



# The Importance of ICT in Education and ITS Growth and Development in Higher Education

## KEYWORDS

ICT, Digital media, Higher Education

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**ABSTRACT** *It is clear from various studies that use of ICT in education is increasing very rapidly in whole India. Within a very short time ICT (information and communication technology) has become, one of the basic needs of modern society. Today ICT is playing a major role in formal and non formal forms of education. In this process ICT can play a great role in all the activities by providing a lot of benefits to students, teachers, parents and Universities itself. ICT can be used for providing education to the people who are unable to come to school due to various reasons. With the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow more in the coming years. The present paper is an exploratory study based on data available on various websites, magazines, journals and articles etc. Besides a technique for educational development in higher education ICT is also necessary for the social and economic development of the nation.*

## Introduction

India has high population and a high percentage of young people and the education system is largely formal. In developing countries like India education is still regarded as an important bridge of social, economic and political mobility (Amutabi and Oketch, 2003). The Indian higher education system is one of the largest in the world. With the number of universities and colleges increasing day by day.

There is a challenge faced by Indian universities providing higher education in India, in terms of Access, Equity and Quality. Several steps have been taken by the Indian government to increase the quality in higher education by adopting state specific strategies.

People in India who wish to obtain education face infra-structural, socio-economic, linguistic and physical barriers in India (Bhattacharya and Sharma, 2007). According to UNESCO, 2002 there is a lack of learning materials, teachers, less education facilities, high dropout rate etc in India and the other countries. The only way through which India's large population of India can be reached and this problem can be solved is through taking the proper advantage of ICT. It can remove the barriers that are causing the problems of low rate of education in any country. It can overcome the issues of cost, less number of teachers, and poor quality of education as well as overcome time and distance barriers.

The main objectives of the paper is to evaluate the importance of ICT in education and growth and development of ICT in higher education.

## WHAT IS ICT?

Information and Communication Technologies (ICTs) are referred to as the varied collection of

technological gear and resources which are made use of to communicate. They are also made use

of to generate, distribute, collect and administer information. Information and Communication Technologies consist of the hardware, software, networks, and media for collection, storage, processing, transmission and presentation of

information (voice, data, text, images), as well as related services (Sukanta Sarkar, 2012).

There are various ICT tools available which can be utilized for the knowledge creation and dissemination in the modern world. Tools include Radio, T.V, Internet, Mobile phone, Computer, laptop, tablets and many other hardware and software applications. ICT is about the new ways in which people can communicate, inquire, make decisions and solve problems (Sharmila Devi et.al, 2012).

## ICT in Education

ICTs can improve the quality of education by increasing student interest and dedication, by making possible the procurement of fundamental skills and by improving teacher training.

ICTs can be in the form of videos, television and also computer multi media software, that merges sound, transcripts and multicolored moving image. Through ICT available encouraging, attentive and trusted content can be made which will keep the student interested in the learning process.

People remember only 20% of what they see, 40% of what they see and hear, but about 75% of what they see and hear and do simultaneously and so by using multimedia in education we can increase the productivity and student memorizing rates. ICT can thus be utilized for better teaching learning process and improving quality of education.

Subjects like History, Geography, Political science, Physics, Chemistry, Biology, Physical education can easily be taught by showing small movie related with the subject to create interest among the students. Such type of movies and related multimedia material is easily available at academic repositories and from various related sites with the help of Internet. ICT is a potentially powerful tool for extending educational opportunities, both formally and non-formally to scattered and rural populations groups who have been deprived of education due to cultural, social or financial reasons (Sharmila Devi et.al, 2012).

ICTs has made available online course materials, which can be accessed 24 hours a day, 7 days a week. Teachers and learners no longer have to rely solely on printed books and other materials available in libraries for their educational needs. The teachers can make their lecture more attractive and lively by using multi-media and on the other hand the students are able to understand the lessons more easily taught to them (Annapurna Pyla, 2012).

According to many analysts ICT enhances teaching, learning, and research. By replacing of conventional teaching method of chalk and talk can be by innovative methods like Power point presentations and animations, modeling and simulations, video clips and using AV aids, LCD projectors etc. to further improve teaching and learning. Through this the learning ability of the student increases and it also helps the teacher to present the difficult concepts effectively within a short time. Different online courses of the foreign universities can be made available for the students in the internet centre in collaboration with the universities (Desai and Shah, 2015).

