided below:

   5 Exemplary: a model of best practice as related to this criterion

   4 Accomplished: excellent implementation; comparable to other examples

   3 Promising: good implementation; however, somewhat lacking in depth or detail

   2 Incomplete: Partial implementation of this criterion; additional work needed; good start

   1 Confusing: not obvious; more work needed; not a good example

   N/A Not Applicable

Possibility of adaptation

The IGNOU is offering a quite a few member of online programmes to its learners through its School of Law, Agriculture, Continuing Education, Health

Sciences and a number of several other online Programmes are on the pipeline. The programmes, to name a few, are the Post Graduate Diploma in Food Safety and Quality Management, Post Graduate Diploma in Sustainability Sciences, Post Graduate Certificate in Cyber Law and so on. A common feature of these programmes is that there are not many parallels in the conventional system to fall back upon for any relevant requirement, quality assurance being one among them. Thus at present there is no framework to assess the quality of the online programmes being offered by IGNOU. Therefore, it is the need of hour to develop benchmarks to assess the quality of online programmes being offered by not only IGNOU, but also the other State Open University in India. Standard parameters modeled on the National Standards for Quality Online Programms discussed above can be developed to address the issue in IGNOU.

Conclusion

Openness is philosophy, that is a way of life. Approaching any issue related to our existence with an unprejudiced mind is the most important facet of openness. The manifestation of openness in the process of teaching–learning transaction is what we call 'Open Learning'. Open learning may be understood as a philosophy that minimizes educational constraints and enables access to education at all times at all places, and at a pace that suits the learner. The whole philosophy of open learning is centred around catering to the learners' needs. Open learning has opened up enormous possibilities for the learners to pursue their learning. It offers flexibility in terms of age, entry level qualifications, use of media, curriculum and also the time of completion of a course. Thus, open learning has enabled the learners to resume and continue their study irrespective of their age, caste, creed, religion or background.

While open learning is a philosophy, that is a way of life, distance education is a methodology, which is targeted towards making the teacher omnipresent, though absent in person. It makes the transition of the art of teaching from craft to technology. Thus through this paper we have proposed for using technology as a vehicle to spread innovation. We have picked up representative innovations happening at different parts of the globe and have made an attempt to suggest strategies of their replication at ODL institutions of India.

In the process of making the selection we have laid stress on crucial areas such as mainstreaming of vocational education through the examples of CMSR of IGNOU and the Denmark based Reform 2000. Gone are the days when the students of vocational stream were treated as second grade. It is the need of the hour to put every aspect of vocational education in the right

perspective. ODL System is learner centric. So learner support is extremely crucial and in view of that we have judiciously made the selection of SAKSHAT, which is most illustrative from the point of view of academic support using ICT; and e-CRM of Open University Malaysia, which had set standards in administrative aspects of learner services using ICT.

After presenting delivery mechanism and multifarious dimensions of learner support respectively through SAKSHAT and e-CRM we have invited the attention of the reader to the issue of evaluation amalgamated with tutoring though e-Assessment using Open Mark and last but not the least we have dealt with quality management using ICT.

More than any system in vogue ODL has one distinct advantage - it is open to innovation. That is the way for it to thrive not only to educate the learner, but also to liberalize her. To quote Gurudev Rabindranath Thakur, s/ he has to be taken to the domain –

"….. Where knowledge is free
Where the world has not been broken up into fragments
By narrow domestic walls…."

ICT has the potential to elevate ODL to that "heaven of freedom" and exploration.

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Making Open and Distance Learning Inclusive: People with Differently-abled in Bangladesh

Khan Ferdousour Rahman* and **Sabina Yeasmin****

* Assistant Professor, State University of Bangladesh
ferdous3820@yahoo.co.uk

** Associate Professor, Bangladesh Open University
sabina_d@hotmail.com

Abstract

People with *differently-abled* are regarded as one of the most socially excluded groups in all societies today. They have always been at the peripheral of formal education programs. The 'National Education Policy 2010' of Bangladesh emphasizes on the importance of inclusion of the excluded. A key element in the mission of 'open university' system is also to provide educational opportunity to the learners those are excluded. Open and Distance Learning (ODL) has always held special appeal for people with learning difficulties because of the freedom it offers in choosing when, where and how to study. It can go a long way in widening accessibility to education for the majority of people with special needs, flexibly so that the learning process can go on. They may be able to access materials from home, which is seen as the safest, least expensive as well as least restrictive environment. This study is based on the concepts of inclusion and ODL as fundamental principles, which can be used to meet the needs of people with special needs. In line with these and other considerations, the present article aims to discuss issues and strategies needed with regard to education of this group of people and also to address their special needs for inclusion in the ODL system. The study finds that if afforded the chance to learn by this segment of the people can also perform as well as any able bodied person benefiting and achieving adequate independent living standards.

Keywords: Differently-abled, Exclusion, Special Needs, ODL, Flexibility etc.

1. Introduction

Disability is a normal part of the human experience and people with 'differently-abled' are part of all sections of the community, which cuts across the lines of

racial, ethnic, educational, social and economic backgrounds, and it can occur in any family. They are regarded as one of the most socially excluded groups in all societies today. The people in this category comprise heterogeneous groups with varying disabilities, each with a unique problem which limits the effectiveness with which the person can cope with the academic, social and emotional expectations of the school and community. Educational needs of the differently-abled people can be addressed through open and distance learning (ODL) to a large extent. It may not be possible to bring together a group of people with a common desire to increase their knowledge; but it is possible to bring the institution to them.

Paist (1995) notes that flexibility in the location, scheduling, and delivery of ODL programs can provide differently-abled learners with what may be their first real access to higher education. Similarly, Ommerborn (1998) in an extensive review of ODL programs worldwide for learners with differently-abled notes similar findings, emphasizing that in addition to improving access, it is equally important to ensure that learners with receive the support they require to ensure success in their studies. But the design and development of learning and teaching materials often do not take into account the special needs, aspirations and uniqueness of the learners. However, the issues of access and equity in ODL are critical in justifying the openness and the inclusion of learners with disabilities (Sherry, 1996). Burgstahlers (2002) also asserts that the designs of many ODL programs inadvertently erect barriers for students with differently-abled.

2. Background to the Study

The World Health Organization (WHO)'s global estimate predicts approximately 10 percent of all people are differently-abled of one kind or another. That means 700 million of the world population live with disabilities of various types and the number is increasing everyday particularly in developing countries. Among the total number 80 percent, i.e. more than 500 million of the differently-abled people live in the developing countries – often the poorest of the poor in terms of income and have limited or no access to basic services including rehabilitation facilities. They account for 15-20 percent of the world population (World Bank Data, 1999) and 98 percent of the children with differently-abled in developing countries do not attend any school, says UNESCO. Lindqvist (1999) writes that the major problem in the field of 'diffenrently-abled' is the lack of access to education for both children and adults of the same group.

There are various models of disabilities. But in the recent discourse of disability approach, the people with disabilities (PWD) are not considered as disabled;

rather they are termed as differently-abled. Generally, differently-abled is a wider term (Ahmed and Basha, 2011), which includes all those children who suffer from deformities or deficiencies in one or another way and as such they are different in normal functioning. The United Nations Convention on the Rights of the People with Disabilities (UNCRPD) 2006 is the first human rights treaty of the new millennium that marks a paradigm shift in attitudes and approaches to PWD. They are the world's largest minority and disability is not an attribute of an individual, but rather a complex collection of conditions, many of which are created by the social environment. As such, social action is required for managing this problem. The society has the collective responsibility to make the environmental modifications necessary for the full participation of people with differently-abled in all areas of social life. As Freeman (1997:1) defines an open learning system as "a system where learners are substantially responsible for their own learning but are still formally enrolled in a system which includes others learners," which means that the learners with differently-abled must have access to their study materials without significant hindrance to their performance just like the other learners.

People with differently-abled are a universal phenomenon and Bangladesh is no exception to that. As a developing country with around 160 million populations, Bangladesh has adopted the WHO definitions and classification of disability considering the definition and classification most relevant and consistent with the country situation. The country demonstrates a very strong international commitment to address diversity in education. Bangladesh is one of the signatories of the Salamanca Declaration 1994, Dakar Framework for Action 2000, and UNCRPD 2007, in which education of children with differently-abled needs is to be implemented through an inclusive education approach. The basic human rights of a citizen of Bangladesh have duly been protected by its Constitution, regardless of gender, class, religion, race etc. with the recognition of critical role of education in social transformation and promises equality of educational opportunities for all that also does not discriminate people with differently-abled. Upon achieving independence in 1971, mass education was viewed as a priority in the new nation and accordingly the objectives of education was set. The Constitution, in various sections have stressed on the issue, e.g. Article 28(3) and 29(3)(a).

The Government, as a member of Economical and Social Council for Asia and Pacific (ESCAP) expressed her commitment to the goal of 'equality of people with differently-abled and accordingly introduced Disability Policy in 1995 and enacted the Disability Welfare Act in 2001 in order to provide a legal framework for the development of people with differently-abled in the country. In light of this act, a national action plan was formed in 2002, which

was also accepted in 2006. The issues of disability have also been included recently in the school textbooks at primary and secondary levels under national curriculum of the National Curriculum and Textbook Board (NCTB). However, due to the unfavorable attitudes of various stakeholders, learners with differently-abled encounter numerous challenges to their education. Women with differently-abled are considered as the most vulnerable group whose sufferings are inexplicable in Bangladesh. Achieving the Education for All (EFA) targets and Millennium Development Goals (MDG) will be impossible without improving access to and quality of education for 'differently-abled' children. It is a binding on Bangladesh government as well, being a signatory to UNCRPD.

According to the CoL (2004), most ODL systems have a philosophy that aims to remove barriers to education and allows students to study what they want, when they want, where they want. Bangladesh is one of the pioneering countries of the developing world which found in the system of ODL a suitable answer to fast-growing educational needs of the country. In 1992, Bangladesh Open University (BOU) was established, which is the only public institution in the country that delivers education in ODL mode. A key element in the BOU mission is to provide educational opportunity to the learners those are excluded. In seeking to meet the education objectives, Bangladesh realized that multiple strategies and methods had to be adopted. Following the process, in the National Education Policy 2010, emphasis has been placed on the importance of inclusion of the excluded.

People with 'differently-abled' have always been at the peripheral of formal education programs. Studies have shown that people with 'differently-able' if given a chance to learn can also perform as well as any able bodied person benefiting and achieving adequate independent living standards (Chimedza and Peters, 2001). As a whole, the situation warrants inclusion policy. Inclusion does not just happen, but requires careful thought and preparation. For appropriate inclusion to occur in general education, it should be implemented with proper attitudes, accommodations, and adaptations in place (King-Sears, 1997). The study was guided by the following questions:

- Who are the differently-abled learners?
- How should BOU address their learning especially study material needs?

This article discusses the opportunities of ODL system as a possibility of removing the challenges faced by the learners with differently-abled. Key to meaningful and effective inclusion is the creation and provision of suitable study materials (Modesto and Tau, 2009). This study, therefore, was on how the Open University system like BOU can include them in its programs specifically focusing on the creation and provision of appropriate study

materials. Though there are few studies on various forms of disability rights, but there is hardly any study on inclusion of people with differently-abled in the ODL system and especially for the case of Bangladesh. Therefore, the objective of this study is to address the learners with disabilities for inclusion in the ODL system of BOU, the only such institution in the country.

3. Conceptual Framework

This study is based on the concepts of inclusion and ODL as fundamental principles which can be used to meet the needs of people with differently-abled. This framework must be viewed from two angles: the inclusive and the ODL. Inclusion must be seen as a dynamic process of participation of people within a network of relationships. Disability should be viewed as constructed through the interaction between the individual and the environment. ODL institutions should, therefore, focus on kinds and levels of interventions appropriate to the needs of people with differently-abled within specific programs. The material should be flexible enough to allow the people with differently-abled to participate in tutorials without hindrances.

The framework is affected by three fundamental contextual factors these being policies, funding and management. A positive disability policy will ensure that everybody is aware of what should be done when meeting the needs of the people with differently-abled. Adequate funding is important if appropriate study materials are to be provided and barrier free environments developed. Lastly, the inclusion of people with differently-abled needs to be properly managed, it cannot be left to chance alone. The development of ODL study material for all learners initially is very expensive but due to the law of demand and supply gradually reduces in cost. The literature review shows that not much has been researched upon in this area of including PWDs. This study, therefore, is significant because it will reveal what is currently happening in ODL adding on to our knowledge on current provision.

4. Challenges & Opportunities to include People with Differently-abled in ODL

Controversy over the issue of special, integrated and inclusive education still prevails. Advocates of special education argue that placing differently-abled learners among normal learners will lower their self-esteem and confidence. Opponents feel inclusive education is unrealistic in present circumstance because of lack of adequate support for teachers for quality pre-service and in-service education and training. Advocates of inclusive education believe that learners have the right to be educated in mainstream/regular institutions with their non-disabled peers. Inclusive education recognizes that all learners are different and they all learn at different paces. Institutions and mentors

need to adapt and change to accommodate all learners with different learners needs. Inclusive education can overcome discriminatory attitudes and increase acceptance of diversity in a society. Furthermore, the development of inclusive education is the best option for achieving education for all in Bangladesh, where there are serious resource constraints. It is not financially viable to build segregated special schools in locations that may serve just a few children with disability (UNICEF, 2003). The world today is much more aware of the problems of the people with differently-abled than before. Attitudes to differently-abled are improving globally. Disability is now diversity, not a deficiency. The integration of people with differently-abled in the society is, to some extent, linked with other factors as well. If they are looked upon as partners in development then thus can enhance integration by reducing the discrimination gradually. The concept of inclusion is based on human rights, equal opportunities, social justice and participation. Inclusion involves many stakeholders and is a process that is difficult to implement.

Despite all the attempts of the government to develop the overall condition of the people with differently-abled in general and that of the educational level in particular, their educational level is not satisfactory. Since the people with differently-abled are amongst the poorest of the poor, so the eradication of extreme poverty and hunger must include them. In Bangladesh, more surprisingly, most of the people with differently-abled are not aware about their rights. They are not organized, therefore, they are not empowered also to fight against discrimination and violation of rights. Though the government recognized the inclusive education in principle, but in reality it is yet to take any effective shape. Among many other challenges, when people with differently-abled are treated differently, they become socially isolated. This isolation hinders an individual's development of ideas related to their self-concept. These isolated children also develop a negative outlook on life while constructing thoughts about whom they are and considering other aspects of human identity as a social being.

5. Methodology

The study has been conducted applying a variety of methodologies, techniques and tools to find-out appropriate and authentic information on issues related to the education of people with differently-abled. This was designed following both quantitative and qualitative techniques of the research and data were collected from both primary and secondary sources. A focus group discussion (FGD) was conducted with concerned people with differently-abled to review the prevailing situation. Participatory observation has been made on the targeted respondents. For secondary data books, journals, newspaper clips, published and grey literature including edited archive records and other existing resources available were explored for gaining access to the updated

scholarship on disability and ODL. Analysis has been made on disability types, gender etc. The data were processed in a scientific manner and the framework for analysis of the secondary data was mostly discourse analysis. The data have been compiled by a computer's tailor made software in a tabular and graphic format.

6. Results presentation, analysis and interpretation

The results are presented in the order of the research questions. Triangulation was achieved through comparisons of the results.

6.1 General Information

The focused target group of the study was both the people with differently-abled in education or not in education. Among a total of 60 respondents people with differently-abled, 38 persons (63.33%) are male with 22 persons (36.33%) female.

Table 1: Gender of the Respondents

Gender	Total	Percentage (%)
Male	38	63.33
Female	22	36.66
Total	60	100

Source: Fieldwork, 2014

Out of total 60 respondents 32 persons (53.22%) were from age group of below 18 years, 17 (28.33%) from age group 18-40 years and 11 (18.33%) were from age group 41 years and above.

Table 2: Age of the Respondents

Age	Total	Percentage (%)
Below 18 years	32	53.33
18-40 years	17	28.33
41 years and above	11	18.33
Total	60	100

Source: Fieldwork, 2014

6.2 Disability Related Information

The disabilities of the respondents were grouped into four main types of disabilities as physical disability, visual impairment, speech & hearing impairment and intellectual disability. Besides these four major groups, disabilities under 'multiple' and 'others' were also considered. The maximum respondents were under physical disability (44%) followed by visual impairment (23%). The other two groups– speech and hearing and intellectual disability– were recorded at 16% and 9% respectively.

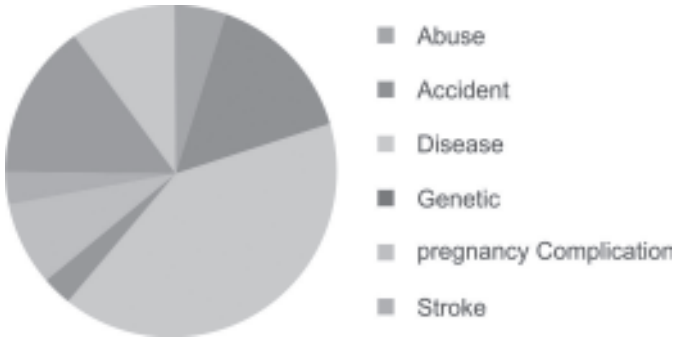
Figure 1: Types of Disabilities of the Respondents

Percentage

Source: Fieldwork, 2014

Among the causes of disability 5% happened due to abuse, 15% for accident, 41% for various diseases, 3% for genetic problem, 8% for pregnancy complications, 3% for stroke, 10% for wrong treatment and 13% for unknown reasons.

