

## The Role of ICT (Information and Communication Technology) in Higher Education System of North East India

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### Abstract:

Information and Communication Technology (ICT) plays a pivotal role in enhancing the quality and accessibility of the education system. The present paper attempts to study the various influences of ICT in Higher Education in India, particularly in the North East India. A good higher education system is necessary for all round prosperity of the nation. As the use of digital media and information is increasing day-by-day in all over the world, the role of ICT in education has also become more and more important. Higher education facilitates the growth of any society by providing people opportunities to reflect on all the aspects of the society. ICT helps to share best resources and study materials in higher education and changes the whole education system by modernizing the teaching learning process. This paper explores the various tools, uses of ICT and its relationship with the Higher Education. It highlights the factors related to policy, planning, funding, technical

requirements etc. for swift driving of ICT in Higher Education in India and North East India in particular. This paper also provides suggestions to tackle various challenges that would help in the implementation of ICT and simultaneously increasing the quality of higher education.

(Key words: Information and Communication Technology (ICT), Higher Education, ICT tools, ODL, challenges)

### Introduction:

Human resources play the pivotal role in the economic, social, cultural developments of a country. The basic aim of the higher education is the development of the human resources. Dr. Radhakrishnan

once said that the aim of education is “to turn out leaders of men” and that “universities should inspiring young men and women noble ideas so that they may be ready to meet the call of nation”. Education should develop a sense of responsibility, self reliance and overall confidence. Higher education i.e. the education after the 10+2 stage has been recognised the main sector responsible for the all round development of a nation. Higher education provides people with opportunity to reflect on the critical social, economical, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialized knowledge and skills.

The most striking innovation in the field of education is the integration of information and communication Technology (ICT) in higher education. ICT is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. ICTs can be divided into two components- Information and Communication Infrastructure (ICI)

which refers to physical telecommunication systems and networks (cellular, broadcast, cable, satellite etc) and the services that utilize those (Internet, voice, mail, radio, television etc) and Information Technology (IT) that refers to the hardware and software of information collection, storage, processing, and presentation. The functions of ICT also include the evaluation, acquisition, tendering, leasing and disposal of software and hardware.

### **E-Learning and Web-based learning – Applications of ICT in Higher Education:**

E- Learning or Online Learning allows one to learn anywhere and usually at any time. It is used to refer the computer enhanced learning, although it is often extended to include the use of laptops, notebooks and mobile technologies such as android and windows phones it may include the web based teaching materials, multimedia CD-ROMs or websites, email, blogs, text chat, educational animation,

computer aided assessments etc. various educational sites contain knowledge databases which is also a part of E-learning. The knowledge databases offering indexed explanations and guidance for various queries – can be viewed using some graphical software.

The use of above mentioned well-advanced technologies has now enabled the learners of flexible learning to stimulate a virtual learning and take the learners to virtual campus wherein the teacher-learner interaction becomes possible in the cyber space. The flexible teaching-learning strategies provide high quality education and ensure equity in educational opportunities, particularly to the disadvantaged like physically challenged, adult learners etc.

Web based learning environments may be designed for distance as well as face to face learners. In distance learning students work on their own at home or at the office and communicate with faculty and other students via internet, e-mail, electronic forums, videoconferencing, chat rooms,

instant messaging and other forms of computer-based communication. It is also known as open learning.

### **Higher education scenario of India:**

Though higher education is very old in India, modern higher education in India began with the establishment of Hindu College in Calcutta in 1817. By 1855, there were 281 high schools and 28 colleges. To regulate them, three universities; Bombay, Calcutta and Madras were established in 1857 by then British Indian Government. The growth continued un-impeded and by 1947, there were 19 universities, 496 colleges with 2,40,000 students. University Education Commission, 1948-49 (popularly known as Radhakrishnan Commission) emphasized the need for setting up an apex body to co-ordinate the growth and development of education at the tertiary level and maintenance of standards in education. Thus the University Grants Commission (UGC) came in to existence by an act of parliament in 1956.

