



The Role of Information and Communication Technology (ICT) in Higher Education

Rizwan Ahmad Shah

Research Scholar School of Education. , Central University of Kashmir (India)

Abstract:

It is said that knowledge is power. Our nation is ready to emerge as knowledge superpower in the world by transforming our population in to knowledge enabled working population. in the socialization of human world education plays an important role to transform a biological man in to the social being. at the time when the every nook and corner is being guided by information and communication technology (ICT) then education on which the process of socialization largely depends can't be ignored or remain untouched with the blessings of information and communication technology:

It is a bitter fact that our country is facing the challenges of inadequate technology access and inequity coupled with economic considerations and technological know-how. So, emergence of ICT can be seen as a practical solution which has created a drastic change in almost every field including business, governance and education and its miracle has enabled the world to move forward very rapidly towards digital media. So, its role in the enhancement of education has become increasingly important. In the present 21st century the use of ICTs in education and its related activities like research and others are watching an unprecedented growth. This transformation can be termed as a revolution and seen in the form of a boom which has changed the pattern of disseminating education in today's era. The changes are not only in the form of dissemination but it can be seen in the betterment of interaction pattern and communication skill with the students and vice versa. The main idea behind this paper is to find out the role of ICT in education sector in our country with an assessment of its impact on students and teachers which has facilitated the growth of interactive learning in higher education with social effectiveness.

Keywords: *Higher Education, ICT, teaching learning, blended learning*

1. Introduction:

Human life has seen drastic changes in almost all the aspects of life; whether it is business, governance or education and the main reason behind these changes is the emergence of information and communication technology. According to census report of 2011 our country has touched the population mark of 1.2 billion .and which is still increasing .a revolution in the field of information and communication technology has been witnessed in every aspect of life.



The developing nations of the world including India which was having a very big proportion of youth, the demand for education saw a boom and it was considered as a very strong bridge of social, economic and political mobility.(Bhattacharya & Sharma 2007)^[1] In our country ICT was considered to revolutionize the transformation of education sector which was suffering from various challenges such as infrastructure, socio economic, linguistic and physical barriers for people who were trying to change their destiny with the sword of education. ICT was considered as a boon in the field of higher education and its emancipatory and transformative potentials has surely helped in increasing the higher education requirement of nation by part time and distance learning schemes. It was also proved beneficial by overcoming the cost issues, less number of teachers, poor quality of education and in addition it has overcome time and distance barriers. (Amutabi & Oketch,2003)^[2]. The education system based on Information & Communication Technology (ICT) is able to provide greater reliability, validity and efficiency of data collection. It was very helpful by easing the analysis, evaluation and interpretation at any educational level. As the world was enjoying the adventurous advantages of digital media, so in the same way its role in educational system becomes increasingly important. It has transformed the way how knowledge is disseminated today in terms of teacher's interaction and communication with the students and vice versa

Role of ICT in changing the teacher-student interaction: With the help of ICT, the role of teacher can be seen as:

- (i) Learning facilitator.
- (ii) Collaborator, coach and mentor
- (iii) Knowledge navigator and co-learner.
- (iv) Teacher gives students more options and

Responsibilities for their own learning.

In the same way the role of students has also seen unprecedented changes which are appended below:

- (i) Active participation in the learning process.
- (ii) Producing and sharing of knowledge.
- (iii) Collaborative learning with others.

So, it can be said that the application of ICT in the field of education has been proved very beneficial both for students and teachers besides employers and government. In addition, it can also be harnessed for multiple purposes such as increasing the capacity and cost effectiveness of education and training systems and enhance the quality of higher education. During the last two decades ICT has fundamentally changed the basic shape of working of education. (Mishra & R.C.Sharma 2005)^[3] The present era of 21st century is having a great demand of integration of ICT in Indian universities and colleges and there is an aim of acquisition of ICT skills



as part of core education system. In order to fulfill this goal, the Government of India has formulated the National ICT policy, which is being implemented through vigorous activities of National Informatics Center (NIC) and encouragements from University Grants Commission (UGC), All India Council of Technical Education (AICTE) and Department of Science & Technology (DST) throughout the country. ICT has played a very powerful role in changing many educational practices of higher education and enabled both students and teachers to gain access to technology, direct communication and enhanced the capability of quality learning. Niyaz Ahmed (Aug 01, 2011)^[1], in his paper: "Effective educational management: An implication of ICT in administration of higher education institutions" states that the use of ICT in educational management will benefit analyzing of data quickly and provides the administrative power for efficient management of education. J. Meenakumari & Dr. R. Krishnaveni in their study (2011)^[2] in "Transforming higher educational institution administration through ICT" has identified a comprehensive set of functional areas of administration. Susan Methan K (2011)^[5], in her study "Impact of information communication technology (ICT)" on professional development and educational needs of library professionals in Universities of Kerala reveals that most of library professionals have a positive approach towards the application of ICT based service in library.

