Research Article

Paradigm Shift in Higher Education through ICT: Conventional to MOOCs -A Case Study of Dibrugarh University

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Abstract

The purpose of this paper is to examine the role of ICT services in the higher education sector both in the ODL system as well as in conventional system of education. Integration of ICT services in ODL makes it wide spread, accessible to remote, accessible to all. These are found to be useful for the distance learners of Dibrugarh University (DU). Moreover, the benefits of ICT integrated education can also be achieved by the conventional students, if convergence between the two systems is established by allowing the students to earn few credits under MOOCs in CBCS. DU has already made progress in this front and due to an awareness drive a significant number of students got enrolled to various courses under SWAYAM. The researcher studied few of these initiatives taken by DU to cope up with the global trend of ICT integrated HE. Researchers, academicians, administrators of the state and other regions of the country will be benefited from the findings.

Key Words: ICT, ODL, ODeL, Conventional on-campus System, MOOCs, CBCS.

Introduction

The global education system especially the Higher Education (HE) system has changed drastically due to the rapid growth of Information and Communication Technology (ICT). Both conventional face-to-face and distance education have witnessed these shifts from primitive to ICT enabled paradigms. ICT makes the teaching-learning process more student-centred (Amin, 2013; Saleem et.al. 2013). ICT refers to use of various technologies and scientific inventions to make the communication process faster, wide spread, accessible to remote, accessible to all. It embraces all the technologies used in the process of sending to receiving, coding to decoding the various kinds of messages. The process of telecast and broadcast audio, video or audio-visual media; communicating e-contents like texts, pictures, audio or video clips, controlling and monitoring all these through network-based management system, - all are clubbed under the blanket term of ICT. In the recent years, ICT increases the communication abilities among the mass people by using technologies like instant messaging (WhatsApp or messenger), voice chat, tele-conferencing and video-conferencing, and so on. Social networking websites like Facebook, Twitter, Instagram make

it possible to the users to remain in contact and communicate regularly worldwide. The process of interaction, the style of work, the dynamics of various industries all are influenced and changed by ICT (UNESCO, 2002a; Bhattacharya and Sharma, 2007). Thus, ICT has transformed the world into a "global village," where people can communicate across the countries just like next door neighbours.

Paradigm Shift of HE

There are mainly two mega paradigm shifts in the HE system; from traditional university (conventional on-campus education) to ODL and from ODL to E-Education (Takwale, 2003). Conventional on-campus education has been experiencing a plethora of changes over the last few centuries. It travels a lot; from annual system to semester system, from marking system to grading or credit system. Presently, with the advancements in ICT, the Choice Based Credit System (CBCS) has been growing rapidly. CBCS is accredited globally and accepted as a purely learner centric and pedagogically efficient system (CBCS-Guidelines, 2015-16). The basic idea of CBCS is to give importance on the needs and requirements of the students; it provides opportunity to the learners to choose inter-disciplinary, intra-disciplinary and skill-based courses according to their aims, interests and abilities. This demands sophisticated infrastructures, and competent, skilful, efficient and accountable teachers. It also allows mobility to the learners to learn in different institutions of the country as well as abroad with the credit transfer facility.

Distance education emerged during the middle of the nineteenth century as an alternative way of learning as there was a demand for education by a large section of population. With the development and expansion of ICT, distance education has been passing through many phases like Correspondence Education, Distance Education, Open Education, Open and Distance Education (ODL), Online Education, e-learning, Blended Learning, Hybrid Learning, and finally the Massive Online Open Courses (MOOCs). Even dominance of e-contents and e- strategies in to the Distance Learning system makes a facelift to the existing ODL system by renaming it as ODeL, Open and Distance e-Learning (Mahanta and Borkotokey, 2018). An ODL system needs dynamic and innovative developments in Information and Communication Technologies for the betterment of the system, to make it more cost-effective and accessible (Mahanta, 2014a).