Figure 2: Causes of Disability

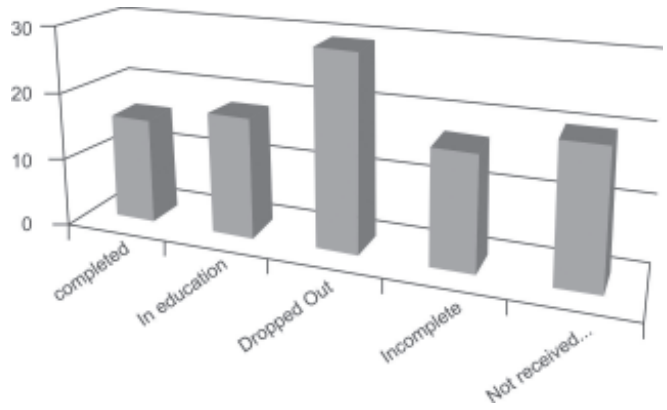


Source: Fieldwork, 2014

6.3 Education of the Respondents

The study revealed that some 80% of the respondents had received some form of education at some stage of their life.

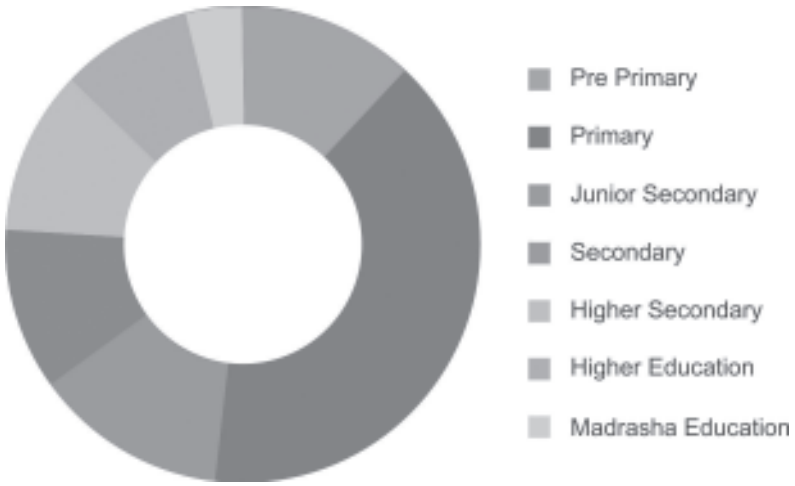
Figure 3: Education Status of the Respondents



Source: Fieldwork, 2014

The education level of the respondents comprised of 12% pre-primary, 40% primary, 13% junior secondary, 11% secondary, 11% higher secondary, 9% higher education and 4% Madrasha education.

Figure 4: Education Level of the Respondents



Source: Fieldwork, 2014

6.4 Focus Group Discussion (FGD)

In order to get a clear picture of the overall situation a FGD was conducted with 13 people, among which 7 people with differently-abled were presents.

Table 4: Participants of FGD

S. No.	Total	Differently abled	Types of Disability	Venue
1	13	7	2 x Visual Differently-abled 2 x Physical Differently-abled 1 x Hearing Differently-abled 2 x Intellectual Differently-abled	BRIDGE Foundation 55/A Purana Paltan LaneDhaka -1000

Source: FGD, 2014

6.5 Case Studies

6.5.1 Case Study 1: An Intellectual Disabled Girl Facing Difficulty with her Enrolment

Recently, an incident occurred in a public school, where a intellectually differently-abled girl, called Sathy, (due to the ethical consideration original names are concealed), came to seek admission at Grade-IV. The said school is very renowned in Bangladesh because of its high academic performance since its establishment. Sathy was born with an intellectually differently-abled disability and started her education in a special school designed for the gifted children from which she learned required skills for regular schooling. After two years of study there, she went to a mainstream primary school and successfully completed her elementary schooling. Every year, even though around 10,000 candidates compete in an admission test, the said public school provides only 200 seats in Grade-IV. The admission process of the school, consisting of written test (90 percent) and viva voce (10 percent), is quite transparent and beyond controversy. Sathy who has very good academic records in the class III final examination took the admission test (written) and was called for the oral test. As required, Sathy attended the viva voce in the following week after she received her written test result but could not qualify. She obtained very good marks (70 percent) in the written test, but got very less marks (30 percent, for qualifying requires 60 percent) in the oral test. Although one member of the interview board tried to convince other members referring the intellectually differently-abled situation of Sathy, but the principal was completely against allowing such students in his school on the ground

that this school did not have resources for her. Sathy's parents requested the principal to reconsider her admission but the principal recommended a special school for her study.

6.5.2 Case Study 2: Sakhina still Wonders where her Fate will Take her

When Sakhina's parents (not the real name) died during the Liberation War of Bangladesh, she had barely crossed her infancy. Since then, she grew up in her uncles' home on the outskirts of a semi-urban area of a district town. Her uncle had a tiny roadside grocery shop and could barely meet family expenses. As she was growing up which often without two square meals a day, she was determined to receive higher education and accordingly started going to a local school, which was 3 km away from the house. One fateful winter morning, she climbed up the tin roof to lay a blanket so that it would warm up in the sun. Suddenly she slipped and fell from the roof. She sell on her back. With the help of others she was carried inside the house, where she woke up a few hours later with severe back pains. She found that she could not move her legs. After receiving treatment from the local healers, she was sent to the Centre for the Rehabilitation of the Paralyzed (CRP) at Savar. After staying one year there she improved and then came back home, but she needed the support of crutches or wheel chair for movement. As a result she cannot go to the school as it is far away for her residence.

6.5.3 Case Study 3: Visual Impaired Baki Waiting for Bright Future - It's the Mind-set, not Physical Incapacitation that Matters!

Baki (not the real name), a teenager, lost his father before he was born. In his early life he was not a person with visual impairment. He lost his eyesight when he was 7 months old. But he opines that why should he lack behind for becoming blind? He wanted to go forward like others. But his mother, a house maid, could not arrange his admission in a school of their locality. No school near their house in the rural area had any arrangement of teaching the blind student. Finally with the support of a local NGO, his mother could arrange his admission in a school made for the blind children in the capital. Now he is very happy to continue his education. His visual differently-abled situation could not stop him from his passion to earn education.

7. Findings

All the information has been complied in a computerized database through which the analyses have been made. The study after compilation and analysis of the data collected through questionnaire, FGD, and conversation with relevant stakeholders and review of case studies came up with few important

findings, which reflect the factual situation of the education of people with differently-abled with indications to the different areas of concern.

The concept of inclusion is based on human rights, equal opportunities, social justice and participation. People with differently-abled can lead a better quality of life if they are provided equal opportunities and effective access to rehabilitation measures. While the conventional education system (formal schools) continues to be the mainstream of educational transaction, it has certain limitations with regard to access, equity and cost effectiveness for people with differently-abled people. The support of teachers is critical for any educational undertaking in general and for inclusive education in particular because teachers are agents of change. Teachers need support for their lessons and update their own knowledge. Making better use of resources forms the cornerstone of inclusion; therefore, making use of available resources to support learning is very critical.

8. Measures to Improve the Situation

This study came up with a set of recommendations, which advocates for national level intervention for strategic action targets for the placement and promotion of the ODL options for the people with differently-abled as follows:

- Inclusion of learners with differently-abled in ODL is a challenging task. But in the context of quality teaching-learning for all, Bangladesh is still a far away from effective inclusive education, which requires some additional arrangement within the mainstream system.

- Disability issues demand a wide range of program coverage relating to all common types of disability in the community. As such, all citizens should stand for an inclusive, right-based and barrier-free society for people with differently-abled by ensuring their equal rights, dignity and opportunities especially education. A relentless endeavor is required to create a barrier free society for them.

- The ODL options create learning opportunities for everyone, if accessibility considerations are made in the design process. While designing the curriculum, care should be taken for the special needs and should think about various assistive measures, which can help them to pursue the courses and programs smoothly.

- The educators must be careful in the selection of appropriate tools and methods that will allow the learners to do their work efficiently. With a partial modification in the existing system this can be made differently-abled friendly.

- Learners who are blind or who have specific learning disabilities that affect their ability to read may require that printed materials be converted into Braille, large print, audiotape, or electronic formats (digital sound files) etc.
- Open University can plan and execute many programmes such as vocational training, life skill training, social skill training etc for the differently-abled learners, so that more number of differently-abled learners can be enrolled in higher educational institutions.
- Fee exemption should be given to differently-abled learners which enable them to pursue higher education.
- Career guidance centres can be opened particularly for the people with differently-abled by collaborating with national institutes for differently-abled people.
- Open University should develop special learning packages and special equipments or devices to help differently-abled learner to enrol.
- Reservations and employment share of candidates with differently-abled should be implemented strictly. In all Higher Educational Institutions performance records of differently-abled students should be maintained and campus placement should be done to encourage them. In addition, a special placement cell should be open.
- Educational Institutions should frame balanced curriculum and Instructional material to differently-abled students which can meet the need of all different kind of differently-abled students.
- All the differently-abled students may not require same kind of teaching; so separate classes should be organised according to them need.
- Some of the basic needs of the students with differently-abled like presence of ramps at lecture halls, accessible toilets, wheel chair, Braille signage, wide doors etc, will facilitate to enrol more number of students in higher educational institutions.
- To attract good number of students in Open University attractive amount of scholarships should be extended to the students with differently-abled to meet out their requirements.
- For educating students with differently-abled, Open University can mobilize support from other departments such as health, industry, social welfare and voluntary organisations.

- ❖ The study recommends that disability specialists be involved in the creation and development of study materials both in print and electronic. Collaboration with organization of and for people with 'differently-able' and other ODL institutions will help bring critical expertise together to improve the inclusion of many people with differently-abled into ODL.

9. Conclusion

In making development meaningful, there is no alternative to include people with differently-abled in the development policy and process. Though Bangladesh had enacted disability legislation and had also adopted National Disability Policy, but the issues of education had not been properly addressed. Now the ODL is the need of the day and mass education is possible and can only be achieved through ODL. One of the primary concepts of ODL is to offer students facilities for learning anytime and anywhere. The ODL courses, resources and materials must be designed and delivered in such a way that the level of communication and course taking experience is the same for learners with or without disabilities. Otherwise, they can impose needless barriers to equal participation in academics and careers for potential students and instructors with differently-abled. The education of the children with differently-abled is not a matter of pity, grace or sympathy but it is a right. It is the responsibility of the government and society to make the arrangements to facilitate the education of all children with differently-abled without any discrimination. Isolating, children with differently-abled may give them a sense of inferiority complex. The important thing is to let the learners with differently-abled feel that they are welcomed. No one can anticipate everyone's needs, but one can let them know that he or she is willing and prepared to work with him/her for accommodating them to the best of his/her ability. It may take time to learn and adapt the new methods and some of the special techniques. But it needs to get started somewhere. Therefore, effective inclusion of learners with differently-abled in the mainstream ODL can play a vital role for ensuring "Education for All" by 2015 in Bangladesh. Let's make the environment friendly for the people with differently-abled in order to allow them to live without obstacles!

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MOOCs and the Indian Higher Education Landscape

Geetika Dutta

Faculty, FDRC, Army Welfare Education Society (AWES),Delhi
geetikamehtadutta@gmail.com

Abstract

The year 2012 heralded a revolution in the field of higher education known as MOOCs (Massive Online Open Courses) as they are the most "buzzing" technology-enabled educational innovation of the present decade. A massive open online course (MOOC) is a type of online course aimed at large-scale participation, which is openly and freely accessible via the web. MOOCs are a recent development in the area of distance education, and are considered to an educational revolution rooted in the ideology of Open Education Resources (OERs). The paper discusses in detail the concept and evolution of MOOCs, its different types i.e. cMOOC and xMOOC; its principle philosophy i.e. Connectivism; and the principle challenges which it is facing inspite of its earning the status of a world-wide phenomenon. The paper tries to capture the impact of MOOCs in Indian Higher Education system in the long run and the challenges and promises which they will bring to the Indian Students.

Key Words: MOOCs, cMOOC, xMOOC, Connectivism, Indian Higher Education

Introduction

The year 2012 heralded a revolution in the field of higher education known as MOOCs (Massive Online Open Courses) as they are the most "buzzing" technology-enabled educational innovation of the present decade;and quite rightly so as they have been the hottest topic of debates and discussion in any educational forum internationally.A **massive open online course** (**MOOC**) is a type of online course aimed at large-scale participation and open access via the web. MOOCs are a recent development in the area of distance education, and a progression of the kind of open education ideals suggested by Open Educational Resources(OERs) (Wikipedia, 2013).

MOOCs are online learning platforms which operate via both synchronous and asynchronous modes. Learners across the globe log in to participate and interact in live lectures and discussions on various forums. Learning lakes place through self-organized networks and collaborations via blogs, wikis, discussion forums, commenting on each other's work. Emails are sent to participants on a regular basis which are aggregate of all activities done during the period. MOOCs are basically rooted in the principles of "Connectivism" which talks of situating learning in a network of connection made between individuals and textual material.

Professor Eric Thomas, Vice-Chancellor of the University of Bristol said: "This is an important step forward in opening up the channels by which individuals can access some of the highest quality educational opportunities. In a world where people increasingly access content in a multiplicity of ways, it is only right that Higher Education can be accessed by alternative and complementary methods." The following are the two most important features of MOOCs which distinguish it from other forms of education (Wikipedia, 2013):

- **Open access**. MOOCs are freely available and open to all and are not required to pay a fee.
- **Scalability**. Most of the traditional courses are carried on by way of direct/indirect interaction between a smallratio of students to teacher, but the "massive" in MOOC suggests that the course is designed to support large and indefinite number of participants at the same time.

Other important features associated with early MOOCs, such as open licensing of content, open structure and learning goals, community-centeredness, etc. may not be present in all MOOC projects. Though the design of and participation in a MOOC may be similar to college or university courses, MOOCs typically do not offer credits awarded to students at regular colleges. However, assessment of learning may be done for certification.

Genesis of MOOC Movement

"MOOCs represent an enormous development in higher education, one that has the potential to bring about long-lasting change to the HE [Higher Education] sector," said Martin Bean, Vice-Chancellor of the Open University, UK. The roots can be traced decades ago. Britain's Open University started teaching via radio and television in 1971; the for-profit University of Phoenix has been teaching online since 1989; MIT and others have been posting lectures on the internet for a decade. The term, massive open online course, was coined by Dave Cormier and Bryan Alexander in 2008 to describe a

particular model of online course developed by fellow Canadian academics Stephen Downes and George Siemens and originated out of the open educational resources movement (UNESCO-IITE, 2013). It was in response to an open online course designed and led by George Siemens, associate director, Technology Enhanced Knowledge Research Institute at Athabasca University and Stephen Downes, Senior Researcher at The National Research Council (Canada). The course was called "Connectivism and Connective Knowledge" and was initially presented to 25 tuition fee-paying students in Extended Education at the University of Manitoba in addition to 2,300 other students from the general public who took the online class free of charge. The course content was available through RSS (Rich Site Summary) feeds where the learners could access frequently updated data like blog posts, news headlines, any audio or video content, threaded discussion in Moodle, second life etc. along with details (known as 'metadata') likethe author's name and publishing date.

MOOCs as a world phenomenon gained recognition in the year 2012 when Stanford University started enrolments for it MOOC programme 'Introduction to Artificial Intelligence' taught by their professors from Computer Science Department, Peter Norvig and Sebastian Thrun. This course became a huge success with enrolments to the tune of one lakh and sixty thousand students out of which twenty- three thousand students completed it. The huge numbers gave an idea to the pioneers that by this mode they were together able to reach more students in the world combined in a year than all professors in the world combined. This led them to completely change their perspective and they thereafter gave up their Stanford tenure to found Udacity, a dedicated institution for MOOCs. In the same year another very significant venture came up with Coursera which was launched by MrThrun's ex-colleaguesm Andrew Ng and DapheKoller who invested a venture capital of $16 million in collaboration with four universities for offering online courses to students. Their course on 'How to reason and argue' attracted a record of 180,000 students. Thereafter Harvard and MIT also joined the bandwagon and launched edX, a non-profit venture in collaboration with various Ivy League universities with an investment of $30 million each.

The MOOC phenomenon did not confine itself only to America, it stretched far beyond the US. Presently eight among Coursera's 33 partners are from different parts of the world including Universities of Edinburgh, Toronto and Melbourne. In December same year a consortium of British universities including Bristol, St Andrews, Warwick and led by the Open University launched Futurelearn, a new platform to compete with their American counterparts

thereby signifying that MOOCs are worldwide educational phenomena. In addition to the above other prominent players in the field are Udemy, P2Pu among others. In India, the Human Resource Ministry (HRD) launched SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds), a web based portal using openEdx as a platform.

Logistics of MOOCs

Because of the massive scale of learners, and the likelihood of a high student-teacher ratio, MOOCs require instructional design that facilitates large-scale feedback and interaction. There are two basic approaches or typesof MOOCs as posited by Stephen Downes (2011):

- **cMOOC** (**Connectivist MOOC**): emphasizes social learning and participation, relying heavily on social media and syndication to decentralize the learning process; Crowd-sourced interaction and feedback by leveraging the MOOC network, e.g. for peer-review, group collaboration. It emphasizes students as equal contributors to the learning experience.cMOOCs utilize the latest internet technologies to motivate and help learners collaborate, facilitating the process of a high number of people learning together

- **xMOOC**: it is based on the principle of minimal, asynchronous support and often positions the instructor/ subject-matter expert as recording the content and planning assessment (UNESCO-IITE, 2013). They emphasizes content mastery, centralizes courses on one website and uses automated grading tools, automated feedback through objective, online assessments, e.g. quizzes and exams etc to support hundreds of thousands of students. The model is supposed to run the same classes throughout the year with the best performing students acting as guides/ community teaching assistants to the new entrants.