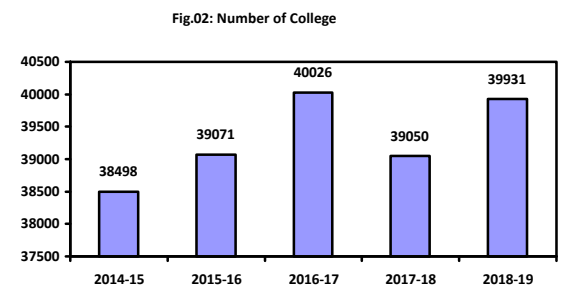
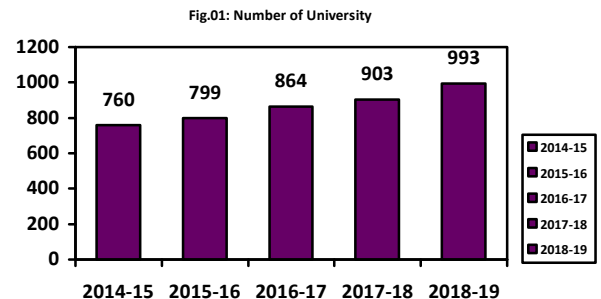
Since 2010-11, the Ministry of Human Resource Development is conducting an annual web-based All India Survey on Higher Education (AISHE) which covers all the Institutions in the country engaged in imparting of higher education. As per AISHE (2018-19), the total enrolment in higher education and Gross Enrolment Ratio (GER) are 37.4 million and 26.30 respectively.

As per AISHE (2018-19) type wise details of Universities of India is as given below-

Type of University	Number of
Central University	46
Central Open	1
Institution of National State Public University	127
Institution Under State	371
State Open University	5
State Private University	14
State Private Open	304
Deemed University-	1
Deemed University-	34
Deemed University-	10
Deemed University-	80
Grand Total	993

The number of Universities and similar Institutions listed on AISHE portal has increased from 760 in 2014-15 to 993 in 2018-19 by almost 30.7% as shown in the figure 01. Whereas the number of colleges

has also increased from 38498 in 2014-15 to 39,931 in 2018-19 by about 3.6% as shown in the figure 02:



(Source: <http://aishe.nic.in/>)

### Higher education in the north east region of India:-

The northeast region of India consists of eight states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim. It is one of the most diverse, heterogeneous and society complex regions in the world. This region's

development is impeded by certain inherent difficulties such as inadequate infrastructure, adverse climatic conditions and mountainous landscape. The region's peace and social life is often disturbed by border clashes and ethnic tensions. However, the region is endowed with rich bio- diversity and natural resources. The literacy rate in many of these states is above the rest of the country. Skilled human resources to exploit the local resources, if developed, such as tea, timber, tourism, oil, coal and bio-resources, offer immense potential for the economic progress of the region.

Before independence of India, there were only 15 colleges in the north eastern region, majority were located in the Assam area. The establishment of the first University at Guwahati in January 1948 gave a real boost to the expansion of higher education from the pre-university up to the postgraduate and doctoral level in the whole of North East India. In spite of the late start, higher education in North Eastern India had a very rapid growth in post independent era.

The University network in North East India today consists of: (1) Gauhati University, Guwahati (2) Dibrugarh University, Dibrugarh (3) Assam University, Silchar (4) Tezpur University, Assam (5) Rajiv Gandhi University, Itanagar (6) Manipur University (7) Mizoram University (8) The North Eastern Hill University, Meghalaya (9) Nagaland University (10) The Tripura University (11) Sikkim University. (12) Assam Agricultural University, Jorhat (13) Krishna Kanta Handique State Open University, Guwahati , (14) Central Agricultural University, Imphal and (15) Cotton College State University, Guwahati.

### **Influences of ICT in the Higher Education system of North East India:-**

The formal education systems through schools, colleges and universities have not been able to fulfill the educational need of the large population of India. To cater the need of education, the concept open and distance learning (ODL) education has become popular in India.

ODL is any learning activity within formal, informal, and non-formal domains that is facilitated by information and communication technologies to lessen distance, both physically and psychologically, and to increase interactivity and communication among learners, learning sources, and facilitators.

Now in India there are 13 state open universities and one national university (IGNOU).

The universities of North East offering ODL facility are:-

Arunachal : Rajiv Gandhi University, Itanagar

Assam : Dibrugarh (DDE, DU), Gauhati University (IDOL, GU), Krishna Kanta Handique State Open University (KKHSOU) and Tezpur University (CODL, Tezpur)

Meghalaya: NEHU

Tripura: Tripura University

Some other private universities like ICFAI, Sikkim Manipal University etc have also their branches in the NE region offering open and distance learning. ICT has various applications in these ODL institutions:-

➤ Website: The website for an educational institution is a very important facility as it provides details, official and authentic information of the institution worldwide using web and internet.

➤ Course Material: In the ODL system, the course material (Self Learning Materials) is designed and provided by the university itself. Now in ICT based ODL the course materials have become available in electronic form along with the printed one.

- IDOL(GU) makes available of its study material at the 'Bodhi Droom' where course materials and assignments are uploaded subject wise.

- The 'E-Bidya' is the e-learning portal of the KKHSOU where the study materials of the University on various subjects are available for access.

