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ROLE OF ICT IN HIGHER EDUCATION IN GLOBAL ERA

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ABSTRACT

Information and communication technologies (ICT) have become commonplace entities in all aspects of life. In the 21st century world is moving rapidly into digital media and information, so the role of ICT in education is very important .Higher education in the country is experiencing a major transformation in terms of access, equity and quality. ICT helps to share availability of best practices and best course material in education. ICT based education causes changes in the educational objectives in the conception of the teaching and learning process. In this regard the paper addresses the integration of ICTs in various aspects of higher education in the present scenario.

KEYWORDS: Information and Communication Technologies (ICT), Higher Education, ICT Tools, Technologies, Policies and strategies.

1. INTRODUCTION

In 21st century higher education in the country is experiencing a major transformation in terms of access, equity and quality. Information and communication technologies (ICT) is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. This broad definition of ICT includes technologies as radio, television, video, DVD, telephone, satellite systems, computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing and electronic mail (UNESCO, 2002). ICT is potentially a powerful tool for extending educational opportunities and can provide remote learning resources. ICT encourage students to take responsibility for their own learning and offers problem centered and inquiry based learning which provides 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 the possession of the fundamental understanding of the ethical or legal issues and use of information [1] [4] [6].

2. ICT AND HIGHER EDUCATION

Success of ICT-based education depends upon the teacher's ability to keep pace with the developments since teachers are responsible for quality control, improvement of learning and the aggregate effectiveness of the learning process [2]. The main role of teachers is to act as experts and leaders to motivate learning. Using ICTs in higher education administration is fundamentally about harnessing technology for better planning, setting standards, effecting change and monitoring results of the core functions of universities. The use of educational technology provides teachers with opportunities for traversing an entire continuum of possibilities and different teaching and learning activities. An analysis of the integration of ICT in higher education involves the consideration of three important dimensions of innovation that have repercussions on university institutional culture and the professional development of lecturers such as changes in the educational objectives and in the conception of the teaching and learning process, changes in students' and lecturers' roles and changes in university organization [4] . The main role of teacher will not be to transmit information and culture but rather to act as experts and leaders, motivating learning. In this sense, teacher have to be ready to make use of the possibilities that ICT offer, such as different learning contexts focused on the students, presenting them with several types of interaction, offering different degrees of control of their own learning, adapting to their personal interests, promoting collaborative tasks and developing autonomy in their study . There has a shift from a teacher as a knowledge transmitter to a learning facilitator, collaborator, coach, knowledge navigator. Communication technologies to a great extent, replaced both the teacher and the text books by placing the

learners at their own in the learning process. ICT enhance the quality of education by increasing learner motivation, by facilitating the acquisition of basic skills and by enhancing teacher training [7].

3. POLICY INITIATIVES FOR ICT IN HIGHER EDUCATION

Indian government initiatives in the promotion of e-learning and ICT integration is encouraging. In 1992, government of India, stressed upon to improve the quality of education by using the scheme called Sarva Shiksha Abhiyan (SSA) with the help of ICT. NNE is the India's Online Educational Network of 47 portals covering the entire gamut of education in India with dedicated state and city portal to support and enhance educational processes.

EDUSAT was conceptualized to meet communication requirements of the education sector. National Knowledge Network (NKN) facilitates creation, acquisition and sharing of knowledge resources among the large participating Institutions, collaborative research, country wide classrooms (CWCR) etc. and help the country to evolve as a major knowledge society in the true sense. National Knowledge Network (NKN) aims at establishing a strong and robust Indian Network which will be capable of providing secure and reliable connectivity to all participating educational institutes.

National programme on Technology Enhanced Learning(NPTEL), National Mission on Education through ICT, Sakshat Portal , eGyankosh, VSAT-based Mobile e-learning Terminal, are some of the initiatives taken by the Indian Government for the development of e-learning in the country. UGC initiated a scheme called "ICT for teaching and learning Process" for achieving quality and excellence in higher education. UGC launched a mega programme called "UGC INFONET" a network of Indian Universities and Colleges by integrating ICT in the process of teaching, learning and education management. National Library and Information Services Infrastructure for Scholarly Content (N-LIST) is a collaborative project between UGC-INFONET Digital Library Consortium & Information for Library Network(INFLIBNET) Center [3] [8] [17] .

