

# Issues, Possibilities and Problems in Higher Education using ICT

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## ABSTRACT

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ICT is a medium for information and communication technology. The standard of education should be improved. Fast-track digital media and records, information technology, the effect of ongoing developments in educational (IT) technology expertise on education as the universe shifts. Technology Focused on Education (IT). In the 21st century, ICT's position in education is becoming more important. ICT helps to share the availability of educational best practices and best course content. In the concept of the teaching and learning process, ICT-based curriculum creates shifts in educational goals. ICT encourages research institutions to enter vulnerable communities and emerging foreign markets in education. Over the past decade, major changes in manufacturing, agriculture, medicine, business, engineering and other fields have been profoundly brought on by new ICT tools. New teaching methodologies include the use on the part of lecturers of audiovisual, computer and telemetry equipment. The aim of this paper is to discuss the relevance of knowledge and information. Communication Technology, major issues and higher education problems in India

Keywords : ICT, Higher Education, Tools for ICT, Technology, ICT Policies

## I. INTRODUCTION

Information and communication technologies (ICT) constitute a diverse group technological tools and resources used to communicate and create, disseminate, store and manage technologies such as radio, television, video, DVD, telephone, satellite systems, computer and network equipment and Software; as well as the associated electronic equipment and services courier (UNESCO, 2002). ICTs are potentially a powerful tool for expanding educational opportunities and can provide distance learning resources. TIC encourage students to take

responsibility for their own learning and offerings problem-centered and inquiry-based learning, which offers easy access and information-based resources. It is necessary to acquire the ability to use technology as a tool to research, organize, evaluate and communicate information and possession of the fundamental understanding of ethical or legal issues and the use of information technologies in education, effects of continuous developments in information technology (IT) on education. The pace of change brought about by new technologies has a significant effect on the way people live, work and play around the world. New and emerging technologies challenge

the traditional teaching process and learning, and how education is managed. Computer science, although an important field of study in its own right, it has a major impact in all areas of the program.

The Internet can be described as the communication network that connects individual information while The Internet of Things (IoT) is an interconnected system of distinctively addressable physical items with various degrees of processing, sensing, and actuation capabilities that share the capability to interoperate and communicate through the Internet as the joint platform [1]. Thus, the main objective of the Internet of Things is to make it possible for objects to be connected with other objects, individuals, at any time or anywhere using any network, path or service. The Internet of Things (IoT) is gradually being regarded the subsequent phase in the Internet evolution. IoT will make it possible for ordinary devices to be linked to the internet in order to achieve countless disparate goals. Currently, an estimated number of only 0.6% of devices that can be part of IoT has been connected [2]. However, by the year 2020, it is likely that over 50 billion devices will have an internet connection. Easy global communication instantly provides access to a wide range of data, difficult assimilation and evaluation skills. India faces countless challenges in terms of infrastructure, socio-economic, language and physical barriers for people who wish to access education (Bhattacharya and Sharma, 2007). However, it is hoped that ICT will transform the educational scenario in the country. But then, can it address these needs and fulfill multiple roles in higher education for the benefit of all stakeholders. The potential for transforming ICT in higher education into India has helped increase the country's higher education needs through part-time and distance education programs. It can be used as a tool to overcome cost issues, fewer teachers and poor quality education as well as overcoming barriers of time and distance (McGorry, 2002). Mooij (2007) argues that

differentiated ICT-based education can should provide greater reliability, validity and efficiency of data collection and greater ease of analysis, evaluation and interpretation any level of education.

As the world rapidly evolves towards digital media, the role of ICTs in education has become increasingly important. It has transformed how knowledge is disseminated today in terms of teachers' interaction and communication with students and vice versa. In addition, it can provide networking structures across borders and foster empowerment among the students. But then what was its impact in higher education scenario in the country. The emergence of ICT has fundamentally changed practices not only of business and governance, but also of education. As the world rapidly moves towards digital media, the role of ICTs in education has become increasingly important. There was one unprecedented growth in the use of ICTs in education, research and extension activities. The sudden boom in information technology has transformed how knowledge is disseminated today. Higher education systems have grown exponentially over the past five decades to meet the demands of quality education for all. This aspect has gained momentum due to accelerate the progress of information and communication technologies (ICT). The demand for skilled and skilled labor is steadily increasing contemporary globalized society. In this context, access to quality higher education for all has emerged as a determining factor for growth and development. In order to increase access to higher education and improve its reach in the most remote areas of the country's contribution open and distance learning institutions are increasing. ICT in education is used to develop course material providing content and share content communication between learners, teachers and creation of the outside world and delivery of presentations and conferences, academic research, administrative support, student registration, etc. Society challenges the education system. In recent years, the speed, efficiency and

global knowledge communication has created a new base for cooperation and teamwork, both nationally and internationally. The growing role of information technology in development society calls for an active reaction to information issues society.