E-Learning or Electronic learning is a general term used to refer to computer-enhanced learning (Mondal and Mete, 2012). E-Education is used to denote both the shifts from the traditional and open and distance education to e-content based educational system under convergence. It is assumed that this transition will be complete when broadband Internet connectivity and ICT appliances are available to Anyone, Anywhere, Anytime (Takwale, 2003).

MOOCs are a very recent and extensively researched program in E-education in particular and in ODL system in general. It is a package of learning (courses) accessible through the internet (online) by a large group of (massive) students

simultaneously without any restrictions regarding age, qualification, institutional jurisdiction (open). In 2008, a course named "Connectivism and Connectivity Knowledge" was developed by Stephen Downes of Athabasca University of Canada and George Siemens of the National Research Council of Canada. The term MOOC was used to refer this course for the first time and it was coined by Dave Cormier of the University of Prince Edward Island, Canada (Marques, 2013). Gradually MOOCs gained popularity among the learners; millions of learners enrolled to various courses offered by different MOOC-platform or company viz. Udacity, EdX, Coursera, Course Builder, Blackboard, MOODLE and so on.

Keeping the world scenario in mind, the Government of India has launched an Indian

MOOC Platform named SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) to develop and make available MOOCs to the learners throughout the country. This is an indigenous initiative taken by MHRD and All India Council for Technical Education (AICTE). It is also supported by M/s. Microsoft India (Pvt.) Ltd. to host various MOOCs so that the three cardinal principles of Education Policy viz., access, equity, and quality can be achieved (Swayam-Booklet, 2018.) This provides one integrated platform and portal for online courses covering all aspects of HE and also skill sector courses (Sahoo et. al., 2018). AICTE has issued a notification regarding credits transfer for the courses done under SWAYAM. An Institution can allow their students to earn credits up to 20percent of the total courses being offered in a programme. Thus, a student can earn 80percent credit from his parent University and 20percent from any university offering courses under SWAYAM. The vision behind this initiative is to host more than 10000 online courses and to enroll about 30 million learners.

Dibrugarh University

Dibrugarh University (DU), is a dual mode University. Being the easternmost university of the country, it has emerged as a pioneering Institution of HE providing both undergraduate and postgraduate programs in various disciplines that include Science and Technology, Engineering, Humanities and Social Sciences to name a few. It was established in 1965. It is a teaching-cum-affiliating University with limited residential facilities. The territorial jurisdiction of DU covers eight districts of Upper Assam viz, Dibrugarh, Tinsukia, Sivasagar, Charaideu, Jorhat, Golaghat, Dhemaji and Lakhimpur. Assam is a State in the North Eastern part of India. Upper Assam is a region in the State having upstream of the river Brahmaputra which flows through it. It is a dual mode university. It has 175 affiliated and permitted colleges and institutes, which include General Degree Colleges and Professional Institutions like Medical, Law, Homeopathic, Engineering, B.Ed., Music, Paramedical, Management, Media, Science and Technology etc. On the campus, the university maintains 17 full-fledged teaching departments apart from 23 Centres of Studies. With this infrastructure, the University has approximately 1 Lakh (99,710) students

in regular courses during the session, 2018-19.

Directorate of Open and Distance Learning (DODL), DU was established in 2001 to bring the HE to the doorsteps of the learners. At present it is offering 19 degree and diploma programmes, both in the undergraduate and post graduate levels in various disciplines. It has 84 study centres within DU's territorial jurisdiction. More than 30,000 learners have so far been enrolled in these programmes.

In this paper, the role of ICT in the whole educational transaction, both in the ODL system and conventional face-to-face system with special reference to Dibrugarh University was studied.