Connectivist Design Principles

Traditionally, Learning theories are divided into three main categories i.e. Behaviorism, Cognitivism and Constructivism. Another category albeit a disputed one which is added to these categories is 'Connectivism' which *sees the network as a central metaphor for learning, with a node in the network being a concept (data, feelings, images, etc.) that can be meaningfully related to other nodes. Not all connections are of equal strength in this metaphor; in fact, many connections may be quite weak (Wikipedia, 2013)).*Connectivism is a theoretical framework for understanding learning in which, the starting point for learning occurs when knowledge is actuated through the process of

a learner connecting to and feeding information into a learning community (Kop and Hill, 2008). Connectivism sees the network as a central metaphor for learning, with a node in the network being a concept (data, feelings, images, etc.) that can be meaningfully related to other nodes. Not all connections are of equal strength in this metaphor; in fact, many connections may be quite weak (Wikipedia, 2013). According to Siemens (2005) Learning is a process that occurs within nebulous environments of shifting core elements – not entirely under the control of the individual. Learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing (Siemens, 2005). Connectivism is driven by the understanding that decisions are based on rapidly altering foundations. New information is continually being acquired. The ability to draw distinctions between important and unimportant information is vital. The ability to recognize when new information alters the landscape based on decisions made yesterday is also critical (Siemens, 2004).Therefore, connectivism is based on the idea that instead of entering lots of information in one's head, it is more advisable that the learning should focus on where to find information and how to connect ideas and concepts. *Knowing the pipes is more important than knowing what exactly each pipe contains at a given moment* (The Peeragogy Handbook, 2013). MOOCs are based on the ideology of connectivism and the idea of volatile nature of knowledge and information. It is mooted on platforms where people are free to participate and voice their understanding and perspectives. Therefore, it is important for learners to be discerning enough to understand the difference between authentic and unauthentic inputs.

MOOCs are based on several principles stemming from Connectivist pedagogy. The principles include (Wikipedia, 2013):

1. *Aggregation*. The whole point of a Connectivist MOOC is to provide a starting point for a massive amount of content to be produced in different places online, which is later aggregated as a newsletter or a web page accessible to participants on a regular basis. This is in contrast to traditional courses, where the content is prepared ahead of time.
2. *The second principle is remixing, that is, associating materials created within the course with each other and with materials elsewhere.*
3. *Re-purposing* of aggregated and remixed materials to suit the goals of each participant.
4. *Feeding forward*, sharing of re-purposed ideas and content with other participants and the rest of the world.

Siemens (2005) has given the following list of Connectivist Principles:

- Learning and knowledge rest in diversity of opinions.
- Learning is a process of connecting specialised nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

There are many benefits to adopting MOOCs as a source for knowledge augmentation. The learning occurs in an informal setting in comparison to a classroom setting where a strict curriculum may be present. One of the advantages of having an informal classroom setting is that the students are afforded to choose from a wide variety of assignments rather than being required to submit the same assignments at the same time. From an educator's standpoint, MOOCs are relatively easy to set up using free open source tools and tend to have low startup costs. All work, thoughts and instruction can be shared, viewed and critiqued by all the participants of the course. MOOCs are usually free and all that is needed to participate is an internet connection. Students don't have to enroll in the institution which hosts the MOOC and these kinds of courses provide students with the flexibility to perform the course work based on their time availability. Language barriers are less of a concern to students because of the availability of website translation services. Due to their interactive nature, MOOCs allow for direct immersion and engagement within the topic at hand and allow for digital skill development. MOOCs can also serve as a potential networking hub for people interested in the topic of the courses being taught.

Challenges for MOOCs

On the face of it, MOOCs seem to be a boon for students not only in the countries in which they have originated (UK, USA) but also in countries such

as India, though for different reasons. In the western countries, huge cost of Higher Education have forced people to look into various alternative options to educate themselves, whereas in India, an individual will have to score an absurdly high score to be in an institution of some decent reputation. The main reasons why people from different walks of life like to join institutions of Higher Education are:

1. Access to expertise and high-quality teaching materials
2. To be surrounded by similarly motivated people
3. The promise of a transformative experience
4. A certificate that is valued by the marketplace
5. Employability, job skills, etc.

Right now the MOOCs of the world are focused on (1), and to a lesser extent (2) and (3). Also, students generally receive a certificate (not equivalent to degree or diploma) for completing the courses, but do not receive any academic credit toward any conventional degree qualification, which is a deterrent for future employers in recruiting these passouts. Although some MOOC options do provide an opportunity to students to gain proper certification on payment of a fee.

Another major challenge which the MOOCs are facing is on the sustainability model. By principle MOOCs do not charge any fee from the students, but the costs of running and maintaining the platforms are quite high. So if MOOCs are to sustain themselves in the long run, they have to be self-sufficient since the cost of designing online material and maintaining online platforms is quite high. That is the reason for which even the non-profit ventures such as edXalso want to break even. Others have investors to satisfy. There are number of sustainability models which are being developed. The first way of generating revenue is a "***freemium***" model, in which the course is free but the graduation certificate is paid-for. Udacity, for example, charges $89 for an exam invigilated by Pearson VUE, an electronic-testing firm; its parent company is a part-owner of this newspaper.Coursera also says it will soon start charging fee for branded certificates, so students can actually get degrees/ certificates from the most renowned institutions at a fraction of cost of physically studying there, thereby increasing their employability quotient. It also has plans to charge for an offline, proctored exam. EdX recently announced that students would get a chance to take their invigilated finals at Pearson VUE's test centres around the world. A second model is to charge potential employers a fee for spotting suitable recruits among the students.

Courseracharges for referralsto its best students. A third option is licensing the online courses to universities so that they can run their programmes in blended mode and this mode is seen as having a huge potential by way of which the universities can mix the best of their in-house provisions and the best of MOOC offerings to enrich the learning experiences of its students. It also translates to a scenario where the institutions and universities not in the elite ivy league can also think of giving world class learning experiences to their students by offering a supplementary second virtual university. In due course of time it might lead to reduction in the need for costly campus facilities and free teacher's time for individual tutoring. This approach can be exceptionally useful for a country like India, where it has been widely acknowledged that no universities are bad only there are uninspiring teachers. So for students studying in tier 3, 4 …..7, 8 colleges can be exposed to the best of experiences in the world.

Another major challenge which MOOCs face is the debate whether online education is education in its truest sense. Can it replace the classroom when it comes to learning? It has been widely acknowledged that online learning can be great companion to traditional schools, but it does not replace the classroom when it comes to learning. Online courses are great for certain subjects such as artificial intelligence, or other technical courses but an analysis of responses of participants of such courses gives an impression that instruction in a few key areas does not transfer well in case of online learning. A number of students when shifted from the online mode to a traditional college, vouched for more learning and retention in case of traditional modes. Online is a great companion to traditional schools, but it does not replace the classroom when it comes to learning.Also, learning is a complex social and emotional process that promotes critical thinking, say MOOCs critics. Learning few technical courses for further enrichment is a different matter but courses which are rooted in and enriched by mutual interaction viz. Socratic style which happens to be the mode of instruction for most of the social sciences based courses, the viability of merely interacting via some synchronous and asynchronous means is questionable. These course invariably require students to analyse, discuss, debate, articulate, negotiate various issues from various perspectives, which tend to happen more authentically via the traditional modes. Also these modes of education require high level of maturity and sense of responsibility for learning on their own which is considered alright at the post-graduate level. But when it comes to under-graduate education, it is considered that this is the time when one discovers one's place in the world, what it means to be human and develops a sense of joy for the life of the mind (Katsouleas (Dean of Duke University's Pratt School of Engineering) 2012 in Forbes). Will online education allow universities to do

that even better? Maybe, if the universities follow a blended approach, MOOCs will allow students to be better prepared and focused with their interaction with the faculty. And definitely MOOCs are the most preferred form of life long education for professionals and corporate sponsored professional development programmes.

MOOCs and Indian Higher Education System

A sound higher education sector plays an important role in economic growth and development of a nation. Higher education, which is entrusted with the objective of equipping students with requisite knowledge and skills to be gainfully employed and also to be a fruitful member of society, therefore is highly relevant and important for education system of any country. India has one of the largest systems of highereducation in the world offering facility of education and training in almost all aspects of human creativity and intellectual endeavour. (ASHE, 2013).Indian Higher Education system cannot stay unaffected in the long run by the huge MOOC phenomenon. Sooner, rather than later effects will be felt in the Indian Higher Education scenario. The Indian Higher Education scenario is growing at a phenomenal rate especially since the late 1990s the higher education market is growing by 7 percent a year (Kaul, 2006). According to FICCI and E&Y Report (2012) supported by Planning Commission of India, the number of universities in India has grown by a little more than 6% since 1970-71 whereas the student enrolment has grown by more than 12% over the same period of time. Also according to the same report India ranks second in the world in terms of enrollment of students in Higher Education. Another interesting trend which is noted is the number of distance education institutes has been growing at a healthy pace in the country. Currently, there are almost 200 institutes offering distance learning programmes. Also enrollment in distance education has grown at an annual rate of more than 11% in the last three decades. But it has been seen that although student enrolment has gone up by six times in the last 30 years, but faculty strength has grown only by four times resulting in high student-teacher ratio and shortage of faculty (FICCI and E&Y Report, 2012).

If we talk of quality standards, as of March 2010, only 32.3% of the total number of Indian universities and 13.1% of colleges had been accredited by the National Assessment and

Accreditation Council (NAAC). Only two Indian higher education brands featured in the World University Rankings 2011-12 of the top global universities. The only saving grace in the field of Indian Higher education system happen to be Indian Institutes of Technology (IITs) and the Indian Institutes of Management (IIMs) where the more than seventy students vie

for each and every seat. And it has been acknowledged that in the process of studying for these stringent exams, they sharply raise their own academic standards relative to other students (Rines, Brown and Karthik, 2005). This inherently leads to students demanding better higher education facilities and standards. Edinburg Report (2013) has pointed out that people of Indian origin ranked third among all the counties in the world in terms of enrolment in various MOOC courses with 4.6% people of Indian origin of the entire MOOC population.

The fact that students in due course of time can get certification from world class players such as Harvard, Stanford, MIT through Coursera, EdXetc off-campus online paying a marginal fee will have huge impact on institutions of higher education in India. It can spell doom for poor-quality second-tier or third-tier institutions offering various diploma courses. Various industry surveys indicate that students qualifying from higher education institutes lack the high-quality skills required, which lead to employability issues. Therefore, in the context of current demographic structure of India where the majority of population is below the age of 25 years, the role of higher education is critical.

The well-informed and well-motivated students will definitely shift online for their higher educational requirements. Report # 1 of Edinburg on MOOCs (2013) states that the proportion of Indian-based students form a huge majority next only to US and UK. Therefore, we can safely say that Indian students are all set and do form a huge majority of the MOOC revolution. In fact, one of the key initiative advocated by the Planning Commission of India is to establish meta-university framework to promote inter-institutional collaboration and use of Massively Open Online Courses (MOOCs) to improvise upon the content, teaching and research support for all the members of Higher Education (ASHE Report, 2013).

But again, specialists are skeptical about the proportion of these intrinsically motivated students. In the words of Shankar Venkatagiri(2012) Professor from IIM-Bangalore “We are a generation that has been mollycoddled and spoon-fed every single thing. Let’s not kid ourselves about self motivated learning,” he says. Prof. Venkatagiri points out that the average college student in Karnataka is not particularly impressed with a MOOCs course. “He will be much more focused on passing the syllabus. Only the exceptional student will say, wow, this is awesome,” he adds. Therefore, he doesn’t regard MOOCs to be such a great threat.

Instead, Prof. Venkatagiri says that the MOOCS revolution can provide a rare opportunity to finally reform the education system. “Universities are rarely sub-standard, teachers are,” he says. In view of the huge demand for MOOCs,

the Human Resource Ministry (HRD) launched SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds), a web based portal using openEdx as a platform in which MOOCs will be offered on all kinds of subject areas. As of now, it is expected to offer only three technology based courses one backed by UC Berkeley's and two from IIT Bombay. Other Indian institutes are also expected to join soon. It is expected that such initiatives will have a manifold impact on the quality of higher education in India. In order to give a boost to quality higher education in India and also to make the students geared towards the challenges of a global market, universities can be roped in for designing of different MOOCs in diverse subject areas. University approved MOOC whether short term basic or long term advanced course can be taken by student, thus MOOC can provide the Indian students an edge required to compete in the global market (Devgun, P, 2013). Also these measures will encourage tier 2 institutions to subscribe to a unified syllabus and standard to take advantage of this influential platform. These efforts can really establish a parity in the vast diversity that exists in the quality and standard of higher education provided by various central, state, deemed and private universities and institutions.

MOOCs represent an industry which is evolving at a furious and galloping pace. Only time will tell the way in which it is actually going to tackle the countless flaws pointed out by fans and skeptics alike. There are a number of issues like how an online course be equated to an offline course, are MOOCs based on sound principles epistemologically?, how can one grapple with issues of valid and reliable students assessments, how much faith can we place on peer and self-assessments and at the same time assessing the overall competencies (knowledge, skills and attitudes) among students. These are the issues which MOOCs have to face. But we do have to accept that they have the potential to "become a crucial lifeboat to hang on to. It can also be a lifeline for vast populations of underserved youth. There are unmined pearls in the vast beaches of tier 3, tier 7 and tier 11 colleges," says Shankar. "MOOCS gives them a pathway out of hell."

Since, the whole concept behind MOOCs is a relatively new one, there are potential challenges or issues which students "enrolled" may face. Also in a country like India, where the diversity in terms of educational standards and expectations and way too much, and also when we are grappling with perennial issues of universal elementary education, regular electricity supply, internet literacy etc, the MOOCs roadway is littered with the following issues:

- *The need for basic digital literacy*: As books donot teach their own use, same is with computers and online courses. The students need to have a basic comfort level with computers beforehand in order to be able to

benefit from such sources. And in a country as diverse as India, where we have IT hubs on one extreme, and on the other extreme areas with virtually no access to electricity, how can we expect these two Indias to come together and benefit from international online communities and courses is a very pertinent question which we all need to consider.

- A feeling of confusion and disorientation for students who are used to strict, syllabus directed, lecture courses: MOOCs are basically meant for self-motivated and self-directed students who are capable of taking responsibility for their own learning. A huge majority of our students may find it difficult to fully take on the responsibility for their own learning, owing to huge dependence on teacher-centered methods of instruction followed in our country since times immemorial.

- Language barrier: A huge proportion of our population is not comfortable with English. And although, these programmes do have the option for translation, still these translations won't be available for all regional languages. It will require humongous efforts on the part of our government and individuals to come up with courses in all national languages.

- Need for self-discipline on the part of students: The students' need to be self-motivated and self-regulated and be ready to take on the responsibility for their own learning. This might be a bit difficult for our students since they are not used to learner-centered methods of instruction across levels. Also direct interaction with the course instructor is minimal and therefore, the lack of in person, real world socializing, presenting and practical experience may leave many aspects lacking.

- The increased likelihood of academic dishonesty, particularly with online examinations, assignment submissions, peer assessments etc. due to a lack of proper regulation and supervision.

- Technical difficulties associated with the complete reliance on computers and internet connectivity.

- Difficulty in assessing complex learning of potentially tens of thousands of students whose intent may be to document learning to current or future employers or other higher education providers.

- With continuing pressure on Universities to offer free courses, their income base is eroded as students can choose online courses instead of paying fees.While this might initially seem to be a good thing for the individual student, the short term advantage will lead to more and more students getting degrees while the labour market might not support the

supply. This might allow employers to demand lower wages and will lead to devaluation of degrees.

- To compete head-on with established providers, MOOCs must not just teach but also provide credible certification. This may be one reason for MOOCs' high drop-out rates. In order to really succeed as a mass education platform the MOOC really need to work in this direction and come up with concrete plans on how to provide authentic and reliable certification to its students.

Conclusion

MOOCs are unquestionably taking us in a new direction. How far we go and where we reach will be determined only by how much we push the limits of our imagination, our resources, and the kinds of community partnerships that can make it possible to get information across the final mile.

MOOCs really can provide the platform to expand the audience especially in the field of adult education, life long education and education to people who have typically been excluded from the education system. The real challenge lies in partnering of leading academic institutions with grass-root level institutions so that the benefits can be reaped by people in far flung and remotest of areas. it requires lot in governmental as well as private philanthropist efforts in the form of translation of content, literacy efforts, access to physical resources such as computers/ tablets and above all regular supply of electricity and internet connection.

MOOCs is a huge global phenomenon and it is here to stay. It now depends on how we are able to truly utilize its mass potential in making our country and society truly global.

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Technology Mediated Learners' Support Services in Open and Distance Learning: A Survey

Niradhar Dey

Assistant Professor, School of Education, IGNOU, New Delhi-110068
niradhar@ignou.ac.in

Abstract

Indira Gandhi National Open University (IGNOU) is one of the mega universities over the globe running its academic programmes in various disciplines starting from certificate to doctoral degrees. To transact its programme and to provide support services to the students, IGNOU uses various sophisticated educational technology. A survey was conducted on 100 students (selected purposively) in various level of the programmes. Discussion of the result focused that, the students were realizing that technology is an integral part of their study. Most students had positive attitude to use technology added with Self Learning Material what they have received to do their study. Major sections of students were directly accessing it and getting its benefits whereas, sections of learners were unable to use it because of their diversification, communication etc. The difficulties what the students faced relating to use of technology were the major concern to address and solve it.

Key Words: Technology Mediated, Students' Support Services, Interactive Radio Counselling, Audio-video Teleconferencing, Self Learning Material, Computer Mediated Online Learning.

Higher Education and the Country Need

Higher Education occupies a significant position in education system of a country. The days have gone, when we only depend upon one system of education. In the era of globalization, we experience international collaboration in knowledge acquisition and transmission. Cultural exchange in education and other heritage observes at the apex. Today's students' community is trying to utilise all the experiences and innovative practices in their intellectual

discourse. The leading knowledge centres like; the top universities in the world are coming closure to the students by ensuring their presence and collaboration with many other universities/institutions throughout the country. Education is not a dream for the common people in most developed and developing countries. Most countries have made it compulsory to elementary education for its citizen. It has also been realized as fundamental right in many countries like; Right to Education (RTE) in India (MHRD, 2010-11). Not only elementary education, but also secondary and senior secondary education is becoming a right for the children of many countries.

From last few years it has observed that students enrolment in many countries have increased significantly. Drastic expansion in school and higher education has taken place in the recent past all over the world. General, technical, vocational, and professional courses like: engineering, medicine, computer, management and teacher education have rightly introduced in different colleges and universities. The doors of higher education have opened for the masses, now it is not only for the classes. A young student of a poor socio economic background family can take higher education by using different modes of its practices.