### ICT IN RESEARCH

Due to lack of supporting systems and the quality of the research, research work in India is lagging behind and very less percentage of initiatives have been taken in research field. If ICT is integrated in Indian higher education it will enhance both the quality of research work and number of individuals in the research work in various fields will also increase.

Use of ICT saves time, money and effort of the researchers in their research studies i.e. they can able collect and recover data in a fraction of seconds. The analysis of the research work become much easier to the researcher through the availability of various software. They can download large amount of data and can perform complex computations in a fast manner to get an accurate and reliable data. The researchers can access of thousands of online journals, articles, eBooks and publications etc. for their research work, and researcher can also submit their publications online (Annapurna Pyla, 2012).

The concept of traditional method of research work has changed by Information technology and it has helped the researchers to do more feasible and reliable study. The researchers can handle more research works as they can complete their research work in a short period of time with the help of ICT.

The most direct use of ICTs in research is in data processing. Computer data processing not only frees researchers from the cumbersome task of manually analyzing data but also facilitates quick and accurate analysis of huge amounts of data from samples covering thousands of respondents.

Another important feature of ICTs in research is the use of online full text databases and online research libraries/virtual libraries which are the direct outcome of the progress in ICT (Sukanta Sarkar, 2012).

### Growth of ICT in Higher Education.

The **National Mission on Education through Information and Communication Technology (NMEICT)** Under the National Mission on Education through ICT (NMEICT), funded by the Ministry of Human Resources Development, Government of India, a proper balance between content generation, research in critical areas relating to imparting of

education and connectivity for integrating our knowledge with the latest advancements is being attempted.

**National Programme on Technology Enhanced Learning (NPTEL)**, a joint initiative of the IITs and IISc provides E-learning through online Web and Video courses in Engineering, Science and Humanities streams aiming to enhance the quality of Engineering education in the country by providing free online courseware. For content development in India certain initiatives have been taken for creating digital repositories and learning objects. Such initiatives include Sakshat portal of Govt. of India (GOI),

**The National Knowledge Network (NKN) and Connected Digital** has launched an initiative to cover 1,000 institutions besides providing digital campuses, video-conference classrooms, wireless hotspots, laptops/desktops to all students of professional/ science courses and Wi-Fi connectivity in hostels. A major development has been the launching of *Aakash* – the low cost computing tablet

Under the N-List program of INFLIBNET, being run under NMEICT, lakhs of e-books and thousands of high quality paid e-journals are being made available to colleges and universities with a view to increase research culture in teachers and students.

The launch of EDUSAT brought satellite connectivity to large parts of rural India. Indira Gandhi National Open University (IGNOU) is taking maximum advantage of satellite, television, and Internet technologies to offer online courses.

### BENEFITS AND CHALLENGES OF ICT

#### Benefits

- Through Tools available on the Internet both teachers and students are aided to manage writing assignments to detect and avoid the problem of plagiarism and copyright violations.
- Used ICTs properly in teaching it can improve the quality and the quantity of educational services.
- Empowerment of girls and women in any society can only be achieved through Education and by the use of ICT as an educational tool it can lead to women's advancement.
- ICTs can act as a tool for effective enhancement of learning, teaching and education from early childhood development and further education and training.

#### Challenges

- High cost of acquiring, installing, operating, maintaining and replacing ICTs
- Using unlicensed software can be very problematic, not only legally but in the costs of maintenance, particularly if the pirated software varies in standard formats
- Online teaching has its own unique challenges as not all faculties are ICT literate and can teach using ICT tools.
- Most of the teachers are not willing to introduce new technologies to themselves first and subsequently to their students. There is resistance from teachers, basically from older teachers as compared to younger ones, to apply ICT in their subject. Moreover they have fear that ICTs will replace teachers.
- One of the major challenges in the implementation of ICT in education is the initial thinking that is based on the technology. ICT hardware and software are not designed as per educational purposes rather they are designed for general purpose

- Many developing nations the basic requirement of electricity and telephone networks is not available.
- Many collages do not have proper rooms or buildings so as to accommodate the technology.
- Most of the online content is in English. This causes problems in many nations where people are not conversant or comfortable with English.

The survey done in 2007 in two highly ICT enabled states Gujarat and Karnatka says that Access to government school students to ICT tools outside schools is in general low. The access of private school students to such devices is comparably better.

## CONCLUSION

The use of ICT in education can definitely increase access to learning opportunities. It can increase the quality of education with advanced teaching methods and improve learning results of education systems. ICT has also led to the emergence of Open Educational Resources (OERs). The use of ICT creates an open environment which enables the storage and the reuse of information materials

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers.

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