

Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol 2, No 5, 2011

www.iiste.org

Role of ICT in the Process of Teaching and Learning

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Abstract

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio-videotape. Edusat technology has become very powerful media for interactive participation of experts and learners and it reaches the unreachable. Emerging learning Technology (ELT) of blogging, Integrated Learning Modules, a pod cast, Wikis, Enhancement of Browsers, e-learning, M-learning, U-learning have started making rapid strides in teaching learning processes.

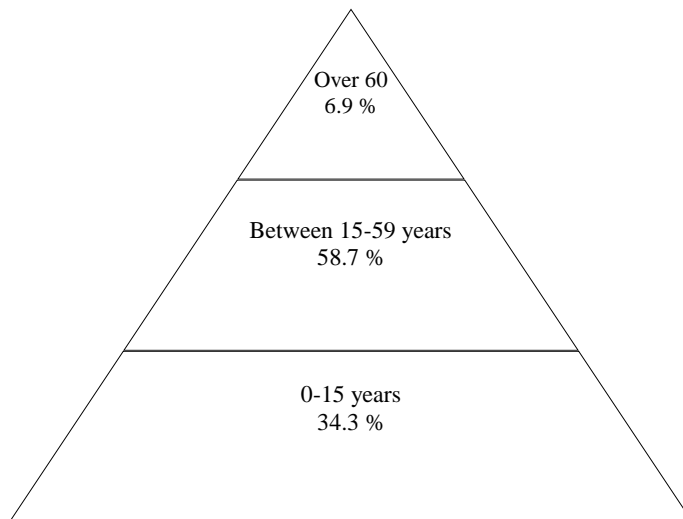
Keywords – Web Browsers, Technology enhanced learning, Self paced learning, Instructional software, Interactive learning, Integrated Learning Module, U- learning. E-learning ,M-learning.

Introduction

The world that awaits us is a world of huge technical change presently the world is inhabited by very large number of scientists and technologists and they are more than the scientist and technologist that have lived on it during the history of mankind. All developments mainly on the economic growth of the nation are based on updated knowledge and information into economic activity has resulted in a profound structural and qualitative change. There is a window of opportunity for Indian because youth power in India is 59 % in the age group of 15-59 %.

Japan is the most ageing nation in Asia, over 10 lac citizens are over the age of 90 years. Finland which is known as the proud nation of producing NOKIA mobile and earning over 40 billion dollars per year from it is the most ageing nation of Europe.

According to Dr Kastusiranjan one of the noted scientists of India has observed that global development over the past two centuries have already demonstrated that the central role of advances in science and technology and their applications in the social economic and cultural transformation of the world is tremendous. Human experience with technology is constantly evolving and is finding expression in myriad dimension. Technology has been affecting every part of human endeavor.



India can benefit for demographic dividends. India has 550 millions below the age of 25 offers an excellent opportunity to become technical force. It is huge opportunity which unfortunately we have not fully tapped and transform our learning and teaching through ICT's in the knowledge based economy.

The new ICT enables self-paced learning through various tools such as assignments, computer etc. as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student through e-mail, chat session etc.

This promotes active learning, sharing of ideas, discussion and also provides immediate feed back. This activates paced learning and allows effective mapping of learning path ways.

This requires high quality meaningful digital content to be made available to teacher and student. Teachers particularly should possess updated knowledge and skills to use the new digital tools and resources to help students achieve high academic standards. We definitely need a vision to equip our students to meet the emerging trends. The present high tech and competitive society will sustain only through the knowledge of ICT. ICT has the capacity to store, retrieve and process e-content both fast as well as accurate. ICT represents one of the current applications of technology towards teaching- learning processes.

According to UNESCO: ICT is a scientific technological and engineering discipline and management technique used in handling information in application and association with social, economic and cultural aspects. Various agencies like NCTE, SCERT, and IASES are being equipped with necessary hardware. NCTE is in the process of developing ICT based instructional packages for teacher educators. It would use ICT enabled learning which would bring in several innovations in teacher education.

Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology. ICT has the potential to transcend the barrier and space. ICT integration in the field of education has impacted hugely in improving the quality of education. It is widely believed that ICT integration will help us in making education more accessible and affordable. Increasing role of ICT will make education more democratic that is improving the quality education services available to even students sitting in far- flung remotest corners of the country.

The new environment of interactive learner-centered approach of ICT has completely meta-morphosed the process of education i.e delivery and dissemination. The technological creativity learner will help generate sharing of knowledge to perform tasks in a better way and to develop their capacity and skills to keep pace with the rapid changes but the pace of change is so fast that what was avant-garde few years ago is just a thing of past. We must not allow the ICT related opportunities to slip out of our hands.

We must empower our youth with the latest technology to tap the latest skills and hidden potential of our youth population. There is considerable hope that technology can expand and improve education in all levels with special reference to design and content of instructional materials, delivery, and assessment and feed back.

In technology enhanced learning (TEL) teacher's role will be more challenging and definitely different from what is presently the traditional class room teaching. In the new role he will be more a director/coach or a facilitator, because the ET enhances the quality of teaching and learning by arousing inquiry, curiosity and exploration. ICT will afford opportunity to the individual for self-paced learning, which caters to learner's abilities and aptitude.

The paper attempts to discuss the role of ICT to meet the challenges of knowledge economy and to explain the development of new methodology of learning and teaching aptitude in the changing context i.e. privatization, liberalization and globalization.

One of the major advantages of using ICT's in the class room has been to prepare. The present and next generation of students for a workplace where ICT's particularly computers internet and others related technologies are becoming more and more important. These computer savvy and technologically literate students possess the desired competencies to use ICT's effectively. These knowledgeable persons possess the competitive edge in an increasingly uncertain globalizing job market. Along with the technology literacy development of specificity skills are also required. For well paying jobs specifically of skill is of the primary importance.