Though few courses in higher education are costly, but many such courses can be affordable for the lower and middle class people. Even if one can pursue a course of his/her own interest by taking an educational loan or scholarship from government or different private funding agencies. Presently nationalised banks in different countries have instructed by the government for providing educational loans. Educational exchange programme between the countries are also motivating the young students to be educated and pursue education of their choice and exchange themselves to the institute of national and international importance.

In India, a significant increase in the number of colleges and universities has observed in last few decades. Indian higher education occupies the second largest system of higher education in the world after USA (Tiwari, 2010). According to a statistics of "Higher Education at a Glance", UGC, 2012, a total of 634 universities, 33023 colleges, have existed in India, in which nearly 17 millions of students have annually enrolled with a share of 41.5 percent of girl's students (UGC, 2012). In spite of an impressive quantitative expansion of higher education, India is still behind the most developed and developing countries like: Kanada (100 %), USA (80 %), France (50 %), U. K. (30 %), Egypt (20 %), Thailand (20 %), Mexico (16 %), Brazil (11 %), and Turkey (10

%). India covers only 7-8 percent of the age group receive higher education (Mahakud et al. 2012). Again and again it proves that the matter of higher education may not for all, rather it is for few.

ODL System in India: An Over View

Accessing higher education is also not a matter for all in a single mode practice. Realizing the growing demands of higher education, the government of India is operating three system of education i.e. conventional face-to-face system of education through conventional universities or equivalent institutes, Open and Distance Learning through the Open Universities, and both type of practices from the dual mode universities/institutes. From recent past it has observed that a large section of student mass have attracted towards the Open and Distance Learning system may be because of geographical, social, cultural, economic, linguistic, or gender limitations. Distance Education system in India has emerged as an alternative as well as complementary channel of education and training in India. It has already established its credibility and recognition not only in India but also over the globe. Furthermore implementation of ICT gave a new initiation to open and distance learning in India (Panda et al. 2006).

The right of getting higher education of the above group of students cannot be neglected; rather an equivalent treatment and opportunity need to be established for them. For fulfilling the need of the above categories of students and also those are engaged in different world of work/profession and desire to update their professional development through pursuing higher education, for them, an effective alternate system of Open and Distance Learning (ODL) is rightly present and functioning in India.

At present 14 Open Universities have established in India including one National Open University, i.e. Indira Gandhi National Open University (IGNOU), which is functioning in an international set up and another 13 State Open Universities have existed in different States. Besides the Open Universities, more than 200 dual mode universities are also equally offerening many distance education programmes. Presently 20 percent (approx.) of enrolment in Indian higher education of its total enrolment has covered by Open and Distance Learning system in which IGNOU alone cover 15 percent and other State Open Universities cover five percent students. Let us have a look to the present status of IGNOU.

Table 1: IGNOU at a Glance

Status	Achievement
Programmes on Offer	226
Learners Enrolment in 2013-14 (Fresh and Re-registration)	722390
Stunts on Rolls	3074377
Schools of Studies	21
Regional Centres	67
Learner Support Centres	2667
Overseas Centres (in 40 Countries)	67
Academic Counsellors (Approximately)	33212
Learners awarded Degrees / Diplomas / Certificates during 27th Convocation held on 16th April 2014	238276
Total Volume of Course material printed in 2013 (in million)	22.32
Audio / Video Programmes produced so far	2258/4375
Teachers and Academics	810/574
Administrative (including Group D Staff)	2456/1330

(Source: Academic Programmes on Offer, IGNOU, 2014-15)

The above Table 1, depicts a clear picture of IGNOU in its present functioning and the achievement in last 25 years. Accordingly distance education in coming days in India may be a challenge for the administrators to maintain the same gravity and quality in all aspects. The programmes which have offered by IGNOU have widely accepted by country and global knowledge society. Growing scenario of Indian Distance Education raises the expectations of learners. Some how, students satisfaction and dissatisfaction has become an issue in Indian Distance Education System. The teachers and the academicians felt it very closely to renovate the system and provide an adequate learner support services.

Over the years, different synonyms have been used to understand distance education; of course it is because of the development of the concept of distance education and the practices in the changing scenario. Various terms used in this context like; distance education, correspondence education, home study, self study, independent study, external study, off campus study, open learning, open education, open and distance learning etc. We can not say that the use of different terminologies are baseless, rather the practices started from the development of first generation of distance education towards the forth generation of its development means starting from correspondence education/ postal education to online education or from conventional print media to the use of highly sophisticated electronic medias.

Distance Education: Concept and Diversification

The concept of Open and Distance learning opined by Commonwealth of Learning is worthwhile to be noted here:

- Separation of teacher and learner in time or place.
- Institutional accreditation of open learning institutions.
- Use of multi-media courseware including; Radio, TV, Video, audio cassettes, computer based learning, and telecommunications.
- Use of communication technologies can be synchronous and asynchronous.
- Possibility of face-to-face meeting with the tutorials, peer group interaction, library, laboratory, and practice sessions.
- Use of industrialised process, that is, in large scale open and distance learning operations, division of labour for classifying academic and non-academic works.

*(**Source:** COL, 2000)*

The most common broad features of Open and Distance learning can be summarised as follows:

- No upper age limit for pursuing the courses/programmes.
- No rigidity in qualification.
- Openness with regard to place and time of study.
- Flexibilities in selection of courses.

- ❖ Credit accumulation and self paced examination system.
- ❖ Use of varieties of educational technologies and Information Communication Technologies (ICT).
- ❖ Multiplier effect.

The use of democratize of education has also better practiced in open and distance learning system which may not be practice in conventional system because of the rigidity in course transaction and time, pace & place of transaction.

Flexible approach adopted in distance education to realize the democratic practices may be for;

- ❖ Providing opportunity of learning to those, who do not have direct access to face-to-face teaching, working person, house wife etc.
- ❖ Providing opportunities to working professionals to up date their knowledge, and to enabling them to switchover to new disciplines and professionals and enhancing their qualifications for career advancement.

Catering student is an important task in open and distance learning system. Students are diversified in open and distance learning system. Students' diversity in open and distance education occurs in the form of:

- ♦ The geographical situation where the students belong.
- ♦ Distance of the students from the institute of transacting the course.
- ♦ Language and other living practices.
- ♦ System of education prevails in overseas countries.
- ♦ Qualification and educational experiences of the students at the time of entry in a particular programme.
- ♦ Age variation of distance learner.

Technology Mediated Communication in Distance Education

For providing a uniform and effective technology supported teaching-learning environment to the distance learner is the need of the time. The right of the distance learner need to be fulfilled and it can only be possible through using a better system of technology mediated learning. Let us discuss what technology supported learning being practiced in open and distance education. Both conventional and highly sophisticated electronic media need to be used

in distance education as the learners are diversifying in different natures as discussed above. Figure-1, placed below completely highlighted the use of technology and transacts the curriculum from the distance teacher to the distance learner.

Figure 1: *Communication in distance education*

(***Source:*** *MADE, SLM, IGNOU, MDE-418, Block-1 p.20)*

To analyse Figure-1, we find that, distance learning practices is highly depends on the use of technology mediated learning. The more we use the technology, the more we reach at the distance learners in different categories of their diversification. Some are able to manage using conventional educational technologies; others feel comfortable to use sophisticated educational technologies including online experiences internet, e-mailing, follow social media, blogs etc. Now without a vivid use of educational technology we can not expect better management and success in distance education. In recent

time we use the varieties of technologies like; audio-video programme, telecast and telephone, teleconferencing, interactive radio counselling, internet and e-mail, mobiles and online learning platform. Technology mediated learning attracted the students from conventional face-to-face system to open and distance learning system. In this context, Maxwell (1995), stated "Open learning is defined as a student-centred approach to education that removes all barriers to access while providing a high degree of learner autonomy. Distance education refers to a mode of delivering a course of study in which the majority of communication between teachers and students occurs non-contiguously, and the two-way communication between teacher and student necessary for the educational process is technologically mediated. Distance education may or may not be based on open learning ideals".

A Survey

Learners Support Services is one of the major considerations in the open and distance learning system, particularly to create among the learners, a sense of belongingness to the institution. Now a days, students support services has been taken a new shape after introducing effective technology in the field of education. With the introduction of electronic media to support the learners such as: audio, video, broadcasting, computer mediated online learning, internet, virtual classroom, the nature of support services has also undergone tremendous change (Pandey and Parveez, 2006).

For realising the above discussion of technology mediated or technology supported distance education scenario, a small survey of IGNOU students was conducted by the investigator to know how far the students manage to use technology for preparing their studies and to solve the difficulties they face during their study.

In this study an attempt has been made study the effect of **technology mediated students support services in open and distance learning". Descriptive survey method has been used to conduct the study.** For getting data relating to technology supported learning, a **self made unstructured interview schedule** has been used. **A sample of 100 learners selected purposively** from different levels such as: **Diploma, Bachelor, and Master Programme learners** have been asked about, how they use different technologies provided by IGNOU as a part of transacting distance curriculum during their studentship period. The sample covered the students those had enrolled in various programmes during 2009 to 2011. The students had diversified in various natures like: rural/urban, low and high socio-economic background, gender, religious and language practices, easy and extreme

geographical region etc. Descriptive statistics like: percentage and measures of central tendency have been used to analyse the data.

Analysis and Interpretation

The data relating to use of technology supported learning by the students have placed in different tables and analysed as follows:

Table 2: *Students demography and use of technology*

Student	***Rural***	***%***	***Urban***	***%***	***Male***	***%***	***Female***	***%***
Diploma (N=50)	20	40	30	60	35	70	15	30
Bachelor (N=30)	10	33.33	20	66.67	22	73.33	08	26.67
Master (N=20)	7	35	13	65	15	75	5	25
Total (N=100)	37	37	63	63	72	72	28	28

Table 2, revealed that 63 percent students were from the rural areas and 37 percent students were from the urban areas. Gender wise classification of students shows that 72 percent students were male and only 28 percent students were female. It shows that in open and distances learning the most attracted students were from the urban areas and there is still a large gap of male and female enrolment in distance education.

Table 3: Technology supported learning in ODL System

Technology	***Programmes***							
	Dip. (N=50)	%	Bach. (N=30)	%	Master (N=20)	%	Total	%
eGyankosh	40	80	20	66.67	10	50	70	70
Audio Video	20	40	15	50	07	35	42	42
Online Library	16	32	14	46.67	10	50	40	40
Only SLM	28	56	20	66.67	12	60	60	60
Teleconferencing	27	54	15	50	8	40	50	50
IRC	24	48	21	70	10	50	55	55
Internet and e-mail	40	80	25	83.33	15	75	80	80
Mobile SMS Service	43	86	28	93.33	19	95	90	90
OER	32	64	20	66.67	13	65	60	60
Technology in any form	48	96	27	90	20	100	95	95
Average	31.8	63.6	20.5	68.33	12.4	62	64.2	64.2

Figure 1: Technology supported learning (Total Sample = 100)

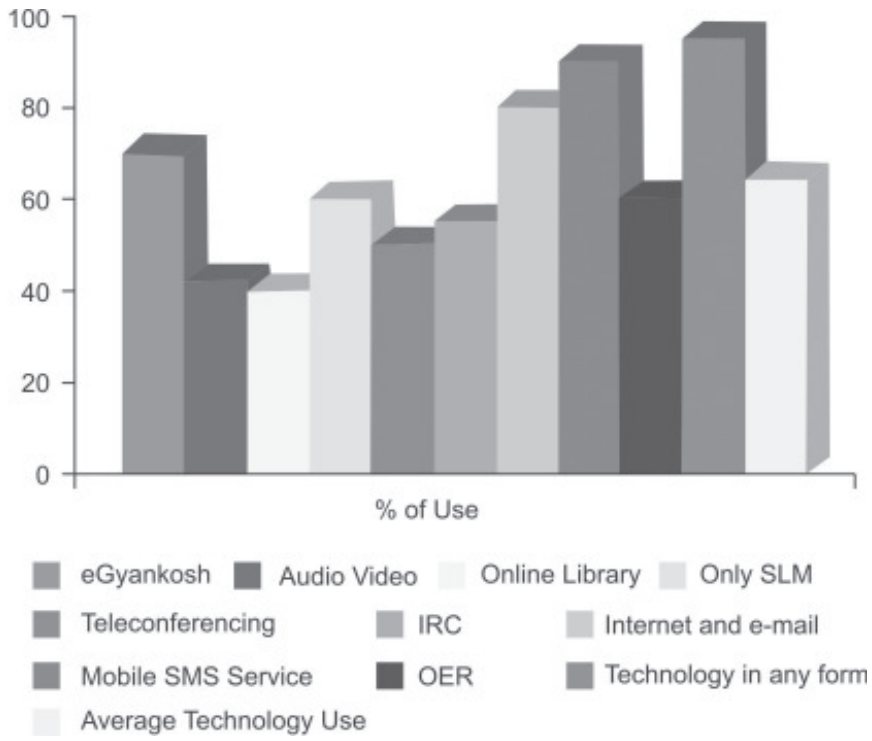

Table 3, revealed that most of the distance learners (95 percent) were taking the support of technology in any form for performing their study. The data revealed that on an average 64.2 percent student had the usual practice of using technology in their studies. 70 percent students were using eGyankosh for getting materials relating to their studies. 80 percent students pursuing diploma were using eGyankosh with comparison to 66.67 percent Bachelor and 50 percent Master students. Accordingly, 80 percent students (over all) were using internet and e-mail for completing their academic work. Nearly 90 percent students were using mobile SMS service for getting information and accessing other works relating to their studies. It was observed that nearly 40-50 percent students were using audio-video materials, online library facilities, teleconferencing, interactive radio counselling etc. It was also found that 60 percent students were exclusively using self learning materials for conducting their work. The revealing fact is that around 35 percent of students had isolated to using technology in their studies.

Table 4: Frequencies of using technologies in studies

Programme	Frequently	Sometime	Rarely	Whenever get time	Whenever I require	Never
Diploma (N=50)	3060	1020	12	24	48	36
Bachelor (N=30)	2273.33	26.67	13.33	26.67	26.67	13.33
Master (N=20)	1575.00	210	00	210	15	00
Total (N=100)	**6767**	**1414**	**22**	**66**	**77**	**44**

**(First figure in each block of the table is frequency and bold & italicize figures are percentage)*

Table 4, revealed that around 67 percent of students were taking the help of technology frequently during their period of study where as 14 percent students were using it some time. 6-7 percent of students each were using technology whenever they were getting time or when they require for using technology. Only 4 percent students responded that, they never use technology during the tenure of their study. Most of the Master (75.00 percent) and Bachelor (73.33 percent) students were frequently using technology with comparison to Diploma students (60 percent).

When it was asked to the above students about the difficulties of using technology, what they face, during the period of their studentship, the facts come to the front as follows:

Table 5: Students difficulties in using technology

S. N.	*Nature of Difficulties*	*Number (N=100)*	*Percent*
01	Not getting reply of e-mail	40	40
02	Not attending telephone	35	35
03	Difficulties to get the information of teleconferencing	55	55
04	Not well aware about IRC	51	51
05	Unavailability of audio-video materials in study centres	46	46
06	Timing of teleconferencing was not suitable	30	30
07	Most information (SMS) was not send	15	15
08	Less cooperation from the side of study centre	40	40
09	Unable to use online library	39	39
10	Not getting complete SLM in time	50	50
11	Hands on experiences in contact session was poor	31	31
12	Over loaded in other works as most of them were working, that's why, not getting time to use technology	54	54
13	SLM was enough, no need of technology	40	40
14	Intense materials are not available in eGyankosh	35	35
15	Not technical enough to use all sorts of technology use in Open and Distance Learning	42	42
16	Difficulties to access technology because of diversified and scatter arrangement of students	36	36

Table 5, discusses about the difficulties of the students for using technologies in their studies. Date revealed that, around 30-40 percent students replied that they were not getting an immediate reply of their e-mail or some time the concern people were not attending their phone call. On the other hand more than 50 percent students had not such type of difficulties. More than 50 percent students replied that they were not getting information about the teleconferencing or interactive radio counselling schedule either from their concern study centers of from the regional canters where as another half of the students were managing to get it in any ways like to go through the websites of IGNOU or Regional Centres. 30 percent students replied that the timing of teleconferencing schedule was not suit them as they were working somewhere at that time. They prefer to manage it in morning or evening hours. Around 40 percent students replied that, technically they were not sound enough to use all sorts of technology in their studies. 65 percent students were fully satisfied to using eGyankosh where as another 35 percent students replied that all their intense materials are some time not available in eGyankosh. Around 46 percent students replied that adequate audio video materials were not available in their concern study centres. It was difficult for them to come to IGNOU main campus to go through it. Around 54 percent students frankly replied that, they are working somewhere, that's why not getting time to use all sorts of technologies in their studies rather 40 percent students said that Self Learning Material was enough for their studies. They had confidence that without any technology in distance education they are able to do better in their studies.

Conclusion and Suggestions

Realising the facts discussed above it may be concluded that, technology is an integral part of any distance education system. Most students had positive attitude to use technology with Self Learning Material as a support and to do their study. The difficulties what the students were facing relating to use of technology was the major concern for any distance education institute to address and solve it. At the end we can say that the success of ODL system and to catch all the diversified learners we need to practice a better technology supported learning system.

The following suggestions may be placed here for better practice of support of technology in distance education system.

- ❖ There is the need of adeqyate orientation of the learners either at regional centre level or study centre level about the technological facilities available in general and programme specific, so that learners will be able to get an insight about using it for their studies.