## II. ICT'S NEED

Education is a lifelong process, so access to it is the need for information explosion is an ever growing phenomenon access to ICT is therefore necessary. Education must respond to needs of a variety of learners and therefore ICT is important for this need. It is a societal requirement that individuals must have technological knowledge. We must increase access and reduce the cost of education to meet the challenges of illiteracy and poverty-ICT is the answer.

## III. EDUCATION'S IMPORTANCE OF IT

Immediacy to learning information at any time Collaborative learning, Multimedia approach to education. Authentic and up-to-date information Better access for disabled children. Combination of work and education Learner-centered approach for Better quality of education and new modes of interaction. High-quality and profitable professional employer workplace development. Upgrading of employee skills, increased productivity. Development of a new learning culture. Cost sharing and training time with employees. Increased portability of training. Increase the capacity and cost-effectiveness of education and training systems. Reach target groups with limited access to formal education and Training Support. Improve the quality and relevance of existing training the structures ensure the connection of educational institutions and programs emerging networks and information resources promote innovation and lifelong learning opportunities.

## IV. ICT IN INDIA'S HIGHER EDUCATION SCENARIO

India has one of the largest higher education systems in the world composed of more than 651 universities according to UGC in 2013. Beside there are 31,324 colleges of higher education in the country in August 2011 according to the report on higher education in the 12th five-year plan 2012-17. The higher education system in India continues to suffer due to insufficient access to technology and inequity. However, it is believed that the application of ICT in higher education can transform the educational scenario in the country. ICTs in higher education are used to develop course material, content delivery and content communication sharing between learners, teachers and the outside world creating and delivering presentation and conferences, academic research, administrative support, student registration, etc. ICT policy in higher education aims to prepare young people participate creatively in the establishment, sustenance and growth of a knowledge society leading to the overall socio-economic development of nation and global competitiveness. The introduction of ICT in education has profound implications for the whole educational process from investing to using technology to address key issues access, equity, management, efficiency, and pedagogy and quality education. ICT provides technology that has the capacity to promote and encourage the transformation of education from a teacher-led enterprise to student-centered models. With the help of ICT, educational institutions can offer programs remotely. Technology-facilitated educational programs remove geographic barriers. The growing use of ICTs as tools of everyday life have seen the pool of generic skills expanded recent years to include information literacy.

## V. HIGHER EDUCATION BIG ICT PROGRAMS

India has taken major initiatives in terms of content dissemination and improving education through information and communication technologies.

1. For example, Gyan Darshan was launched in 2000 to broadcast educational programs for schoolchildren, university students and adults.

2. Gyan Vani was another such important milestone who broadcast programs provided by institutions such as IGNOU and IIT. As part of the UGC National Class Initiative, educational programs are broadcast daily on Gyan Darshan and the Doordarshan National Channel (DD1).

3. E-Gyankosh, which aims to preserve digital learning resources, is a knowledge repository launched by IGNOU in 2005. Almost 95% of IGNOU's printed documents have been digitized and uploaded to the repository.

4. The National Program for Technology-Enhanced Learning (NPTEL) launched in 2001 is another joint initiative of IIT and IISc that promotes education through technology.

5. In addition, the ambitious National Mission on ICT Education has been launched by the government to harness the potential of ICTs throughout the length and breadth of the country. In 2009, the government approved the historic "National Mission on Education through ICT" program. The National Mission for Education through ICT is a centrally sponsored program submitted by the Ministry of HRD and approved by the Cabinet Committee for Economic Affairs (CCEA). The mission plans to meet the learning needs of 500 million people in the country.

6. A number of other projects have been sanctioned for innovative use of IT / ICT.

a. The Consortium for Educational Communication was responsible for creating electronic content for 87 undergraduate courses.

b. UGC approved an electronic content publication proposal for 77 postgraduate courses

c. National Technology Enhanced Learning Program.

7. The National Knowledge Network (NKN) and Connected Digital have launched an initiative to cover 1,000 institutions in addition to providing digital campuses, video conferencing rooms, wireless hotspots, laptops / desktops to all students professional / scientific courses and Wi-Fi connectivity in hostels. A major development during the year was the launch of Aakash - the low cost computer tablet on October 5, 2011. An amount of Rs. 47.72 crore was released at Indian Institute of Technology, Rajasthan, for projects relating to the acquisition and testing of low-cost computing devices under the NMEICT program.

8. Using the A-View software developed under the NMEICT, a 14-day teacher empowerment program has been conducted for batches of 1000 teachers at a time by IIT Bombay and is considering a plan to conduct a training program. 2-week teacher training for a batch of ten thousand teachers at a time.

9. IIT-Bombay launched the Center for Distance Engineering Education Program (CDEEP) as a classroom interaction emulated by the use of real-time interactive satellite technology (Center for Distance Engineering Education Program, India, 2007 ).