Rationale of the Study

Education is the key component for socio-economic development of a country like India. The Government of India has set the target of increasing the Gross Enrolment Ratio (GER) in the HE from 24.5 (2015-16) to 30 by 2020 (National Convention on Digital Initiatives for HE, 2017). The conventional system cannot achieve this target alone due to its limited enrolment capacity, conventional courses/programmes and limited infrastructures/resources. Distance Education as an alternative system of education concentrates on i) higher rate of enrolment, ii) conventional and non-conventional courses, iii) optimum use of the limited infrastructures/resources, iv) relaxation in terms of age, qualification, time and place of study etc., to meet the changing needs of our society (Mahanta et.al., 2009). It focusses on optimum use of ICT to reach its wide range of heterogenous learners. Moreover, it is also capable of improving the relevance and quality of education (Aristovnik, 2012; Rahman, 2014). Thus, it is a system of education which concentrates on the pedagogy, technology and instructional systems that aim to offer education to the learners who are not physically "on campus. An effective and successful ODL system needs dynamic and innovative developments in ICT services for the betterment of the system, to make it more cost-effective and accessible, in other words to bridge the gap between the learners and the campus (institution).

Also due to globalization and liberalization in education, Indian HE system faces many challenges. Agreements like GATS (General Agreement on Trade in Services) and WTO (World Trade Organization) permit foreign universities to market their education in this country (UNESCO, 2002b; Sharma, 2002). Expansion of ICT services in the field of education is eradicating concept of jurisdiction of a university. This leads to creation of ICT enabled services in the educational sector. This permits many leading universities from India and abroad, private and deemed universities and other educational institutions to offer their programs to all the students all over India. This creates competition among the colleges and universities. As a result, weak and less efficient institutions face threat for the existence and survival.

Besides, the present age is the age of Information and is also known as the Knowledge Age. One of the primary

goals of the Government of India is to make India as a Knowledge Super Power within the next one or two decades. For this, India needs to bring her citizens to the highest level of their competencies and capabilities and this can be achieved only through an ICT integrated system of education for all (Takwale, 2003).

So, it is the need of the hour to reconstruct and embrace all innovative tools provided by technology in our education system. Not only the distance learners, the conventional learners also need ICT integrated supports to cope -up with the changing society, to compete with the changing paradigm. According to All Indian Survey on Higher Education, 2015-16, in India, there are 799 Universities, 39071 colleges and 11923 Stand Alone Institutions, out of which 60percent of the Colleges are located in rural areas. In this situation, the issues of access, equity, relevance, quality, management, financing etc. can be addressed only with the expansion and application of ICT integrated supports in the HE system. Moreover, our present education system is yet to make significant contributions in developing knowledge, confidence, values and skills among the young generations (CBCS-Guidelines, 2015-16). One of the major reasons behind this could be improper synchronization among the components of teaching-learning process in the conventional education system which produces unskilled, un-employed youth as out-put. So, it is necessary to find ways to make education of good quality, accessible and affordable to all, using the latest technology available (Hattangdi and Ghosh, 2008). Innovative integration of ICT may resolve these issues tactfully. Moreover, ICT can be used as a tool to overcome the issues of cost, a smaller number of teachers, and poor quality of education as well as to overcome time and distance barriers (Mc. Gorry, 2002). In this context, convergence of CBCS with MOOCs is a right platform to effectively address these issues. The convergence of conventional and on-line education may be considered as the third paradigm shift in HE. Thus, ICT enabled teaching learning pedagogies deserve proper operational strategies for which a critical and exploratory study of the same is a must.

Objectives

The main objectives of the present study were to:

1. To identify the various ICT services provided by DODLDU to its learners.
2. To study the opinion of the learners on ICT services in connection to their learning activities.
3. To study the initiatives taken by DU for convergence of conventional education and MOOCs.
4. To find the reason for joining MOOCs by the students of DU.
5. To identify the course categories of MOOCs where the students of DU enrolled.

Methodology

Research methods

The idea of this study was to look for an administrative perspective on the use of SNSs in the functioning of the school. Around 50 school administrators were invited by survey link but 38 received responses were analysed. The sample consisted of administrators like

Principals, Vice-principals, head of the departments, Academic coordinators, etc. They are serving at their respective positions from at least three years

Population and Sample

In this study, there were three categories of population. Accordingly, three different samples were selected for the study.