- ❖ Schedule of teleconferencing and interactive radio counselling needs to be sent to the students directly or through regional centres / study canters, so that the learners could be able to use it from their home. If it is possible, the annual schedule of teleconferencing and interactive radio counselling may be prepared and intimated to the students through net their mobile.
- ❖ Adequate audio video materials need to be available in concern study centres or regional centres for the use of the learners. There is the need of identification of study centres and the programmes what they offer and definite audio video materials relating to that programmes should be kept there. Library systems in study centers need to be technology based and strengthened and need be available to learners on demand.
- ❖ All the information relating to the concern programme may be mailed or SMS to the students through their mail id and mobile number as and when it is required without delay.
- ❖ Care need be taken to reply Students queries immediately.
- ❖ Scheduling of teleconferencing and interactive radio counselling needs to be fixed in morning or early evening hour so that most students can be able to view it and participate.
- ❖ The soft copy of all the Self Learning Materials needs to be uploaded in eGyankosh, so that most students can be able to use it.
- ❖ In regional centre level or study centre level there is the need of orienting the students about the use of online library services and availability of varieties of library facilities.
- ❖ All the students need to be motivated for a frequent use of educational technology available in distance education system.
- ❖ The detail programme guide needs to be served the students from where the students can be able to get what technology he/she needs to use during their studies.

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Learning without Books

Anupama Bhargava

Asstt. Professor (Education), St. Xavier's College,Ranchi (Jharkhand)
[anupama1229@yahoo.co.in]

Abstract

Text books have always remained a support device in teaching learning system. Learning without books is considered a challenging task but over the years other media have also made an inroad journey in the field of education. The traditional (formal) and distance mode of education have undergone a sea change because of 'e' revolution. Interference of this media has changed the ways of learner to learn and reflect. Now the learner is no longer dependent on the printed material or text books for gaining information. Other options like e books, digital libraries and uploaded notes of the experts are available which help in constructing knowledge. A blend of hardware, software and humane ware is ushering a new era in knowledge society. This paper suggests two new models of independent bookless learning by the ODL learners.

Key words: text books, e books, connectivism, independent learning

1.0 Learning - How it takes place?

Learning in its simplest form implies any change in behavior of the learner. It can take place in formal as well as informal settings. Gardner Murphy (1964) has rightly put it as a modification in behavior and perception .Besides physical development; the individuals also develop mentally and emotionally. Learning leads to the sound development of all the three aspects of human life. Personality is shaped and efficiency can be increased by it. Hilgard (1948) opined that learning takes place when an activity originates/changes in response to an encountered situation, provided the change in the activity is not due to maturity, innate tendencies or temporary in nature. Various theories have been propounded by the psychologists to explain the unique phenomenon of learning. Thorndike (1931) believed that learning is based on three laws, law of readiness i.e. learners mental readiness/ willingness to

learn, law of exercise i.e. importance of practice/drill and law of effect i.e. how a successful execution of task, provides satisfaction to the learner and ensures further learning. Lewin's (1942) field theory emphasized on three aspects in the process of learning, the learner, her environment and success that she obtains while learning. It delineates the importance of understanding of whole situation at the initial stage. Skinner (1964) opined that individual learning takes place by reinforcement of responses while the constructivist approach considers learning as a social phenomenon in which learner constructs knowledge by the process of scaffolding. Besides all other factors the role of interest and self motivation cannot be denied in the process of learning. Most of the learning theories opine that learning is brain based i.e.it occurs at individual level but Siemenes(2005) argued learning can take place by being in connection with others ideas, opinions or information stored in technological devices. This new theory of digital age is called as connectivism.

Role of Text Books:

For a long period books are considered as a precondition to learning specially in formal/ traditional system of education. Even in a modern era where e-learning and digitalization of classrooms has taken place, the importance of the books cannot be minimized. In all the three subsectors of education, primary, secondary and higher the books/ text materials play central role. Books give the information in a structured way. Systematic presentation of the material as per syllabi is done in the books. Direction to proceed is provided by the books to both teacher as well as learner. New and important *concepts, principles, ideas are illustrated with pictures, examples or diagrams which* help learner to assimilate the knowledge. The textbooks also provide a scope of evaluation of acquired knowledge.

The book can be referred and used again and again by the learner. Catone (2009) found that printed material or book is more convenient to share in comparison to a digital text. Whenever any new situation is faced by the learner, the book can be consulted and considered as the most authentic source. Such is the power of book that it forms an emotional bonding with the learner. It succeeds in developing a close relationship between learner and teacher, learner and information, learner and the author. It can stimulate the thought process of the learner who assimilates the text properly. Robinson (2011) on the basis of research findings stated that reading process becomes quicker from book in comparison to reading from screen. The biggest advantage of book is that it presents information in a systematic manner keeping in mind the age, maturity level, need (mental, emotional) and taste of the learner. Textbooks are designed in such a manner by the experts that

aforementioned characteristics are always kept in consideration. Mercieca (2004), Warschauer (2011) claimed that it is easier for the students to search and read the text from the book. A proper research work is undertaken before publishing. This provides an authentic status to the book's information. Books also enhance the confidence level of the learner as she can assess her own progress by the questions given at the end of the topic. The books also motivate learners to present the material in a systematic way and improve the writing style besides enriching vocabulary. O'Neill (1990) advocated the importance of textbooks for preparing the lesson and found them time and cost effective.

1.2 Is there any alternative to the textbooks?

Text Books though enjoy a paramount status in the teaching learning yet face criticism on various fronts. The biggest criticism is that learners always have to memorize/ understand the external knowledge confined in the book without even raising a query about it. Question that often crosses the mind, is this only channel open for learning? In today's modern world when technology has made its presence felt everywhere, is it advisable for the learner to just depend on the textbooks only .Hanna and deNooy (2003) claimed that use of technology for instruction raises the level of learning. The price tag of the books many times poses dilemma for the learner. The affordability becomes a challenge, not all the books are in buying range of the learner. In this scenario the library can rescue the learner to some extent but this can be the case for those learners who have access to the modern and updated libraries. This condition is utmost challenging for the learners in remote and far flung areas of the country. Secondly the books are always not easy to carry everywhere. The load of the textbooks in the formal system of learning has been a butt of joke among the educationists.

One or two textbooks on a particular topic are not enough to cater to the needs of the learner. The textbooks used by learners are based on the curriculum so cover only those topics which find place in the syllabi. Secondly the information presented is also according the prescribed syllabi. This sometimes leads to a situation where learner knows more and less is printed in the book. Brown (2000), Oblinger (2003), Oblinger and Oblinger (2005) argued that it is natural for the present tech savvy generation to use ICT for educational purposes. A textbook converges the learners attention on the topic and most of the time teacher and learner both think and act on the dotted lines. Out of the box approach do not get much support from the textbooks. Siemens (2005) argued that blend of learning styles with technology make learners more enabled.

Textbooks also consolidate the narrow system of the evaluation. The questions are usually based on the content matter given in the book. Learner feels satisfied by comprehending its content matter and responding to the questions based on it. Updating of content matter in a text book is a time taking process and sometimes learners stick to old information for a very long time. In the rapid advancement of the today's world, the learner fails to match the pace if only depends on the books. The modern education system supports the learner centered approach, while textbooks are more of a tool in teacher's hand. Tam (2000) observed that traditional style of learning is teacher centred, where teacher is an active player using various skills to ensure learning. Onus of learning depends on the competence of teacher than on the potential of learner.

2.0 **Is e- learning a potent option?**

In modern learning system learner community has swelled many folds, so learner who wants flexi timing in learning also find it difficult to depend solely on the traditional system of learning .Aforementioned limitations of the books are compelling the teacher and learner both to explore the alternative ways. The digital world has provided an answer to this .Prensky (2004) opined that ICT has become an integral part of today's student's life so our education system should be updated to cater to their needs. Digital books are available which can be one of the ways to augment learning besides the existing printed text books. Audio, video tapes are the other sources in which information can be stored and retrieved easily. These resources are also not very expensive to maintain.

The internet is easily accessible and promotes e learning. The information on any topic or issue is available to the learner just by a simple click on the mouse. This medium provides a wide range in terms of quality and quality of information. E-learning which is virtual in nature helps individual to continue with the self paced learning both online via internet *and offline with help of DVD and CD's. Means and Oslon (1997) found that* use of technology for learning keeps the students in active mould in contrast to text book based teacher controlled learning.

Synchronous e-learning helps individuals to learn in group by attending text based conferences/lectures. It can be made interactive by a two way audio-video conferencing. This gives a similar picture of students attending the classroom listening and interacting with the teacher. Other mode is of asynchronous learning where interaction between the participants/ learners takes place with time delay like e-mails, or recorded lectures/conferences

uploaded within learning management systems. Kozma (1991) stated that learner actively engages herself with the medium and new knowledge is constructed by blending available resources with information gathered from media.

Uploaded notes, slides, reading links and video links are other alternative materials which can serve the purpose of the learner. The learner can also surf the material on the OER (OPEN EDUCATIONAL RESOURCES) for making assignments and projects. These can be explored by the teachers also for in-depth preparation of the topic. For this purpose the educators, universities and educational institutes can join hand together by pooling the information/ knowledge in a bank form for sharing when required. The text or material can be browsed subject wise or class wise when needed by the teachers or facilitator. Pocatilu (2010) opined that cloud computing can be used to deliver e-text books which makes use of these easy for the learner.

2.1 Impact of technology on learning

Dewey (1916) stressed that today's learner should be taught in today's style. Prensky (2004) expressed that students of modern times are comfortable using technology and are not made for education system of pre internet days which we are still carrying on. Spence and Haughey (2005) advocated the use of technology in teaching learning as students and teachers want to adopt it. In the traditional classroom teacher has the limited scope of applying the various pedagogical strategies. The principles of behaviorism, cognitivism and constructivism find limited expression. The use of technology inside and outside the classroom provides the wider scope to the teacher and learner in achieving the educational objectives.

The inquiry model of learning, constructivist approach can be simultaneously used when the technology is involved in learning. Learners become responsible for their own learning. Teacher/ instructor when adopts the role of facilitator a cooperative learning environment is created. The spoon feeding pattern of teaching or providing information takes back seat. Use of technology brings flexibility in teaching strategies, curriculum and evaluation techniques. Teachers play an active role as planners and managers. Researchers like Brown, collins and Duguid (1989) Naidu (2004) have acknowledged the fact that effective learning takes place when learner is engaged in problem solving activities. These activities not only encourage learner to complete the task but also give her a chance to reflect, stated Naidu (2004).The higher order skill development among the learners take place. The learner attains profeciency in searching, retrieving, and filtering, synthesizing and analyzing

information. Learner takes charge of her learning and assumes the role of auto learner. Dependency on the teacher and books can be reduced drastically once the learner starts collecting the data/information and start arranging it in order for learning. Wit felt (2000) argued that combination of various learning theories along with technology in science classrooms can encourage both teachers and students to take up issues of concern. Use of technology in Indian education scenario is still in its cradle form. The independent learning is a distant dream specially in traditional system but with the help of technology a new era can be ushered where learners feel motivated to learn. Judicious use of ICT for learning can make both dependent and independent learners confident about themselves.

2.3 How technology can help in bookless learning?

Bookless learning is going to a reality in near future. Like every new setup it also possess a number of the challenges to the learner and learning environment. The success of this venture lies in effective handling and sound preparation of the infrastructural and allied facilities. A back up plan and alternative arrangement must be present in case of a technical snag or irregular power supply.

First and foremost challenge is of the cost effectiveness. Catone (2009) stated that pocket friendly e text books would be welcomed by the students. Availability of e text books have to be ensured for all including the students from the poor socio economic strata also. Baumann (2010) pointed that inexpensive, effective and readily available e text books are preferred by all.

The resources like desk top computers, laptops ,cables, software programmes and financial resources must be available for hassel free use of the e text by teachers and learners argued Simon (2001).

E text book should have both hardware and software compatibility. It should be able to run on different computers and has the ability to connect to different devices.Catone (2009), Sadon and Yamshon (2011) stressed on these issues and considered formatting of e. Textbook as a stumbling block in its use. Other area which has to be paid attention is quality and accuracy of the content.

Copyright protection must be ensured for the e-textbooks also. There are more chances of copyright violations as these can be easily downloaded.

Health issues are always related with the technology. More fatigue is caused and stress on eyes is felt while reading the text on the screen especially if

screen size is small. Potowary (2011) stated that readability is optimum if one can read and understand the text with ease. The readability can pose challenge in successful switching over to the e.textbooks opined Mercieca (2004). A new reading fomat visual syntactic text formatting developed by walker et al. (2007) in which text is arranged in cascading form reduces fatigue and enhances reading profeciency. Mercieca (2004) also suggested breaking the content into smaller sections for easy reading.

Multi touch technology is one of the ways to make booklss learning more effective and interactive. The teachers can take up a lesson and interaction with the learner can be ensured through multi touch screen. Piggot (2010) claimed that both teachers and learners prefer using this due to its high interactive property. It also maximizes the learners participation in the class as every one can respond or collaborate through their devices.

E.paper resembles the hand writing paper. Display on this gives the impression of a paper having ink printing. It is also not taxing on the eyes expressed Pattison (2008). Use of e. Paper in the class gives the same feeling as that of a book.

With the help of MOODLE the audio video links can be uploaded. Teachers can encourage students to participate in discussion forums.Post class activities like assignments, projects and querries of students can be addressed. An extended classroom can be created.

E books or online learning can save upto 60% of the cost spends on purchasing of the books though all e books are not cheaper but additional benefit to search, highlight, or take notes with in texts, tablets or smartphones make them attractive for the students. Another option is that teachers can make their notes available on the to the students through interactive PDF with videos and links. Materials prepared by the teachers can be made available online for anyone to use and modify. (Edition.cnn.com/2014/4/18/living/open-textbooks-online-education-resources/index.html?iref=allresearch)

3.0 Promoting Independent learning without text books

The independent learning depends on a number of internal and external factors. The foremost one is creating an enabling environment. The physical environment includes an infrastructure equipped with systems ,allied equipment and facilities to promote independent learning. Secondly the learning environment can't prevail in absence of trust. A healthy relationship between learner and facilitator boosts the confidence level of the learner.

Task on completion can be evaluated by the teacher/facilitator and constructive feedback can be provided for improvement in the next task. This type of independent learning is semi controlled and is practiced in the traditional system where teachers are always there to help and guide the students. Pedagogical practices when blended with e learning step up the student participation in consturuction of the knowledge.

3.1 Suggested models for independent learning by learner of ODL system:

The semi controlled independent learning approach seems to be effective for the ODL learner also. Instead of providing printed material, the learner could be provided with tablets loaded with text based programmes. Comprehesion of the text becomes easier for the learner under the guidance of the facilitator in the local study centre. Interactive sessions with the facilitators if made compulsory and are conducted on the regular basis would help learner to overcome learning impediments. This mode of teaching learning proves beneficial for the learners who need constant monitoring and periodic feedback to keep learning graph in ascending order.

The second model of independent learning is fully controlled by the learner. In this learner is fully in charge of her own learning and exploits the various media for it. Pintrich(2000) talked about a model of independent learning where learner without the help of any facilitator, self plans, monitors, paces and evaluates the learning outcomes. Pintrich(2000) talked about a model of independent learning where learner without the help of any facilitator, self plans, monitors, paces and evaluates the learning outcomes. Zimmerman (2002) concluded that motivation is also important for an independent learner as it leads to reflection of self activities. Moving on to the next level/task or need to be in the touch with the expert can be assessed by the learner herself. Here the learner should be exempted from attending compulsory interactive sessions with the facilitator of the nearby study centre. The learner can opt for any mode of learning at the time of induction in the course.

In both the above mentioned models learners should be encouraged to participate in webinars, discussion forums and interaction with the subject experts by logging in. it increases the student to student interaction, encourages critical thinking, makes student more exploratory in nature maintained kassop(2003) Stodel et al.(2006),Shapely(2000),collison etal.(2000)Haggerty et al.(2001).In this learning takes place by scaffolding . it would be easier and faster to send assignments and projects to the learners through e mails for which mail ids of the learners need to be created. Online feedback saves time and gives enough scope for improvement.

4.0 Probable challenges faced by the learners

- The foremost challenge is to make learner comfortable with the media. Some of the learners specially coming from marginalized sections might not comfortably use the technology and show inhibition towards it.
- It is difficult to find net connectivity especially in far flung areas of the country.
- Regular monitoring and tutoring of the learner would be required by a person adept in use of technology.
- Digital divide could be a demotivating factor for many learners. Learner might get disoriented if not a digital native.
- It might not be a cost effective option for institute and learner both.

4.1 How challenges can be overcome

- An initial workshop can be organized to make learner comfortable with the medium. Practical knowledge regarding use of tablet and surfing of net when imparted to the learners would increase their comfort level with the device.
- Presence of computer instructors along with the local facilitators would be an additional help to the learners. The division between digital natives and naives can be blurred if assistance provided by the expert pertains to handling of the device.
- The provision of one tablet for each learner might not be a cost effective idea. Open and distance learning institutes could charge a part of its cost from the learner in the form of fees. Free tablets could be awarded to those learners who perform well in the exam for encouragement and motivation.

5.0 Conclusion

Bookless learning whether it is teacher/facilitator mediated or fully independent can help in attaining desired learning outcomes, if it is used in a systematic manner keeping the desire to learn more and know more alive. Technology becomes a viable tool to creat a learning environment which is socially active, responsible and can address the real issues. It can create extended class rooms which are more challenging and satisfying for the learners. Various channels of learning can boost the practical knowledge instead of bookish ones with the help of a very viable e media.Initially students may find it difficult to adjust themselves in text bookless learning but

once the comfort level increases it can add value to student centred learning argued Vernon(2006). Branson (1991) pointed out that students **learn not only by interaction with the teachers but also by exploiting the technology. W**e can conclude that learning can take place by the technogy and along with technology, with the books and even without the traditional books.

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Computer Technology and Teaching System: Interaction and the Challenges Ahead

Vinod Kumar Kanvaria

Department of Education, University of Delhi, Delhi – 110007
vinodpr111@gmail.com

Abstract

While having a close look at the rapidly increasing use of computer technology in the teaching and learning process, there is need to interact with teaching system through use of computer technology and the challenges ahead. The current paper throws light upon the teaching system and interaction with various elements of teaching system like method, material, learner and colleagues through computer technology. It also briefly discusses about challenges already met and challenges ahead in this direction. Undoubtedly, meeting these challenges would certainly help in judicious and proper use of computer technology in the field of education.