ICT which includes radio and television as well as other high technology newer digital devices such as computers and Internet have been treated as generally powerful enabling tools for educational change and reform. On-line teaching as innovative teaching has been accepted widely, which includes on-line net working, role of e-moderator, e-learning? Web –sites which are very popular with teachers and students are Google, Yahoo, Gmail, Rediffmail, Wickipedia. The modern concepts of ICT have helped professionals to cope the challenges for digital information and technology through the development of digital literacy resources. This can be built by:

- (a) Acquiring Digital Media
- (b) Buying Access etc

The role of computers in Education computers is generally helpful for educational activity which requires significant interaction for that instructional software should be highly interactive. Interactive learning environments are called Intelligent Testing System. Because of their interactive capability computers provide individualized and self-paced learning. SW may be customized to meet the specific requirements of the individuals depending upon their diverse background and abilities. The use of word Excel, Access,

PowerPoint, animation, graphics can be utilized to enhance the learning of content. Computers are good for explaining complex processes. Computer-aided learning is not a replacement technology but a complementary tool. Computers are useful for teaching, problem solving and decision making skills.

UGC has also initiated the process of computerization of University and College libraries providing internet connectivity and now through UGC-INFONET which is planning to provide those facilities like E-access to journals, CAL and E-governance to become reality. Electronic journal may be defined as any journal, magazine, e-zine, Webzine, news letter or type of electronic serial publication which is available over the internet and can be assessed using different technologies such as World Wide Web (WWW).

From the year 1980 Gopher, ftp, telnet, e-mail or listserv a few publishers namely Elsevier, Academic, Springer etc had offered access to their on-line journals free of cost.

Use of Emerging Learning Technologies (ELT)

We may have heard the names of following terms without understanding. Here are few ELT which are in use:

Blogging: A blog (a blend of the term web log) is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most blogs are interactive, allowing visitors to leave comments. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art photographs, videos, music and audio.

Integrated Learning Modules:- Availability of open source software has enabled development of content management system and learning management system such as a Module. Integrated Learning Module (ILM) is thematically focused classes, delivered primarily over Internet. The course content is integrated and comprehensive creating a unique perspective on course themes without the potentially repetitive requirements of separate stand-alone courses. Content and language integrated learning is an approach for learning content through an additional language (foreign or second language) thus teaching both the subject and the language.

A podcast A podcast (or non-streamed web cast) is a series of media files (either audio or video) that are released episodically and often downloaded through web syndication. The mode of delivery differentiates podcasting from other means of accessing media files over the Internet, such as direct download, or streamed web casting. A list of all the audio or video files currently associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software known as a pod catcher that can access this web feed, check it for updates, and download any new files in the series.

Wikis:- Ebers bach et al (2006) note that the following basic features are common in wikis:-

Editing: - Most of the wikis use the same basic page editing function such as Text editing and image, table list hyperlink and file insertion.

Links: - Each article can be linked to other articles and thus form a new network structure.

History: - A function which saves all previous version or modifications of any single page. It allows tracking of the editing processes of an article since all changes have been documented.

Recent changes: - The features can provide a current overview of a certain number of recent changes to wiki pages or all changes with in a predefined time period.

Search function: - Most wikis also offer a classic full text or title search for wiki pages.

A well known wiki is wikipedia ([http:// www. Wikipedia.org](http://www.Wikipedia.org)) online collaborative encyclopedias where anybody can edit update the site content as they see fit. The homepage of wikipedia can be accessed easily on browsing the website.

Enhancement for browsers: Web browsers are adding functionality for their uses. Del.icio.us is a programme which helps you to favorite online and then access in another computer instead of a dedicated computer. Thus these are all additional plug ins that add functionality to the browser.

Now it is an information technological era. The students are willing to learn new technologies like mobile phones, i-pod, i-phone, computer and internet. This is an era of technological creativity. To keep pace with latest trends one should make use of electronic technology in teaching learning processes. The recent technology of our world is all pervasive and omnipresent and is developing at a higher speed. Let us encourage the use of ICT in teaching-learning processes in our educational institutions.

Now U-Learning (ubiquitous) is making another leap-frog progress emerging through the concept of ubiquitous computing. After the use of computer in education the use of e-learning and mobile learning has made a transformative progress in the field of education. U-learning means every where, every time, every content learning (the, internet etc). Various devices retrieve the information in appropriate format (PDA, cell-phone lap top or any other technological gadgets). U- Learning consists of two components e-learning and m-learning. E-learning includes a wide range of application and processes including computer based learning, web-based learning, virtual class room, digital content. Delivery of content through e- learning is via all electronic media including internet, intranet, extranet, CD-ROM, interactive TV audio-videotape.

M- Learning is mobile learning environment and is a sub-set of e-learning through mobile computational devices, palms, windows etc.

The ICT in India advancing very rapidly from single channel transmission in 1962 to about hundred channels. The use of satellite Instructional Television Experiment (SITE) in 1974-75 has reached country wide classroom (CWCR). Gyan Darshan, vyas higher education channel, Eklavaya Technological channel and world wide internet communication are providing interactive multi-media, on line learning's. IGNOU is creating a cooperative radio network known as Gyan-Vani all over the country so that every one desirous of learning gets the benefit of it.

EduSat's technology has an-in-built-mechanism for many of the existing inter related problem felt during teleconferencing. Time will not be a problem any more with the off line access to the tele lectures. Through these interactive participation it-reaches the unreachable in the remotest corner and to far flung areas.

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