- CODL, Tezpur University has their course content of different courses in soft version which are available and accessible from their webpage.

➤ Community radio: Community radio an application of ICT is one of the popular media to reach the unreached. In NE region KKHSOU started the first community radio service named as “Jnan Taranga”(90.4 FM) from 20<sup>th</sup> November’2010.”Radio Luit” (90.8 FM) is another example of ICT based community radio service launched by IDOL(GU) in 2011.

Alert services through SMS/e-mail, declaration of result through website, viewing provisional online mark sheet and Toll-free numbers (which can provide educational interactive voice response for meeting the educational need of the students) - all these are various implementation of ICT in higher education.

Even ODL institutes like KKHSOU, IDOL (GU) have also started social networking facilities like online chat, group, forum etc- through which the students are able to make

contact with the subject coordinator as well as other course mate online to discuss their queries.

With the help of ICT the Government of India had established CIC (Community Information Center) and CSC (Common Service Centers) all across the North East through which students were able to collect information regarding higher education. E-Governance project is another implementation of ICT in North East India. Among the NE states - Assam (Sonitpur and Goalpara district) and Mizoram(Aizawl) are in the pilot implementation of this project.

### **Scope of ICT in Higher Education:**

#### **ICT in Teaching Learning Process:**

ICT has a vast scope in the field of education and it has been used in various areas of higher education such as teaching-learning, educational research, administration etc. The major important representation of ICT in education is the presentation and use of teaching aids. The concept of traditional class rooms of desks,

notebooks, pencils and black board to an online forum of computers, software and internet. Computer multimedia offers ideal opportunities for creating and presenting visually enriched learning environments. Online course materials may be accessed 24 hours a day, 7 days a week and teachers and learners no longer have to rely solely on printed books and other materials in physical media house in libraries for their educational needs. With the Internet and World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. Also it assures lifelong learning.

#### **ICT in Academic and Research and Administration:**

Products and processes of ICT provides access to a lot of information on innumerable topics and it can perform complex numerical problems would account for their wide spread use in research. Since the computing powers of computers and

bandwidth of internet have increased a lot – which have made it possible to conduct complex calculations on large data sets required for research purpose. Communication links make it possible for research teams to spread across the world instead of concentrated in a single institution. Online full text databases and online research libraries/virtual libraries provide researchers with online access to the contents of hundreds of thousands of books from major publishing houses, research reports published in electronic journals. ICT for administrative purposes includes the preparation colleges/universities announcements (regarding admission, examination etc.), reports, student registration etc and publication of them through their respective websites.

#### **Prospects and challenges of ICT in Higher Education of NE:-**

With the excitement of positive aspect of ICT in Higher Education sector we will also have take in to consideration the problems



and prospects in its proper implementation.

Literature on ICT in education continues to project that it can help improve North East India's higher education system by providing greater equity, better access and improved quality. ICT promotes the generation of opportunities for new business and occupations for a large number of population which will generate the economy, reduces unemployment and enhances the standard of living of society.

While using ICT in education has some obvious benefits, ICT also bring challenges. First is the high cost of acquiring, installing, maintaining and replacing ICTs. Majority of the people of N.E. India live in rural areas and they have poor access to the internet. So, it is necessary that they are exposed and trained in basic computing skills and ICT utilization. Moreover the low awareness on the IT literacy is also a major challenge.

Given below are the some risks of implementing ICT in higher education of N.E. India:

- It may create a digital divide within class as students who are more familiar with ICT will reap more benefits and learn faster than those who are not as technology savvy.
- It may shift the attention from the primary goal of the learning process to developing ICT skills, which is the secondary goal.
- It can affect the bonding process between the teacher and the student as ICT becomes a communication tool rather than face to face conversation and thus the transactional distance is increased.
- Also since not all teachers are experts with ICT they may be lax in updating the course content online which can slow down the learning among students.
- The potential of plagiarism is high as student can copy information rather than learning and developing their own skills.

**Conclusion:**

Integration of ICT in higher education is inevitable. The increasing use of ICT has brought changes to teaching and learning at all levels of higher education system leading to quality enhancements. The optimal utilization of opportunities arising due to diffusion of ICTs in higher education system presents enormous challenge. Nonetheless, it has become an indispensable support system for higher education as it could address some of the challenges facing higher education system in the country. Moreover, it can provide access to education regardless of time and geographical barriers. Similarly wider availability of course material in education which can be shared by means of ICT, can foster better teaching. While technology can influence the way how students are taught, it would also enable development of collaborative skills as well as knowledge creation skills. ICT enabled education will ultimately lead to the democratization of education and it has the

potential for transforming higher education in India.

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