Our educational system

Our educational system talks about three poles viz. teacher, pupils, and educational Environment. For any happening of learning or teaching, these three are essential elements. In absence of any of these our educational system can't be conceptualized. This is a different aspect that definitions of these three have been changing from time to time to meet the needs and requirements of the then society and system.

Three pillars of teaching

There are different views about teaching and its pillars.

Traditional View: This view used to depict that teaching is nothing but transfer of knowledge from one end to the other end, where the transmitter is the teacher and the receiver is the learner. Three pillars of teaching were method, material and the learner, while the teacher used to play the key role situated at the center of the entire system.

Modern View: This view depicts that teaching facilitate and create learning situations for the learner so that the learner can create his/her own knowledge. Three pillars of teaching system are method, material and the teacher, while the learner occupies the central place of the entire system.

Modern view about teaching or learning

Modern view is not about the teaching, but learning. This view focusses about the learning hence the learner is at the center. Though the role of the teacher has changed a lot in the current system, but while talking about teaching, not learning, the teacher is still placed at the central place. This means teacher is still the powerful entity while we are concerned about the teaching system. And, no doubt, even the teacher is at the central place in the teaching system, while the subsidiary elements of teaching system are method, material and the learner.

What changes have been there in the teaching system?

If the teacher is still at the center of the teaching system, then it is an important question that what has been changed. In the teaching system, there are the means and modes of teaching which have been changed.These means and modes have provided a high place to the use of technology in the field of teaching and learning. It may be a coincidence that gradually while we have shifted from focus upon teaching to learning, not only the use of technology in education has increased but there is also a consistent degradation in the morality of learners and consistent degradation in the prestige of teaching profession. Nobody can deny this very fact that there is a consistent degradation in the morale of people, while the use of technology has increased in the society. While we are focused more upon learning and use of technology for learning, the teaching and teaching system has got lesser attention and possibly this may be one of the prominent reasons for the degradation of morality in the society. Hence, there is a great need to interact with teaching system in the current scenario.

What does 'interaction' mean?

'Interaction', here, may be understood as having close connection and concern about teaching through various means and modes. This is to build the rapport with the system. This is not merely adaptation according to the system, but also to change the system, wherever required and wherever possible.As a whole, this interaction is not just limited up to the concept of communication as given by Lasswell or Berlow or Shannon and Weaver (as cited in Kanvaria, 2014), but a comprehensive coordination and collaboration between the two.

Here, our main concern is interacting through computer technology with the teaching system.

What does 'computer technology' mean?

Computer technology can be understood as using computers in various forms like desktop, laptop, palmtop, tablet, phablet, and accessories in offline as well as online mode. Basically, there is a processor which can process the information. This information can be obtained as output after processing in various forms as text, images, pictures, audio, animations, videos etc. Since the same information can be depicted in a number of forms and ways using computer technology, hence now a day computer has become almost essential in every aspect of learning system. And need is there to interact with teaching system also through computer technology.

Interaction with the teaching system

Interaction with the method through use of computer technology

Some well-known teaching methods, teaching techniques and strategies,as shared by The University of North Carolina (2014) and Balan & Metcalfe (2012),are lecture by teacher, class discussion conducted by teacher, recitation oral questions by teacher answered orally by students, discussion groups conducted by selected student chairpersons, lecture-demonstration by teacher, lecture-demonstration by another instructor(s) from a special field (guest speaker), presentation by a panel of instructors or students, presentations by student panels from the class: class invited to participate, student reports by individuals, student-group reports by committees from the class, debate (informal) on current issues by students from class, class discussions conducted by a student or student committee, forums, bulletin boards, small groups such as task oriented, discussion, Socratic, choral speaking, collecting, textbook assignments, reading assignments in journals, monographs, etc., reading assignments in supplementary books, assignment to outline portions of the textbook, assignment to outline certain supplementary readings, debates (formal), crossword puzzles, cooking foods of places studied, construction of vocabulary lists, vocabulary drills, diaries, dances of places or periods studied, construction of summaries by students, dressing dolls, required term paper, panel discussion, biographical reports given by students, reports on published research studies and experiments by students, library research on topics or problems, written book reports by students, flags, jigsaw puzzle maps, hall of fame by topic or era (military or political leaders, heroes), flannel boards, use of pretest, gaming and simulation, flash cards, flowcharts, interviews, maps, transparencies, globes, mobiles, audio-tutorial

lessons (individualized instruction), models, music, field trips, drama, role playing, open textbook study, committee projects-small groups, notebook, murals and montages, class projects, individual projects, quiz down gaming, modeling in various media, pen pals, photographs, laboratory experiments performed by more than two students working together, use of dramatization, skits, plays, student construction of diagrams, charts, or graphs, making of posters by students, students drawing pictures or cartoons vividly portray principles or facts, problem solving or case studies, puppets, use of chalkboard by instructor as aid in teaching, use of diagrams, tables, graphs, and charts by instructor in teaching, use of exhibits and displays by instructor, reproductions, construction of exhibits and displays by students, use of slides, use of filmstrips, use of motion pictures, educational films, videotapes, use of theater motion pictures, use of recordings, use of radio programs, use of television, role playing, sand tables, school affiliations, verbal illustrations: use of anecdotes and parables to illustrate, service projects, stamps, coins, and other hobbies, use of community or local resources, storytelling, surveys, tutorial: students assigned to other students for assistance, peer teaching, coaching: special assistance provided for students having difficulty in the course, oral reports, word association activity, workbooks, using case studies reported in literature to illustrate psychological principles and facts, construction of scrapbooks, applying simple statistical techniques to class data, time lines, 'group dynamics' techniques, units of instruction organized by topics, non-directive techniques applied to the classroom, supervised study during class period, use of sociometric text to make sociometric analysis of class, use of technology and instructional resources, open textbook tests, take home tests, put idea into picture, write a caption for chart, picture, or cartoon, reading aloud, differentiated assignment and homework, telling about a trip, mock convention, filling out forms (income tax, checks), prepare editorial for school paper, attend council meeting, school board meeting, exchanging 'things', making announcements, taking part (community elections), playing music from other countries or times, studying local history, compile list of older citizens as resource people, students from abroad (exchange students), obtain free and low cost materials, collect old magazines, collect colored slides, visit an 'ethnic' restaurant, specialize in one country, follow a world leader (in the media), visit an employment agency, start a campaign, conduct a series, investigate a life, assist an immigrant, volunteer (tutoring, hospital), prepare an exhibit, detect propaganda, join an organization, collect money for a cause, elect a 'hall of fame' for males, elect a 'hall of fame' for females, construct a salt map, construct a drama, prepare presentation for senior citizen group, invite senior citizen(s) to present local

history to class including displaying artifacts (clothing, tools, objects, etc.), prepare mock newspaper on specific topic or era, draw a giant map on floor of classroom, research local archaeological site, exchange program with schools from different parts of the state, in brainstorming small group, students identify a list of techniques and strategies that best fit their class.

Some broadly listed teaching methods, as shared by Solomon Islands Association of Rural Training Centres (2014), are demonstrations: teacher showing a skill to the students while they watch, practical: all or some of the students practicing a skill which they have learnt or are learning, experiments: these are related to practical and are mainly used in science-related subjects, including agriculture and home economics or life skills. Students are asked to do something, observe and record the results of what they do, and try to explain these. sometimes the teacher may do an experiment as a demonstration, lecturing: teacher telling the students information or ideas while they listen, note-giving: writing notes on the board for students to copy or giving handout for students to read, questioning: teacher asking questions to individuals or whole class, discussion: students talking to each other and sharing their ideas either in small groups or as a class. Teacher may or may not take part, brainstorming: students asked to throw out as many ideas as possible in a short time either in groups or whole class. Usually someone writes the ideas down, seminars: one student asked to present a topic or teach a skill to the rest of the class. They must prepare this in advance, group work: students work in groups on an activity. This may include making something; looking after a garden; or finding out about a particular topic. This may be for one lesson or for a group project lasting days or weeks.

There are several software and web-tools/platforms for applying these methods. For an instance Wallwisher as notice board tool for initiating the thought process, Edublog for blogging the views about something as a previous knowledge, Twitter as a micro blogging tool for summarizing the views, Fotobabble for sharing the photos collected, consisting of some objects/figures, Edmodo for collaborating over all common characteristics of something from the photos, Eduglogster for summarizing common characteristics of something, Animoto for creating videos of photos shared, Schooltube for sharing videos, Class.io for class-discussion, Geogebra for creating various shapes of different size, Teachertube for uploading the videos developed by the teacher for drawing something and explaining various included concepts, Edutagger for tagging these videos, Mahara for creating e-portfolio and attaching individual video for drawing a shape along with a presentation, for evaluation (Kanvaria, 2012).

Interaction with the material through use of computer technology

Complexity of the material is one of the important aspects which need to be dealt with efficiently. The complexity of the material can be reduced by presenting a material in various forms and this can make a complex material simpler. Computer technology provides facility to present a material into various forms including still as well as moving and animated. For example a concept of train can be better taught through presenting it into picture format than the text. And, videos and animation can make it even simpler than the picture. Some software is office tools like word processor, presentation creator, video creator etc.

Length of a material plays an important role in teaching and learning. Computer technology can be efficiently used to break a larger material into small pieces to present it into easy to teach, read and understandable form. Popular software is presentation creator and presenting information into smaller parts using hyperlinks.

Difficulty of the material can be easily modified using computer technology, as it helps in retrospection (Kanvaria, 2010), reflection, feedback and improvement. Using computer a material can be played and repeated as many times as required. For feedback purposes, there are blogs, social networking platforms, google forms, Qualtrics etc.

Meaningfulness of a material makes a material more learnable. Computer technology helps in making a material more meaningful with the help of websites, as a material in a single context can be searched and understood in various contexts. Computer technology helps in not only contextualizing but also generalizing a concept underlying in a material.Some search tools are google search, msn search, yahoo search etc.

Belongingness associated with content can be enhanced with the help of computer technology. Computer technology has enabled teachers and learners to create their own material very easily. One can develop his/her own text, picture, image, audio, animation, video, presentation, data and data sheet, etc. Since this material is developed by the teacher and learner at his own, it gives a sense of belongingness to the material generated. There are several authoring applications for creating and editing image etc. like image creator and image editor.

Interaction with the learner through use of computer technology

Interest of the learner can be easily enhanced using computer technology.

The computer technology can make the content more interesting to the learner by changing its forms. If a learner is not interested, the form of the content can be changed as per the interest level of the learner.

Age of the learner can be easily entertained using computer technology. For learner with lower age, animations can be used, for middle age level learners, pictures and videos can be used and for higher age level learners, text, lectures, presentations can be used using the computer technology.

Gender issue can be tackled using computer technology. Using computer technology and web technology, more instances of all the genders working in different fields can be explored and shared in the content and teaching. Moreover, web facility can be used to arouse awareness about dignity to all the genders.

Motivation of the learner can be enhanced by sharing motivational quotes, instances, poems, etc. using computer technology. If a learner fails and backs out from learning, the teacher may share motivational thought using computer technology. If a teacher doesn't have enough of these, he/she can explore these using computer technologies.

Personality of the learner can be dealt with using computer technology in a number of ways. Computer technology can be used to assess as well as diagnose the specific characteristics and challenges associated with a learner's personality.

Aptitude can be tested and enhanced using computer technology. Simulation techniques can be better applied using computer technology to deal with aptitude of the learner. The apparent real situations can be created using computer technology.

Attitude can be developed as well as tested using computer technology. Moreover mental set of the learner can be tested using computer technology.

Interaction with the colleagues through use of computer technology

Moreover, computer technology can be efficiently used to interact with the colleagues and people working in the field. Computer technology has lessened the physical distance among people sitting at anywhere in the world for up gradation and enrichment of each other. Computer technology has enhanced spaces for collaboration and cooperation among colleagues irrespective of temporal and spatial factors. There are several associations and collaborative platforms on the internet which can be easily accessed and used through computer technology.

Challenges

By the very point of time of entering computer technology in the field of education, in general, and in teaching and learning, in particular, there have been several challenges. Some challenges have already been met so far and some are still there to meet.

Some challenges met so far

Mindset of the teachers was one of the major challenges in this inclusion process. While in the initial phase, most of the teachers were of the view that the computer technology is harmful to the teachers and teaching system and there was reluctance to the interaction with the computers and its addition to the teaching system. But, this challenge has been met and the mindset of teachers has changed a lot so far about using computer technology.

Skill was another challenge which has been met with the help of several schemes and programmes by various government and private agencies and stakeholders. Some well-known programmes are ICT@Schools (MHRD, 2010a), Intel Teach to Future, CAL, etc.

Popularity of the computer technology has increased with the enhanced use of mobile technology. Using mobile in daily life for various tasks has enhanced use of computer technology. Teachers have understood that the computer technology can also be used for various purposes and this has increased popularity of the computer technology. Now, so many of Indian teachers are closely associated with the programmes of Google, Microsoft and several other agencies for using the computer technology in the teaching system.

Technophobia challenge has been already met. Earlier, most of the teachers were afraid of technologies and its use. It was a common phobia that computers would be ruined if used several times a day, and even dust and heat may also destroy a computer. Or, a fear of 'don't know what would happen' if clicked by mistake on a computer screen or a computer is a very sophisticated device, and so on. But, now this phobia has almost been removed by seeing computers being used almost everywhere and even in the worst atmospheric conditions.

Earlier teachers had an opinion that the computer technology is not easy to handle and use. But, now this challenge has been met as most of the teachers are easily handling and using computer technology in teaching and learning.

Eccentricity about the computer and computer technology was another challenge which has been met. Now, the teachers don't think computer and

computer technology as eccentric. For an instance, in the hole in the wall experiment (Mitra, 2013), initially learners used to think about the computer that what this eccentric device is, but later the computer became just like a friend to them. And, they started using computer for most of their learning needs.

Some challenges ahead

Access to the computer technology is still a big challenge for the teaching system (Kanvaria, 2011). Though, very popular, but computer is still not easily accessible for all. In most of the schools, there is still a single computer room, which doesn't allow all using computers whenever needed. But, only a small group can access the computer at a time. Only a single teacher can access and use computer room for teaching at a time. Hence, there is a need to ensure that all teachers have access to the computer and computer technology, as much as possible.

Digital gap is a big challenge to be met. There is a large digital gap in the society. Still, there is a major faction of teachers, who do not have availability, access and knowledge about using a computer. This gap needs to be removed by thinking about the last teacher in the society.

Connecting one and all is still a challenge. Though we have achieved a lot but still a significant faction of teachers needs to be connected with others using computer technology. Most of the teachers are still connected with a very small group of teachers across the globe. There is a need to connect with one and all of the teachers available for a subject across the globe. These connections can be subject wise, stream wise or even nation wise.

Need-based use of computer technology is still a challenge. There are two kinds of teachers, one who for everything are depending upon computers, even when it is not necessary, and the second who are not using computers at all, even while when computer can help a lot in a particular task. Both the conditions are harmful. This is a challenge to integrate the computer technology into teaching system as a need-based enterprise.

Another challenge is about thinking computer technology as a panacea. One must understand that computer technology is not a panacea for everything. Even computer technology, too, as any other technology, must be taken as supplementary or complimentary means and mode for supporting teacher for teaching and learning purposes. The challenge is to make the teaching system understand that computer technology is not a panacea and it can never replace a teacher.

Moral up gradation is a major challenge. There are several instances which depicts that the use of computer technology has given rise to several immoral acts by learners, teachers and other stakeholders. Cyber-bullying, harassment, plagiarism and blackmailing using computer technology are some of the prominent immoral acts which are occurring with the help of computer technology. Hence, moral up gradation is the challenge of the hour.

Blind use of computer technology is another challenge in this field. Those, who think that computer technology is good for teaching and learning system, they are blindly using computer technology for every purpose, for an instance, people are blindly using presentations for every topic in their classrooms without having any thinking whether presentation can be better mode for each and every topic. Since they want to use computer technology, they are using presentations which several times cause nuisances than the benefit.

To make Open schooling system at par with the formal teaching and learning system, also needs a highly interactive, frequently updating, multi-platform, learner friendly simulating computer technology system. This is a great challenge the open schooling system is struggling with and has yet to achieve.

Conclusion

With the increasing and accepted use of computer technology in the field of teaching and learning (MHRD, 2010b), it has become essential to interact with the teaching system through computer technology. Teacher has to interact with the method, material, learner and the colleagues more and more through computer technology. But interacting through computer technology has its own advantages and disadvantages. Computer technology has great advantages like information processing, creating, developing, editing, creating copy, etc. which have helped a lot for teaching and learning.And all this has become very easy for one and all in the teaching system. But, disadvantages have put forth many challenges from time to time in front of teaching system. Some of the challenges like mindset, skill, technophobia, popularity, easy handling and eccentricity, etc. have been met while some of the challenges like access, digital gap, connectivity, moral up gradation, need-based use etc. still need to be met.

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Open and Distance Learning in India's North East: Status and Challenges

Ankuran Dutta*, Manas Ranjan Panigrahi and Anamika Ray*****

* Commonwealth Educational Media Centre for Asia, New Delhi [ankurandutta@gmail.com]

** Commonwealth Educational Media Centre for Asia, New Delhi [mpanigrahi@col.org]

*** Dept. of Communication and Journalism, Gauhati University, Guwahati [anamikadady@gmail.com]

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Introduction

The National Knowledge Commission has given a clear picture of the higher education status of the country. In the first paragraph of the report, the commission has given this statement - "higher education has made a significant contribution to economic development, social progress and political democracy in independent India. But there is serious cause for concern at this juncture. The proportion of our population, in the relevant age group, that enters the world of higher education is about 7 per cent. The opportunities for higher education in terms of the number of places in universities are simply not adequate in relation to our needs. Large segments of our population just do not have access to higher education. What is more, the quality of higher education in most of our universities leaves much to be desired." (NKC, 2006)

It can be said, only 7 percent of our population can access higher education. The Gross Enrollment Ratio (GER) has been increased from 7 percent (according to the 2001 census) to 12.4 percent (in 2010). But this national GER is half of the world average of 24 percent. Though the Indian higher education is the second largest (in number) in the world, but it is negligible in the sense that it represents only 12.4 percent of the total estimated youth population over 120 million in the age group of 18-24 years. According to the

UGC data of 2008, there are some states like Nagaland & Kerala having GERs between 18-19 percent, on the other hand some states like Arunachal Pradesh having only 3 percent.