1. There is a total of twenty staff members in DODLDU including officers, faculties and employees and data were collected from all from all the units of the population
2. The total number of learners enrolled in DODLDU in the academic session 2018-19 was approximately 3000. 300 units (approximately 10percent of the population) out of them were selected by purposive sampling technique as the sample.
3. During study, 1791 numbers of students of DU enrolled to MOOCs and 180 units (10percent approx.) were selected randomly.

Tools

1. An interview schedule was prepared for the faculties, officers and employees of DODL to collect various types of information.
2. Two structured questionnaires were prepared; one was for the distance learners of DU and the other was for the conventional learners of DU enrolled to MOOCs.

Data Collection and Analysis

Both primary and secondary sources of data were consulted to gather information. First, institutional documents and archival records were reviewed. Then data were collected by conducting semi-structured interviews with the staff members of DODLDU and administering the questionnaires on the distance and conventional learners of DU. Some data were also collected by direct and participant observation and analysed qualitatively. Moreover, quantitative analysis was made with the help of percentage and graphical presentation where ever necessary.

Results and Discussions

ICT integrated services of DODLDU

A detailed discussion regarding the ICT services provided by DODLDU as its supports is presented below:

1. Web-site: http://dodl.dibru.ac.in: All of its information like- a brief description of the academic and administrative staff, the various support services provided by the Directorate, list of programmes offered, admission procedure, examination and evaluation process, examination centre, assignment questions, important dates, examination schedule and results etc. are being uploaded.
2. 20 computers with internet connectivity for development and maintenance of databases of the Directorate. Also, a Computer Laboratory for the learners of PGDCA and BCA programmes.
3. Multimedia CD/DVDs for the learners of MA/BA programmes.
4. A laboratory for developing e-content.

5. Radio counselling for the learners of MA/BA programmes. These programmes are not only subject specific but also informative.
6. Personal Mobile-phones of the Officials and Programme coordinators; especially frequent and flaw-less interaction is conducted between the programme coordinators and their respective learners through what's app messaging.
7. Bulk SMS
8. OHP, LCD, DVD player, Television with dish connection, Still and Video Camera: for the learners, especially for the learners of PGDJMC programme.
9. Video conferencing facility.
10. A community Radio Station named Gyanmalinee
11. A bill-board in the entrance of the head office.

The opinion of the learners on ICT services in connection to their learning activities

The learners were asked to provide their responses regarding influence of various ICT services on their learning. The results are shown by the following bar diagram (Fig-1). Fig-1 reveals that according to most (93.3percent, 85.3percent and 75.3percent) of the learners, personal mobile numbers, web-site and bulk SMS were the most useful ICT services for them. They were able to get all the necessary information regarding admission process, academic counselling, evaluation process (internal as well as external assessment) etc. through these ICT services. All the learners found the counselling (both academic and non-academic) conducted by the faculties through their personal mobile numbers (especially through the WhatsApp groups with the learners) were very motivating and effective. Only a few (10percent) counselling sessions were conducted using ICT; however, all the learners found those classes more effective compared to traditional classes. Moreover, a significant number of learners also expressed their dissatisfaction about not receiving the bulk SMS (35percent), not picking up the land line phone connection by the employees (69.3percent), boring content of CD/DVD and Radio programmes (83.3percent), not adequate ICT support for PGDCA programme (70.7percent). Results related to e-content laboratory could not be found as it was established in the directorate after completion of data collection.

Initiatives taken by DU for Convergence

Dibrugarh University has already implemented the CBCS in its post graduate programs in 2012 and also initiated to introduce the CBCS in the undergraduate programmes since 2016. However, due to different issues viz., inadequate infrastructure, insufficient faculty, lack of proper coordination among different academic departments, it is yet to be implemented. So, it has been trying to overcome these issues by convergence of MOOCs with the conventional education; accordingly, from the session, 2017-18, it has initiated some steps for awareness generation

and enrolment of its students in the SWAYAM platform as directed by MHRD and UGC. A detailed discussion is presented in the following headings:

1. Steps taken within the University Campus.
2. Steps taken for the affiliated Colleges.
3. Steps taken through EMRC, DU.