Also some of the Indian universities namely IIMs, IIT-Kharagpur, IGNOU, BITS Pilani, NIIT are offering online programs for more than 10, 000 professionals annually. Some other universities which have incorporated e-learning in their higher education courses like Amrita Vishwa Vidyapeeth, Jadhavpur University, Aligarh Muslim University, Central Institute of English and Foreign Language, Hyderabad University, Kerala University, State Open University (KKHSOU), Guwahati, etc. The educational radio and television channels like GyanDarshan, a fully digital 24 hour exclusive educational TV channel, GyanVani, a unique Radio Service of IGNOU, have played a prominent role in supplementing the teaching-learning process. Eklavya Initiative uses Internet and television to promote distance learning. This exemplifies the feasibility of using ICTs to effectively enhance the learners support services even in the North Eastern part of India. [9]

4. ICT TOOLS AND ONLINE RESOURCES

Appropriate use of ICT can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the 21st century. When used appropriately, ICT enable new ways in teaching and learning. These new ways of teaching and learning constitute a shift from a teacher-centred pedagogy to one that is learner-centred. If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and skills that will empower students for lifelong learning. Print media, Audio media, Audio-Visual media, Telecommunication and Multimedia Communication are the different stages of the use of ICTs in India, which are being experienced in educational transaction in all higher educational institutes throughout India.

A. ICT Tools used in Higher Education :

- Use of PPT and slide Projector
- Use of General Applications Software(Ms-Word, Ms Excel, Ms Power-point)
- Facility of Intranet & Internet
- Installation and regular update of antivirus

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B. Increasing access to Online Resources :

- Subscription to journals & e-books
- e-Learning Content , Mobile Learning Content
- Creating Portals
- EDU-SAT through Distance Mode
- Management of Library Automation
- Use of Blogs
- Wiki and Discussion Board to exchange idea asynchronously.
- Use of online chat session, virtual classroom or meeting to exchange idea synchronously.

C. Increasing access to ICT Facilities :

- Wireless networks, Local Area Networks (LANs), campus backbone
- Acquisition of access equipment (computers, laptops, mobile phones)
  - Scalability--- thin clients
  - Access to loan facilities
- Video conferencing facilities
- Create flexible access by opening 24/7/365

D. Teaching and Learning Activities with ICT tools :

- Lecture Presentation using PPT
- Instructional Designer , Curriculum Development
- Use of bulletin Boards
- Use of Web 2.0 technologies with tools like Blogs, Wikis, Rich Site summary
- E-Portal , Social Networking sites
- Student feedback using ICT
- Collaborate with other faculty members of their speciality by means of ICT to prepare activities and learning resources.
- Design of Online Tutorship
- Access to the Information System with Internet

E. Research Activities using ICT :

- Communication : Indicates the way the researcher communicates for research purpose.
- Information sharing
- Simulation : Virtual LAB and robotic experiment
- Evaluation : Various tools and technology for feedback and analysis

F. Online Tools to explore Research Articles :

- Google Scholar
- Microsoft Academic Search
- Research Gate
- SSRN

5. MEASURES TO BE TAKEN FOR ICT-BASED EDUCATION [4] [9] [10]

a. Quality of content development for ICT based educational material need to be checked. For this training should be conducted for educational content development specialist such as instructional designers, scriptwriters, audio and video production specialist, programmers & web developers.
b. Various courses should be launched by using ICT to utilize available resources in the college in a productive form.
c. Before starting ICT based teaching and learning activity, a research need to be conducted on the availability and quality of the physical and human resources.

d. There is a need of networking through Local Area Network(LAN), Wide Area Network (WAN) , Information and Library Network(INFLIBNET) which would lead to increased academic activities and research.
e. ICT policy and master plan is a pre-requisite to successful mobilisation of funds, both internally and externally, for implementation.
f. Recurrent cost of software licenses like applications for the main information systems, specialised applications, database platforms, and desk top applications need to be considered.

6. CONCLUSION

Integration of ICTs in higher education is inevitable. In the coming years the thrust will be on the use of Information and Communication Technology to strengthen the system in the mode of open and distance learning . Higher education has to do a careful analysis of long term costs and benefits. Teacher has to adapt continuous professional development in the educational uses of technology. Institutional and sector-wide higher education ICT policy and planning should identify the specific role of ICT in enhancing research capabilities and provide for adequate infrastructure backed by capacity building. Digital libraries, access to online databases, networking, etc., can be enhanced through inter-institutional collaboration to ensure optimal usage of ICT expertise and resources. The wide adoption of ICTs calls for mindsets and skill sets that are adaptive to change. As the government increases its investments in ICT for education, continued efforts must be made to ensure that investments in technology positively impact all aspects of education. ICT enabled education will definitely lead to the democratization of education.

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