Governments at central and state level are trying to increase the number of colleges and universities, so that a huge number of students can be accommodated. But on the other hand, from this academic session almost all universities started semester system in the college level as per the latest UGC directive. Therefore, the colleges had to reduce the seats to maintain the quality of higher education in semester system. In this situation, only open and distance mode of education is one of the best options to improve the GER status in the country, particularly in North East.

Open and Distance Learning in India's North East

The trend of distance education in the north eastern part of the country has been started in the last decade. The initial hesitation of pursuing education through distance learning mode has gradually evaporated and is highly in demand as they allow the students to nurture other interest along with their studies. According to 2011 census the percentage of literate people in Assam is 73%. The highest literacy rate in the north eastern states is Mizoram with 91.6% and lowest is Arunachal Pradesh with 67%. But the percentage of people who can afford to go to a college or university is much lower. As far as democratization of higher education in the region is concerned, a few dual mode institutions and open universities are playing a very important role (Dutta, 2010).

The Open and Distance Learning (ODL) system was introduced in the north-eastern region in 1986 when IGNOU was established its first study centreat Gauhati University campus. Currently its operation in the NE region is made through 9 regional centres set up at all state capitals of the north east(in Assam, IGNOU is proposing to run a separate regional centre in Jorhat) besides having its study centres in a number of colleges and educational institutions of the region (Baruah, 2010). In continuing with the aim of building a knowledge based society, an open university- Krishna KantaHandiqui State Open University was established to provide quality higher education through open and distance learning to reach the unreached of the society. It is the fourteenth of its kind along with IGNOU and the first State Open University in the whole of NE India (Dutta, Ray, 2010).

Distance Education Directorates in dual mode universities of North East

Along with the open universities (national and state), Gauhati University,

Dibrugarh University, Tripura University, Rajib Gandhi University, Tezpur University and North Eastern Hill University are providing various programmes through distance mode.

Tripura University: The Directorate of Distance Education was established in 1996 to impart higher education through the distance mode with multi-media approach. Tripura University is the first dual mode university in the region and it has consistently promoted open and distance education on approved UGC and Distance Education Council, New Delhi guidelines to cater to the needs of the students who discontinued their studies or those who want to continue studies along with their occupations. A good number of courses offered by the University includes B.A, B.Ed, M.A and DCA (TU, 2012).

Gauhati University: It was established by an act of the State Legislature, Assam in the year 1948 and this University is the oldest, largest and one of the most reputed universities of North East India. Institute of Distance and Open Learning (IDOL) was established in 1998 under the umbrella of Gauhati University. It was earlier known as Post Graduate Correspondence School. IDOL offers graduate and post graduate programs in various streams. It offers PG Degree, PG Diploma in Sales and Marketing Management, Human Resource Management, Business Management, Journalism and Mass Communicationand many more along with various Under Graduate and Certificate courses. Under the learning support service, the institute has launched a community radio- Radio Luit (90.8 MHz) on 1 March, 2011, which is the second of its kind in the north east after Jnan Taranga of KKHSOU. The institute has also an e-learning portal, named 'Budhidroom' (IDOL, 2012).

Dibrugarh University: Dibrugarh University, a premier university of Assam was set up on 1965, under the provisions of the Dibrugarh University Act 1965 enacted by the Assam Legislative Assembly. The University has also introduced open and distance learning from the year 2001, in order to provide enrollments to the students who want to obtain a post graduate degree but could not enroll in the regular courses of the University. The objective of the Directorate of Distance Learning is to provide access to quality higher education to the people who are either deprived of or who want to upgrade their knowledge and studies. It also promotes research in different fields and provides guidance as well as counseling to students. It has been providing post graduate programmes in Assamese, Commerce, Economics, History and many more alongwith Post Graduate Diploma in Marketing Management and Statistics, Journalism and Mass Communication with a few bachelor degree programmes through its 36 contact centers (DUDDE, 2012).

Rajiv Gandhi University: It was set up in 1984 (formerly ArunachalUniversity) to play a positive role in the socio-economic development of Arunachal Pradesh through research, education, training and extension. The Centre for Distance Education has been named as "Institute of Distance Education (IDE)". Rajiv Gandhi University has been offering distance education programme at undergraduate level and has started B.A. in subjects like Economics, Education, English, History, Political Science, Hindi, Sociology, Tribal studies etc. There are also some certificate courses in Fisheries Technology, English for Communication etc. The courses are recognized and are approved by the Distance Education Council (DEC), New Delhi. Some of the features of IDE are Self-Instructional Study Material, Contact and Counseling Programme, Field Training and Project, Subject/ Counseling Coordinators etc (RGU, 2012).

The North-EasternHillUniversity: NEHU was set up by an Act of Parliament and notified on 19thJuly, 1973. The thrust area of the Centre for Distance Education is to offer courses in the Distance Mode to all those who for some reason or other have been deprived of formal education and are seeking higher education to enhance skill and knowledge irrespective of their age and place of residence (NEHU, 2012).

Tezpur University: It was established by an Act of Parliament (Act. No.45, 1993) in 1994. The Centre for Open and Distance Education is established in 2011 with the aim of disseminating knowledge and quality education through open and distance learning mode. It is main motto is to prepare human resources of the region and the country skilled and employable. The directorate offers various post-graduate, undergraduate, diploma and certificate programmes in emerging areas ofscience, technology & engineering, social sciences, management and humanities. Some of the programmes are M.A, M.Sc., P.G Diploma in Electronic Media, Functional Hindi, Retail Management, Investment Management, Human Resource Management etc (CODE, 2012).

Sikkim ManipalUniversity: SMU is the result of a unique partnership between the Government of Sikkim and Manipal Education. It was established in 1995 and is the first government-private initiative in the region. The University uses to provide courses on B.A, BSc, MA, MSc and diploma courses. EduNxt is available to all the students of SMU-DU which empowers students with anywhere, anytime access. Students experience a 'portable campus', have 'carry along mentors' and regularly access over one million online books and journals (SMU, 2012).

ICFAI University: Institute of Chartered Financial Analysts of India University, Tripura is included in the list of universities maintained by the University Grants

Commission (UGC) under Section 2(f) of the UGC Act, 1956. The Distance Education Council (DEC) has approved the programs of the ICFAIUniversity, Tripura. The Undergraduate programmes are BBA, BCA, B.Tech, B.Ed along with Master degrees of MBA, MCA, M.Techetc (ICFAI, 2012).

Open Universities

Three open universities are providing various educational programmes in the north eastern part of the country. Among them, Indira Gandhi National Open University is the national Open University and this university is offering different academic programmes for this region since 1986.

Activities of the National Open University in North East

Indira Gandhi National Open University is the only national university dedicated for open and distance learning. It was established in 1985 and from the next year the academic programmes were introduced in this region at the same time with the rest of the country.

Meghalaya: The Shillong Regional Centre was the first regional centre of the region established in 1988 and its initial jurisdiction was the entire North East Region of the country. It was earlier known as the North East Regional Centre of the IGNOU, as it is catered to the Seven Sister State of North East. In March 1996 the Guwahati Regional Centre of the University was set up to look after the student services in the State of Assam, Arunachal Pradesh and Sikkim. In 2001, under the North East Educational Development Project (NEEDP) of IGNOU six Regional Centres have been established in the entire seven sister states including Sikkim (RCSHILLONG, 2012).

Assam: Guwahati Regional Centre is the first regional centre of Indira Gandhi National Open University in this region. It was established in 1996 with a total 6 Study Centres and 35 Programmes. Till December, 2000, this regional centre's jurisdiction covers Arunachal Pradesh and Sikkimin addition to Assam. The Regional Centre has been registering a steady growth since its inception both in terms of the number of Programmes being offered and the Enrollment. Guwahati Regional Centre is offering around 100 Academic Programmes through158 Study Centres spread across various districts of Assam. The University is also going to setup a separate regional centre at Jorhat. During the 20th Convocation of IGNOU in 2009, the then Vice Chancellor announced the setting up of a Regional Centre at Jorhat, to cover the upper Assam.

Manipur: The Imphal Regional Centre of IGNOU stared functioning from December 2000. Three IGNOU Study Centers viz, the Manipur University SC, Churachandpur CollegeSC and Presidency CollegeSC, Motbung were

functioning under the administrative support of the Shillong Regional Centre till they were subsequently brought under the administrative control of the Imphal Regional Centre. (RCIMPHAL, 2012) .

Sikkim: Four Study Centres, two Programme Study Centres and a Special Study Centre are being run under the Gangtok Regional Center. It was established in December 2000. (RC, GANGTOK, 2012).

Arunachal Pradesh: The Regional Centre of Itanagar was established in 2000 in democratizing higher education. The centre was established under the North East Project. Located at Naharlagun, in Arunachal Pradesh, Itanagar Regional Centre had a very humble beginning in November 2000. The centre has a fully functional computer laboratory and facilities for conducting workshops and teleconferencing sessions through Satellite Interactive Terminals (RCITANAGAR, 2012).

Nagaland: Kohima Regional Centre has ten Regular Study Centres, five Special Study Centres, ten Programme Study Centres and four IGNOU CNRI Knowledge Centre under its jurisdiction and running about fifty academic programmes. The Regional Centre has total accumulated student strength of 8,490 students registered for various programmes It was established on 14th December 2000. (RC, KOHIMA, 2012).

Mizoram: IGNOU Regional Centre at Aizawl was activated in December, 2000. It was started functioning including nine Study Centres with its bifurcation from Regional Centre Shillong. At present, the IGNOU RC Aizawl delivers its services of about 50 academic programmes through eight Regular Study Centres, four Programme Study Centres and five Special Study Centres covering all the districts in the state of Mizoram(RC, AIZAWL, 2012).

Tripura: The IGNOU, Regional Centre Agartala was established in the year 2001 under North East Educational Development Project to cater to the ever burgeoning need to develop human resources in the region(RCAGARTALA, 2012).

North East Centre for Research and Development

From January 2009, the North East Centre for Research and Development began functioning from Guwahati as an academic research institute. The centre started as a positive intervention to research and development by Indira Gandhi National Open University (IGNOU) for long term progress in North-East India.

With a view to expanding and augmenting education with research and development, the centre aims to create a think tank with rich archival resources

and pool of experts to facilitate research in North-East India. Currently the centre runs a full-fledged fellowship programme of Research and Teaching Assistantship (RTA) for researchers working from and on North-East India. The centre also helps the scholars, industries, universities, governmental and non-governmental organizations to activate research and development activities in the region (RC,GUWAHATI, 2012).

The first state open university in North East:

The main aim of the university is to develop and provide easily accessible modes of quality higher education and training with the use of latest educational inputs and technology. Because of the inherent flexibility in terms of pace and place of learning, methods of evaluation etc., the university holds the promise of providing equality of opportunities for higher education and bringing into its fold the deprived and denied sections along with the fresh learners. The very purpose of the University is to promote education to reach the unreached through the Open and Distance Learning System and the motto of the University is 'Education Beyond Barriers' of age, academic background and geographical boundaries (Dutta, Ray; 2007).

Presently, the university is offering around 50 academic programmes including Doctoral, Master's Degree, Bachelor's Degree, Post graduate diploma, UG Diploma and certificate programmes. To create entrepreneurs in the vocational areas the university has taken a step to make the learners trained in the specialized areas by introducing Certificate courses. The introduction of vocational training by an open university is in itself a contribution to the needs of the people. The main intention behind the introduction of the training programme is to meet the various needs of the people of the region and make them independent. The main aim of the university is to educate its learners as well as help them in becoming self-dependent. Therefore, the University has introduced some vocational training programmes with the help of the Polytechnics and Industrial Training Institute (I.T.I s.) of the state and some other specialized institutions totally free of cost. This year, 649 youths have been benefited with this novel approach of the university administered through some selected ITIs and Polytechnics of Assam (Horizon, Jan 2011).

The university, has registered a quantum increase in enrollment in the different academic programmes under various degree courses that are being offered by the university. As per the first enrollment of the university in 2008 a total number of 4200 learners were enrolled and it has been increased to over 62,000 by 2010 i.e. a period of three years only.The number of study centres under this university has witnessed a giant leap having the numbers increased

to 200 from the time of its inception when the number of study centers was 79 (Horizon, Jul 2011).

Considering its social responsibility, four study centres- Central Jail of Guwahati, Jorhat, Abhayapuriand Biswanath Chariali Jail are run by the University. Education is provided free of cost to the jail inmates by the university. The high walls of the jail should not be the barrier to education. This is a step taken by the university to fulfill its motto i.e., 'Education beyond barriers'.

The university has been playing a sterling role in popularizing the use of ICT in higher education by way of producing audio-visual learning materials. More than 300 self-learning materials were prepared during this tenure in print form and around 50 in audio visual format as well as about 200 materials in audio format. In addition to the learning material, the university has launched several learning support services such as Community Radio Service, E-Resource Portal, Interactive Voice Response System, Conferencing, SMS alert services, blog, Social Network, EBIDYA, Ekalavya, Akashvani Phone-in programme, University on-line, VC on-line, Inter Study Centre Phone Service etc. Jnan Taranga (90.4 MHz), the first Community Radio of the north eastern part of the country administered by KKHSOU was launched on 28th January, 2009 for an experimental broadcast. The regular broadcasting of Jnan Taranga was officially launched on 20th November, 2010 by Assam Chief Minister. The community radio is an important platform for the broadcast of educational programmes which includes debates, discussions and talk shows (Horizon, Jul 2011).

The first educational interactive voice response system of the north eastern region of the country was formally launched by the Governor of Assam on the first day of 2011. It is a toll free phone service (1800-345-3613) available to the learners as well as the general public. The number has been named as 24 x 7 Learner Support Services. Learners can call at this number for any queries where an automated voice message will reply back to the learners. An e-learning portal by the name of E-BIDYA has been launched. It is digital repository where the study materials have been uploaded for the benefit of the learners. All the study materials of the programmes (including BPP, Degree, Diploma, Master Degree, Certificate course, etc) can be assessed in this web-portal. Krishna Kanta Handiqui State Open University with the help of Prasar Bharati has launched a special educational programme named 'Ekalavya'. It airs every Saturday and Sunday at 8.00 P.M to 8.30 P.M. through All India Radio Guwahati and Dibrugarh. KKHSOU offers half an hour live phone-in counseling programme weekly through the national network of Akashvani, Guwahati (AIR) where experts from the university clarifies student's

queries put across to them from their homes via telephone. This phone-in programme is aired every fourth Sunday of a month from 11.30 A.M to 12.00 Noon since 2008 (Horizon, 2011).

The Global Open University (TGOU), Nagaland

The Global Open University (TGOU), Nagaland has been established by an Act of State Legislature of Nagaland under "The Global Open University Act 2006" (Act 3 of 2006). The Global Open University (TGOU), Nagaland is empowered to award degree as specified under section 22 of the UGC Act, 1956.

This university is one of the pioneers by introducing Technology Enabled Learning (TEL) and on demand online Examinations to pursue its mission of providing means for "*Self – Paced, Self–Styled"*anytime, anywhere learning. The main aims of Technology Enabled Learning (TEL) are to bring remunerative, more affordable, high quality and skill based education for all, to constantly monitor, manage and upgrade the programmes, simultaneously spread this kind of education to all parts of the globe at a rapid pace etc. Some of the programmes entitled under TEL are MBA, BBA, MCom, MSc, MA in various vocational courses etc. (TGOU, 2012).

Major Challenges faced by ODL institutions:

Open and distance learning institutions of the north eastern region are facing different types of challenges. In a small survey of the state open university and a few directoratesof distance education in the region, we got a few major challenges:

1. Academic Challenges

- ***Acceptability of ODL System for general public:*** The concept of ODL system is still at the budding stage for the people of the northeast. It is comparatively a new concept for the general public. The first and foremost aim for all ODL institutions is to make the general public aware and establish a thrust on this concept of Open and Distance Learning. The acceptability of this mode of education is very essential for the people as this mode is designed for the benefit of the general masses. The acceptance may increase the public awareness of the need and lucidity of education through distance mode, which is still far cry from common level.
- ***Quality Assurance in ODL system:*** Maintaining quality is the major challenge for the open and distance institutes. The National Knowledge Commission opines on the importance of quality, *"the biggest challenge*

faced in higher education, therefore, is the provision of quality higher education to the greatest number, at the lowest possible cost to the learner" (NKC, 2009). And it is more challenging for the open and distance learning. For quality assurance through distance mode, the National Knowledge Commission (NKC) recommended the constitution of an External Quality Assurance Cell to assess and evaluate the ODL institutions at regular interval. Distance Education Council (DEC) also decided to have a Centre for Internal Quality Assurance (CIQA) in all open universities of the country. Professor SrinathBaruah, the Vice Chancellor of K KHandiqui State Open University highlights the following factors to maintain the credibility and success of open and distance learning system in a monograph (Baruah, 2010):

(a) Curricula of ODL system should be well thought-out, need-based, employment oriented and learners' friendly.

(b) Self-learning materials (SLM) both in print and audio-visual forms are the heart and soul of ODL system and they should be of high quality.

(c) Adequate and effective counselling sessions should be provided through face to face form as well as through audio-visual form by using information and communication technology (ICT).

(d) Timely and adequate learners support services (LSS) should be provided for success of ODL system.

(e) Quality of ODL system is immensely improved with the use of information and communication technology (ICT) and in fact, ICT drawn ODL system only makes it possible to provide education with 3As – anyone, anytime and anywhere.

(f) Transparent and foolproof examination system is another very important ingredient for credibility and quality of ODL system.

(g) Good governance is also very important ingredient of quality assurance.

(h) The future development of ODL system depends on the new innovation and research to improve the quality.