Types of ICT devices in the classroom: Now a day, many devices are being used to impart quality education at all the levels. Some of them are appended below:

1. **Use of computers:** Computers and related gadgets such as iPad or tablets are being used by teachers to assign work to students and for illustrating visual related subjects for making the lesson very easy and accessible for students. In addition, the use of internet explorer by students and teachers has broadened their learning capacity and awareness.
2. **Class websites and blogs creation:** The word Press and other content management software are used by teachers to create class blogs to post assignments. If the school has no website server to host these class blogs, the teacher can use free website hosting services like wordpress.com or blogger.com. Via these platforms, the teacher will create a blog under a sub domain of that host. For example, matchclass.wordpress.com, so students will find all academic assignments via that blog. It is very easy to manage and post data to a blog, because they have simple HTML editors.
3. **Utilization of digital microphones:** Often the big classrooms suffer from endless noise, so in order to sort out these problems teachers have started using wireless digital microphones. These are very affordable devices and can transmit the voice to the loud speakers to enable every student to hear clearly. The same device can be used for asking questions by students and there is no need to strain the voice by teachers.
4. **Use of smart phones and mobile learning:** Use of smart phones by students and teachers has enabled the facility of mobile learning which is very much similar to e-learning or long distance education. M-Learning is very convenient and accessible as students can access academic information like assignments via an educational



mobile application (APP). The biggest advantage of this facility is that it can be done in the classroom or outside the classroom.

5. Smart Interactive whiteboards: Teachers are now using smart interactive white boards having touch screen function. With this the teacher displays visual images by using projector. They get operated by commercial power supply and can be proved very beneficial in saving time.

6. Effective utilization of online media: The modernization of electronic media has enabled the teachers and students to use online streaming media in the classroom and with the help of projector, computer, internet and a white board. They are displaying a real time example using sites like YouTube

2. Challenging Factors Affecting Utilization of ICT in Higher Education:

In our country, ICT has played a very crucial role in the betterment of higher education. But it is also a burning issue in today's era that ICT is suffering from many challenges and problems. Many literary issues are continuously projecting that ICT can play much bigger role in improving India's higher education by providing greater equity, better access and improved quality. In the year 2011,^[6] a survey was conducted by UGC on accredited colleges and it was found that percolation and penetration power of ICT in higher education is far from satisfactory due to poor infrastructure and many things can be done to improve the situation. Majority of our population residing in the rural areas have poor access to internet, so it is very much essential to improve their exposure and training on basic computing skills in order to reap the real benefit of ICT. According to the International Telecommunication Union; The Internet and Mobile Association of India (IAMAI) report a majority of government institutions do not have sufficient IT systems. As our nation is blessed with multilingual culture, so the development of content in many languages will surely enhance the ICT applications. According to the 2011 Census the rural-urban distribution is 68.84% & 31.16% in terms of population where majority of the rural people do not speak English. Therefore, the need to develop content in all the official languages of India becomes all the more important. While there are many challenges in development of local language content particularly due to the absence of script and font standardization, local language computing becomes problematic though not impossible. However, this needs to be addressed immediately. The main problem which the current scenario is facing is high cost of acquiring and installing, operating and maintaining ICTs. While potentially of great importance, the integration of ICTs into teaching is still in its infancy. Introducing ICT systems for teaching in developing countries has a particularly high opportunity cost because installing them is usually more expensive in absolute terms than in industrialized countries whereas, in contrast, alternative investments (e.g. buildings) are relatively less costly (UNESCO, 2009).^[7] The common mistakes in the introduction of ICTs in teaching are appended below:



3. Innovative steps by ICT in Higher Education in India:

It is beyond doubt that ICT has been proved as a boon in the field of higher education and our country has reaped a lot by taking some very fruitful initiative steps in terms of content delivery and furthering education. There are many examples which can be cited to prove this. Such as in the year 2000, Gyan Darshan was launched. The main idea behind the launching of GyanDarshan was to broadcast educational programmes for school kids, university students and adults. Further, GyanVani was another step for broadcasting programmes contributed by IGNOU and IITs. Under the UGC country wide classroom initiative, education programs are broadcast on GyanDarshan and Doordarshan's National Channel (DD1) every day. EGYankosh which aims at preserving digital learning resources is a knowledge repository was launched by IGNOU in 2005. Almost 95% of IGNOU's printed material has been digitized and uploaded on the repository. The National Programme for Technology Enhanced Learning (NPTEL) launched in 2001 is another joint initiative of IITs and IISc which promotes education through technology. Moreover, the ambitious National Mission on Education through ICT was launched by the government to harness ICT's potential throughout the length and breadth of the country. In 2009, the government approved the landmark "National Mission on Education through ICT" scheme. The National Mission on Education through ICT is centrally sponsored scheme submitted by the Ministry of HRD and approved by the Cabinet Committee on Economic Affairs (CCEA). The Mission has planned a variety of initiatives aimed at developing and standardizing digital content for Indian higher education segment. The Mission envisions catering to the learning needs of 500 million

4. Conclusion:

It has been accepted by all the countries whether big or small, developed or under developing that education is the biggest driving force behind the social and economic made possible for everybody through information and communication technology but still a lot has to be done to achieve the desired level of IT adoption in higher education the use of information and communication technology .Around the globe it has been accepted by all that education is the biggest driving force behind the social and economic development of any nation and its access and affordability for everybody has now being made possible by ICT. But still a lot has to be done to achieve the desired level of I.T. In our globalizing society, the ever increasing demand for skilled and competent labour has seen a drastic boom. In this scenario, the access to higher education with quality is a very determining factor for the economic and social development of the individual. The last two decades of our education sector have witnessed the development of ICTs and its use in education not only improves classroom teaching learning process, but also provides the facility of e-learning. The use of ICT has enhanced distance learning and with this the teaching community is able to reach the remotest areas and learners are also getting benefitted from any corner of the world. It can be said that ICT enabled education has enabled the democratization of education.



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