10. The launch of EDUSAT brought satellite connectivity to large parts of rural India. The Indira Gandhi National Open University (IGNOU) uses satellite, television and internet technologies to deliver online courses.

11. Private sector involvement, such as the HP Technology for Teaching Grant, has transformed the ICT infrastructure in institutes like Anna University and Jadavpur University.

12. In 2007, the Distance Education Council (DEC) made it possible for all to enable all the major institutes in the country to offer online courses. Since then, IIM-C, IIM- B, IIM-K, XLRI and other management institutes have started offering courses in association with private actors like Hughes, Reliance, NIIT, etc.

13. IIT-Kanpur has developed Brihaspati, an open source online learning platform.

14. A growing number of private actors such as Hughes Global Education, Manipal Education Group, Centum Learning, UEI Global, Shiv Nadar University, etc. offer online training courses in association with the main central and state universities using a good ICT infrastructure.

## **VI. OPPORTUNITIES AND PROBLEMS IMPACTING ICT IN HIGHER EDUCATION**

ICTs have emerged as powerful tools for disseminating knowledge and information. Their unprecedented introduction and use in higher education has generated varying responses. The opportunities can be categorized as aspects relating to the role of ICTs for access and equity in education, their role in pedagogy for quality learning and teaching at higher education level and in inducing innovations in approaches and programs. The presence of ICT in the education sector is steadily increasing. Despite the fact that education is a social enterprise and that teachers are traditionally the mainstay of the learning process, ICT is a very powerful tool for disseminating knowledge and information, a fundamental aspect of the educational process. The 11th plan proposed to reach the target of 15% GER by 2012 through increasing institutional capacity and increasing the "reception capacity" of existing educational institutions. These efforts also recognize the push created in this direction by the constant increase in enrollment at the elementary and secondary levels. Another most important dimension of the higher education sector influenced by the integration of ICT is the improvement of the quality of teaching-learning. In addition, the changes occurring as a result of globalization and internationalization attach particular importance to knowledge and information. Therefore, the integration of ICT would help not only to promote personal growth, but also to develop "knowledge

societies."Conventional teaching-learning processes are undergoing a paradigm shift. The move towards the development of educational programs is well supported and encouraged by emerging educational technologies. Besides improving the learning experience of students, the role of ICT in capacity building / training of educational personnel has great potential. National level institutes can play a leadership role in improving the technical and managerial workforce in different disciplines through ICT networks and collaborations. ICT has the potential to generate innovative and effective teaching-learning and research methods. The inclusion of learning tools, easier use of multimedia or simulation tools, easy and almost instant access to data and information in digital form.

## **VII. CHALLENGES TO USE ICT IN HIGHER EDUCATION TEACHING**

While the use of ICT in education has clear advantages, ICT also poses challenges. Quality of higher education in the country as the majority of Indians living in rural areas have limited internet access, there is a need for them to be exposed and trained in basic computer skills and the use of ICT . In addition, the low knowledge of computer skills is also a major challenge facing India in implementing ICT in higher education. According to the International Telecommunication Union, the Internet and Mobile Association of India (IAMAI) reports that a majority of government institutions do not have sufficient computer systems. India's linguistic diversity requires the development of content in multiple languages to increase ICT applications. According to the 2011 census, the rural-urban distribution is 68.84% and 31.16% in terms of population, where the majority of the rural population does not speak English.

The high cost of acquiring, installing, operating, maintaining and replacing ICTs. Although potentially of great importance, the integration of ICT in



education is still in its infancy. Introducing ICT systems for education in developing countries has a particularly high opportunity cost. The four most common mistakes in introducing ICT in education are installing learning technologies without skipping reviews, student needs and availability of content, imposing top-down technology systems without involving faculty and students, using inappropriate content from other parts of the world without appropriately customizing it, producing content of low quality which has a poor instructional design and is not suited to the technology used. This can affect the bonding process between teacher and student as ICT becomes a tool of communication rather than a face to face conversation and thus transactional distance is increased. Additionally, since not all teachers are ICT experts, they may be lax in updating course content online, which can slow down student learning. It is necessary to train all stakeholders in ICT. The cost of hardware and software can be very high.

### VIII. CONCLUSION

The integration of ICT in higher education is inevitable. In the coming years, the focus will be on the use of ICT to strengthen the system in open and distance learning mode. ICT policy and planning in institutional and sectoral higher education should identify the specific role of ICT in research capacity building and provide for an adequate infrastructure supported by capacity building. Information and communication technologies have undoubtedly brought huge changes in education, but we have not yet reached the desired level of adoption of IT in higher education in the country. Optimal use of the opportunities arising from the diffusion of ICT in the higher education system presents a huge challenge. Nonetheless, it has become an indispensable support system for higher education as it could address some of the challenges facing the country's higher education system.

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