1. Steps taken within the University Campus

1. The College Development Council (CDC) of DU has organized four one-day orientation programmes on CBCS and SWAYAM for all the Principals of the Colleges affiliated to DU. In these workshops, focus was given on how the choice of courses under SWAYAM can be helpful as Generic Electives in the under graduate programmes of CBCS. Around 250 principals and representatives from various affiliated colleges of DU participated in these orientation programmes.
2. DU also has constituted a SWAYAM committee to acclimatize and enroll its faculties and students in suitable courses in the SWAYAM platform. This committee has made several awareness drives to each of the in-house Departments and Centre of Studies of DU. As a result, a remarkable number of students (1208) enrolled to SWAYAM courses.

2. Steps taken for the affiliated Colleges

The CDC of DU has suggested the affiliated colleges to organize orientation and workshops on CBCS and SWAYAM so that, the college teachers and students can appreciate the significance of SWAYAM courses in CBCS. Till July 2019, a total of 12 colleges have organized such workshops for their faculty members and students. Moreover, members of the committee guided the college teachers and students through e-mail and telephone in this context. A total number of 583 students enrolled to various courses under SWAYAM.

3. Steps taken through EMRC, DU

The Educational and Multimedia Research Centre (EMRC) of Dibrugarh University has taken some steps as part of its digital initiatives:

1. It developed 24 e-Contents for the undergraduate programs of Physical Education under the Consortium of Educational Communication (CEC), New Delhi.
2. 13 MOOCs proposals were prepared by some of the faculty members of DU and submitted to CEC, New Delhi for approval. Upon approval, these courses will be offered under the SWAYAM platform globally.

The questionnaire for the learners enrolled into various MOOCs was analysed both qualitatively and quantitatively. The following results were revealed:

1. Learners Profile:

- There is no gender disparity among the learners enrolled to MOOCs as 50.6percent of the learners are male and 49.4percent are female.

- Most (59.4percent) of the learners were from semi urban locality, 28.6percent are from rural and the remaining (12percent) are from urban locality.
- Among the MOOCs learners most (82.8percent) of the learners are from PG level.

2. The following figure (Fig-2) shows the percentage of learners regarding their reason for joining MOOCs.

Majority (44.4percent) of the learners opined that they joined MOOCs to get benefit in their current studies and they joined courses related to their primary discipline. Another significant number (30percent) of the learners joined MOOCs to update themselves with the global scenario, while a few (17.2percent) opined that they joined MOOCs to get benefit in their future professional life. 2.7percent joined MOOCs due to curiosity, and the other 5.7percent joined due to teacher and peer pressure

3. In SWAYAM platform, during study there were four course categories viz. Post - Graduation, Under-Graduation, Diploma and Certificate courses where the learners can enrol on their own. The pie diagram (Fig-3) shows the learners' preferences for course category

Most (57percent) of the learners were enrolled under post-graduate category while a few (23percent) were enrolled in undergraduate courses. It is also found that certificate and diploma courses are less popular among the students. It resonates the finding that 44.4percent of the learners joined MOOCs to get help in their studies. Moreover, it can be inferred that students prefer to join MOOCs according to their levels of studies. This is substantiated by our finding which states that 82.8percent of the learners are from PG level.

Conclusions and Recommendations

New developments and trends in ICT have transformed the world into a global village. Accordingly, with the integration of ICT services, two great paradigm shifts take place in the HE-conventional to distance education and distance education to on-line or E-education, finally to MOOCs. To cope up with this, MHRD has launched indigenous MOOCs platform SWAYAM.

DODLDU adopted several ICT services to provide support to its learners. Dynamic and innovative developments in ICT are a must for the betterment of the system, to make it more cost-effective and accessible (Mahanta, 2014b). Although, personal mobile phones (messaging through WhatsApp), web-site and bulk SMS were found to be very effective on the learning activities of the learners, other services were not properly used or not supplied properly to the learners. It follows that DODLDU needs to improve its ICT services to reach the mass.