❖ ***Non availability of resource persons in professional courses***: There are various courses which are offered by the ODL institutions to the learners of this region. But there are a few constrains in case of professional courses like Mass communication, management, etc.There

is lack of qualified and well versed resource persons in the particular subject. It results that the teachers from other subjects become the counselors of the professionalcourses.

A few case studies have been found, where the counselors are basically people of Botany and Zoology for communication and journalism subject. It is the reason for which in most of the cases they are unable to fulfill the learners' query regarding answering style in the examination, preparation of dissertation, internship and many more. Now the prior concern on the part of the universities is to arrange professional people for professional courses.

- ***Implementation of vocational and professional courses*** in remote areas: It is very essential to implement vocational courses in the remote area as distance learners are basically from these areas.
- ***Non acquaintance with ICT*** (Information and Communication Technology) in remote areas: The concept of ICT is totally new in the entire region. Literacy, economical backwardness as well as proper transportation and communication are a few major considerable factors in this regard.
- ***Mis-conception on Counseling Session***: Counseling sessions are not general classes. This is the reason, it is called counseling not class. But very often the learners complain that regular classes are not held for them. The actual concept of counseling is still yet to be accepted by the learners.
- Most of the members working in ODL system coming from conventional system. Except a few regular staff members especially in teaching sector, most of them, directly or indirectly associated persons with ODL are not well versed and well trained in terms of counseling style, writing of self-learning materials, setting question papers and checking the examination copies. They are still following conventional system there, for which ODL process become confused.

2. Administrative Challenges:

There are a few challenges at the administrationpart of the universities. It varies from thestate universities to central universities and open universities to the dual mode universities. The following are the common challenges faced in administration level.

- The creation of the infrastructure for running the affairs of the institutions is the first and foremost challenge

- The working out of the needs in terms of human resource and infrastructure for creating an administrative setup is difficult for the reason that there is no model to follow in the state level.
- It is not easy to convince the people who matters for providing necessary human resource and infrastructure, because the system of ODL has not yet been easily comprehensive to the people by and large.
- The concept of Open and Distance Learning System is a keen to correspondence education for which a skeleton administrative setup is sufficient.
- Sometimesattitude of the authorities of the dual mode universities towards the distance education is not favourableand still they believe that it is the second category learning system in their own institution.

3. Financial Challenges:

As far as the financial support is concerned the state governments have been providing necessary support to meet the administrative accidences and the Distance Educational Council, Govt. of India to carry out Academic activities. Compared to the financial support received from the state governmentsare not routine and adequate. It is may be because of the lack in appreciation of the needs of the Open and Distance Learning Institution which is not applicable to DEC.

In contrast to the facilities offered by IGNOU, the unequal partner in the field ODL in the state universities have not been able to provide any financial assistance to the study centres in the form of infrastructure grants. Need to mention that whereas IGNOU has been providing rupees in lakh and such grants to the study centres for the creation of such infrastructure, these universities have been unable to sanction a small amount towards this end that unable to cope with the demand for inspectional monitoring of the study centres ensure the delivery system for want of academic and administrative staff.

4. Examination Challenges:

- Evaluation of the learners in Open and Distance Learning is not traditional or formal like other universities. It is observed that in a few institutions, the examination and evaluation are very flexible resulting high rate of pass percentage, which may not be expected from a group of distance learners.
- There is a dearth of proper question setter, examiner.Because this ODL

concept has come very recently and the style of examination related work is totally different

- Learners are not well aware of the formalities to be observed in appearing in the examination.
- There is a dearth of technical manpower to keep tract of each and every learner who is appearing in the examination in his or her own pace.

5. IT Challenges:

At the time of preparation of the audio and audio- visual study materials the first and foremost concern is the need of the learners of the north east region. While doing the survey several aspects have come up. The following are a few the challenges-

- The knowledge about the new technologies is very meager.
- The learners are basically from different age groups.
- The teaching- learning method is still in conventional style.
- The infrastructures available at study centres sometimes may not capable to use the audio and audio-visual materials
- No technical support staff are available at study centres for the learners for technical help.

6. Learner Support Service Challenges:

- Self-learning material is the key support service in open and distance learning particularly in India. It is seen that the quality of the SLMs are not equal to all the open and distance institutes. The following are a few observations on the SLMs of different institutions in the region-

  i. The standard quality of SLM of the national Open University is ideal for the other institutions which a distance learner always expects.

  ii. Some SLMs are written in the text book format. But as the name implies, the SLMs should be always self-instructional in nature.

  iii. There is a dearth of authors conversant in the writing style for the self-learning material.

  iv. Some SLMs are not methodological. They may be in the form of self-instructional, but the sequence and the methods are not proper.

v. Finally, printing and designing always create impact on the learners. But in this regard, many institutions are very casual.

- Only a few institutions are providing educational materials through audio and audio visual form.
- Most of the institutions are traditional in nature. They are not providing information electronically. E-learning facilities and e-portals are also not common tool for most of the institutions.

Conclusion

The open and distance learning institutions of the region should maintain a comfortable situation, where a learner can access to the various support services that includes audio programmes, audio visual programmes and finally the internet, through which they can search thousands of information related to their subject(Sarma, 2011).According to Sir John Daniel, Prof. Asha Kanwar, and StamenkaUvaliæ-Trumbiæ (2009) "The requirements for a model that could allow higher education to expand rapidly in the developing world are that it be readily scalable (wide access), academically credible (high quality) and affordable (low cost). This could be achieved by building higher education networks around credible examination systems run by national or independent bodies or established institutions and then encouraging a market of support providers to aid in development. Although the range of examinations would need to match the wide array of higher education programs on offer, there is considerable room for aggregation and for some existing institutions to act as examining bodies for others." To reach the iron triangle in ODL, wide access, high quality in low cost, the ODL institutions should concentrate on the evaluation process and maintain quality in the learning package supported by a strong support service.In a nut shell it can be said that literacy, knowledge on technology, availability of infrastructure, balanced economy can extend the wide acceptance of the ODL at grassroots level.

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BOOK REVIEW

A Comprehension on Educational Technology and ICT for Education

Vinod Kumar Kanvaria (Author)

Format: Hardcover. ISBN-13: 9789380570709. Pages: xii+347p
Price: Rs. 350/- only

This is the transition phase for learner and teacher fraternity. Every day we are struggling hard with the technology which has encrypted in the learning and teaching field. While talking about technology, it is pertinent question whether technology can replace teacher? Whether we should forget the teacher and teaching strategies? Whether we should forget about the classroom and classroom communication process?

The current book tries to deal with such several questions and takes a stand that teacher is a vital component for learning and teaching, but no doubt the role of the teacher has been transformed and become a much more demanding than the earlier.

The current book has a presumption that educational technology is nothing rather pursuing each and every task in the field of education in a technological way which means with minimum possible resources, minimum possible energy and efforts and with optimum utilisation of available resources.

The book begins with conceptualizing educational technology. What does educational technology mean, what are its types, what are its ways, how did it evolved and developed. Then it talks about psychological bases of educational technology. The focus of it lies on the bases shared by Ausubel, Bruner, Vygotsky and Skinner. They have conceptualized learning in their way. The book briefly discusses about their views and theory. Communication in education focusses upon the classroom communication and communication in general. Various models, components and factors related to communication are dealt with in this section.

Now it comes about learning aids and media in educational technology. What are various types of learning aids and how these can be understood in various ways, which learning aids are suitable for various learners, keeping in mind their various characteristics? There are various ways of classification of learning aids. The book endeavours to have a close look over various media and learning aids. Light has been thrown on the use of computer in developing learning material and how to select an appropriate media for learner. Then it discusses various learning and instructional strategies for whole group, small group and individual. Systems approach in education is a major field which tries to deal with problems arose in the field of education. It not only deals with the problems but also provides a scientific way to perform any task.

Recent development is the application of computer and technology in education. This book deals with online learning, social networking, computer system, application and authoring systems, technology for differently abled learners. And the most important is social and ethical issues in using computers and internet especially plagiarism and copyright issues.

Along with describing various aspects of computer technology in the field of education it also throws light on the most recent development in the education especially learning and teaching. These are ICT for education, web 2.0 tools in practices, open educational resources, opening up the new trend in education and OER for teaching-learning and professional development of teachers and teacher educators. These are especial features of this book which keeps in mind not only learners and their learning but also teachers and teacher educators.

In single line, this book is a good resource for learners, teachers, teacher educators and all the researchers in the field of education. This would also be like a handbook for all the practitioners and stakeholders in the field of education.

This is a comprehensive book on ET as well as ICT. This book addresses not only students but also teachers and teacher educators. Last three chapters namely, ICT for education: Web 2.0 tools in practices,Open educational resources: Opening up the new trend in education andOER for teaching-learning and professional development of teachers and teacher-educators are specialty of this book which makes it a must have for teachers as well as teacher educators in addition to students. Every chapter has some set of important questions well-interwoven with the content of the chapter. As a whole, this book can be seen as a comprehension from ancient era to the modern era, from teacher educator to teachers and finally from teachers to

the learners, in the field of teaching and learning, which is almost absent in any other available book in the field.

The book has tried to touch upon almost every aspect of the educational technology and ICT for education. The book has done justification to the aims and objectives of teaching and learning 'Educational Technology' as an emerging discipline. The book is informative and comprehensive, but yet not very bulky. The content of the book is in easy language. Book is good for students of education as well as teacher educators. Content is well distributed. Using flow charts made the concepts better. Most of the topics of ET are covered. It is not a lengthy book but small, short and briefly described book. Topics like application software etc. are well explained. It is economically accessible, handy and light. Elaborative description of the topics and appropriate use of examples has made this book useful.

Reader will have to add more to their knowledge by reading and collecting information's from various sources. More of concept maps could have made book more acceptable amongst students. Book can add more examples related to students life. Topics and techniques for differently abled learners' needs are less elaborated. More and different types of questions related to implementation of technology in classroom could have been added.As a whole, this book is a must have for all the students, teachers and teacher educators irrespective of subjects and places.

Reviewed by
Shilpi Singhal and Neha Tiwari
Department of Education, University of Delhi, Delhi

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Report on Workshop on eContent Development for Virtual Open Schooling

The two days workshop on eContent Development for Virtual Open Schooling was organized on 26th and 27th May 2014 is organized by National Institute Of Open Schooling(NIOS) in Collaboration with Commonwealth Educational Media Centre For Asia(CEMCA), New Delhi At NIOS,A-24-25,Sector 62,NOIDA. The workshop was in a way to a carry forward of the initiatives taken to work in Virtual Open Schooling platform launched by NIOS in collaboration with CEMCA to serve learners to continue their education and skill development. Faculty members and staffs of Academic and Vocational Department and Computer Unit participated in the training programme.

The major objectives of the workshop were

– To orient academic staff of NIOS to use Virtual Open School platform
– To enable NIOS Staff create NIOS course using Moodle learning management system
– To create and /or transform existing content for online delivery
– To develop action plan for offering secondary and senior secondary courses using Virtual Open School

In the inaugural Session, Dr. S.S. Jena, Chairman, NIOS shared that online mode is very important to reach out to a very large target group and thus, if NIOS has the objective to reach mass, online courses can help in this direction. He discussed that MOOCs is a learning process placed on internet. Sharing about development of MOOCs in India, he told that MOOCs developed by IIT, Mumbai is globally recognized. In this context, he posed a challenge before participants whether NIOS can develop such quality e-contents for National Repository for OERs.

Addressing about issues of offering online courses, Dr. jena told that there is need to change the present course structure and the course has to be credit based if the online course need to be developed. Course design needs to be done in such a manner that there is scope for the leaner to accumulate credit on different subjects as per their requirement and when the learner accumulates full credit, he will be awarded.

Dr. Jena said that as the situation changing worldwide, the course design and style of teaching and learning has to be changed accordingly. He told that this is a preliminary workshop to start with and each subject coordinator has to develop e-content with the help of their experts. 20-30 experts may be chosen in each subject,who will help in development of e-contents. He shared that resources are always available and how it is being used matters most. Regarding the use of technology, he discussed that technology is no more an option rather it has become essential to practice in everyday life. If technology is being used for lifestyle, why can't be used for education. Now, it is important for us how we take this as challenge and on a serious note, it is very important for us to create a plan for ourselves.

Sessions were organized on various themes

- Overview of Virtual Open Schooling and Moodle Learning management System
- Designing online courses
- Moodle Activities & Resources
- Editing text in Moodle
- Working with MediWIki and eXe for course creation
- Role definition in Moodle environment and creating users, enrolment, etc.
- Managing courses

After the deliberations on various themes and hands on practice, the participants were asked to Develop Action Plan for eContent Development in different subjects.

The valedictory session begins with the sharing of feedback of the workshop by the participants. Thereafter, Dr. Sanjay Mishra in his address told that it is indeed a great privilege to work with National Institute of Open Schooling in context of Virtual Open Schooling. Various meeting and workshops were organized in last two years for development of online forum to address the changing requirement of learners and it has been a great accomplishment that NIOS has already supported in this endeavour.

Dr. S.S. Jena started valedictory address referring to the participants' feedback and shared that there are 12 million learners, who are supposed to be enrolled in open schooling system to achieve Universalisation of School Education as

per the goal envisaged in Rashtriya Madhyamika Siksha Abhijan(RMSA). He told that if we can be able to enroll at least 10% of the total enrolment through virtual open school, the present workshop can be termed as successful. He thanked Dr. Sanjaya Mishra, Director, CEMCA and their team for their support and collaboration in every perspective. At the end, Dr. Kamal Swaroop Srivastava, Assistant Director (Academic).The workshop was coordinated by Sh. Sukanta Kumar Mahapatra, Academic Officer (Sociology),NIOS.

Report prepared by
Sukanta Kumar Mahapatra* and Kamal Swaroop Srivastava**
*Academic Officer(Sociology),NIOS
** Assistant Director (Academic).NIOS

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Report on Workshop on "Development Environment Awareness through Open Schooling"

A one day consultative workshop on "Developing Environment Awareness through Open Schooling" was held on 9th June, 2014 in Academic Department of NIOS. All Academic officers of NIOS along with concerned subject experts were participated in this workshop.

The inaugural ceremony started with a welcome address delivered by Dr. Kuldeep Agarwal, Director (Academic), NIOS. Dr. Agarwal in the welcome address, tinted about the objectives of the workshop. Awareness on Environment by each individual is the major concern in the present scenario and integrating the issues and constraints about environment in different school curriculum is challenging task. Dr. Agarwal remind to the house on the story "Cutting the tree" by Kali Das.

Further Dr. Agarwal, focused on integration of environment awareness in the present curriculum of NIOS both at Secondary and Senior Secondary subjects.

In Session-I, Ms. Kanchi Kohli, Environment Activist and writer in the area of environmental issues presented lecture on "Developing Environment Awareness through Open Schooling". In her presentation

Ms. Kohli cited three scenarios of environmental issues in India as:

1. Dongria Kondha, Niyamgiri Hills and Bauxite Mining in Odisha
2. Farm forest Mosalics in Karnataka
3. Flamingoes, Fishing Shelters and Port in Mundra (Gujarat)

Further Ms. Kohli cited three issues involved in the process of preserving the environment Issues on Place put up with complexity of ecological Habitats, Species diversity, origin of rivers and wild life Corridors. In the same issues related to people cited about livelihood and life, cultural association vs. spiritual connections, migration and movement.The third issues related to problems of industrial expansions on both cultivated and wild ecosystem, science and specialization in segregation environment.

Ms. Kohli, in her talk focused on curriculum as the medium to travel to places and influencing environment issues. The approach of learning materials should

be interdisciplinary approach in open schooling system, as a wider scope is inside the distance education system. Subject experts raised the issues on how waste land to be convert in to best land for the better economic growth.

Session-II in the workshop have a panel discussion on “Go Green Save Environment”. The panelist were Dr. Bharati Sarakar, Associate Professor in Biology, Delhi University; Dr. Nimish Kapoor, Sr. Scientist, Prasar Bharati; and Dr. Vandana Mishra, Assistant Professor in Biology, Delhi University. Dr. Kuldeep Agarwal, Director (Academic) was moderated the panel discussion. Dr. Vandana Mishra discussed on the importance of eco club. Dr. Mishra focused on an interactive and integrating approach should be in the Self Learning Materials of NIOS. She also cited that the environmental awareness not only integrates to pedagogy but also learners of Open Schooling system should assessed on environmental issues.

Dr. Nimish Kapoor, presented a quantitative data in terms of percentage of Human activities (95%) are responsible for climate change. Wastage of water is seen as day-today phenomena in our society which leads bad climate in our surrounding. Dr. Kapoor also focused on the importance of trees; soil and water are main dimensions to preserve the environment. Statistical information putted by Dr. Kapoor that a normal tree consumed 20 kg Carbon Dioxide and give 14 kg of oxygen. From this citation he focused on importance of plantation in our surrounding. Dr. Bharati Sarkar talked about need of curriculum change and integrates environment issues in Open Schooling curriculum. She also suggested one booklet should in every subject at secondary level and project work should be from environmental issues.

In the session-III Subject wise (Science, Social Science and Language) Group work was done with subject experts. Subject wise the experts were presented how and where the environmental issues can be merged in the concerned subjects.

The workshop ends with vote of thanks to all.

Report Prepared by
Sanghamitra Suryapani
Academic Officer (Biology), NIOS

Note for Contributors

The articles for COMOSA Journal of Open Schooling should provide useful information about Open Schooling system. In order to ensure the quality and standard of the articles/papers, the received articles/papers are reviewed by a panel of experts in the field of open and distance education and only the selected articles/ papers are considered for publication in the journal. If the article is print worthy with certain modifications, the author may be asked to do the needful.

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Depending upon the nature of contribution, the following formats may be followed:

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1. Abstract, Keywords (in about 100-150 words in a separate page (A-4 size).
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4. Introduction/Context
5. Sub-items with headings relating to:
   - Field Situations/Scenario
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   - Critical analysis
6. Innovative initiatives to address the problems, implications for ODL in the country's context/context of other countries, action points (if any)
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7. Study Tools
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