Moreover, a successful implementation of CBCS in DU is possible if CBCS is made convergent with the SWAYAM. Although a whooping number, a total of 1791 (1208 from PG + 583 from UG classes) of students enrolled in the various SWAYAM courses, no teachers had enrolled to this platform during that session. It is necessary for the

teachers to take a course under MOOCs to understand the system and to guide the learners properly. In addition to that, the teachers can enhance their career by joining the Refresher Courses available on SWAYAM Platform. Moreover, teachers and administrators need to support and monitor the students as dropout rate of MOOCs is very high. This study is expected to help the other HE institutions in general and the DU in particular in many ways. Even if, it is a limited study, on the basis of the results of this study the academic and administrative aspects of DODL can be reviewed and enhanced. Moreover, it would help administrator of DU for preparing future planning and their executions.

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Appendices

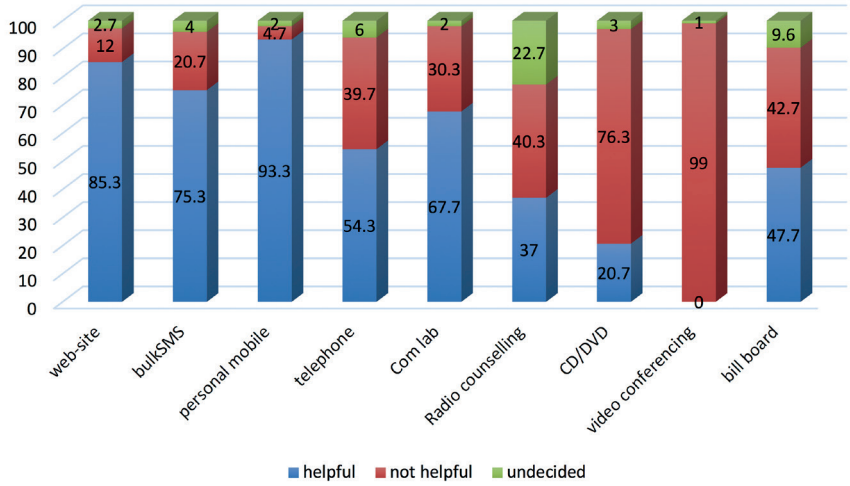

Figure – 1: Opinion of the learners on ICT services

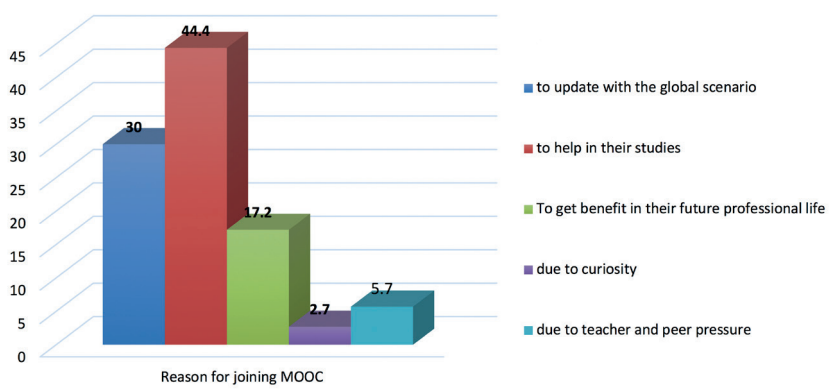

Figure – 2: Reason for Joining MOOCs

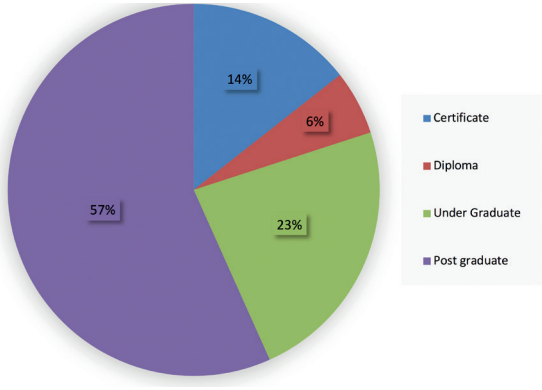

Figure – 2: Learners Preferences for Course Category