DIGITAL TOOLS FOR EFFECTIVE LEARNING

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Abstract:- *The main aim of this research paper is to study about the Digital education tools. Digital tools in the classroom can create a more interesting, interactive environment for the learners. Digital media offers interactive audio-visual that allows rendering information to students via animation software and PowerPoint presentation in an interactive manner. Visual effects have made learning more interesting for students. Digital technologies play a vital role in education with the help of e-books where we do not need to visit library and borrow books. With e-books, we can just transfer it to our mobile phones and access anytime and study. So many digital teaching devices are available to educators. It is the educators' responsibility to compete with the quality of video games and visual media in order to hook students into great learning. Because of the development of new technologies such as smart phones, highly mobile tablets, notebooks, the educators' must ready to use the new medium in their teaching process. The educators must have the knowledge about the new digital medium as well as its functionality. Information and communication technologies allow learning anywhere, anytime, not just in one particular classroom for three hours a day. Three-dimensional animation plays a very important role in mobile learning, e-learning and Web learning. Computer-based tutorials offer visual learning benefits through animation video, not typically offered by any other traditional means.*

Key Words: *Digital education tools, Digital media, Interactive audio-visual, smart phones, highly mobile tablets, notebooks, mobile learning, e-learning and Web learning, etc.*

1 INTRODUCTION

Smart Phones, tablets, laptops, Personal Digital Assistants and Portable DVD players can be used in teaching and learning process. Digital devices helps the learner to learn according to their own pace and environment [1]. Due to the online education rapid development, internet connection can be utilized in any handheld devices for learning. Mobile assisted language learning is a new concept in learning new language. Now many Universities are offering online courses to reach the unreached [2]. These handheld devices are used as a main tool in online certification and online courses. Mobile devices changes the student and teacher roles in learning. Students can develop, deliver, discuss, interact and evaluate with the help of mobile devices. Audio based learning contents, video based learning contents, and internet based web contents, word files, flash files, and portable document files can be downloaded in a mobile device for learning [3]. CBTs can be a good alternative to printed learning materials because rich media, including videos and animations, can easily be embedded to enhance the learning to a wide audience at a low cost. CBTs offer user- friendly environment for satisfying continuing education requirements. Instead of restricting students to attending regular courses, students are able to acquire knowledge and job skills through methods that are much more beneficial to individual learning preferences [4]

2 REVIEW OF THE RESEARCH

In today's rapidly changing globalization scenario and technological developments, radical changes in learning process and strategy are the need of the hour. A classroom with digital visualization and explanations will save the lecturer's time of preparation and effort in communicating the subject matters [5]. The guess-visualization ability of learners differs widely due to their visual perception, background, community, heredity, visual skills, aesthetic ability, creativity, etc. Digital devices basically and primarily act as a lecturer's aid to stimulate the learner's interest. There is a wide variety of audio-visual aids a lecturer can use in the classroom. The chalkboard, PowerPoint, models, projectors, overhead projectors, tablets, short films are some of them. A visual aid has to be wisely chosen to suit the class most appropriately. The advantages of digital technologies are convenient, comprehensible, wide access of digital resources, sharing, and publishing of plenty of information (more than 2 million free books available for download as of August 2009), easy translation, convenient for visually impaired (text to speech software), accurate and up-to-date information, cheaper and easier for publication, maintenance etc., [6].

3 VIRTUAL LABORATORIES

Virtual reality is revolutionizing the educational system in India. National mission on education through ICT by Human resources department, supports the virtual laboratory set ups in Universities [7]. The main objective of this national mission project is multi-faceted – to provide high quality personalized and interactive subject modules via the intranet, internet, satellite communication to all the researchers and learners in universities in an anytime, anywhere online mode. Virtual labs are the solution to the lack of access to costly and critical instruments for the purpose of technical practical studies. In this method, laboratory equipment can be easily accessed online through a user-friendly 3-D animated graphical interface to conduct experiments similar to those executed in laboratories. By including the virtual laboratories with a mixer of web based resources with various tools such as video clips, 3-D animations, demonstrations, simulators, etc. Educators can interact and conduct researches. For example, Amrita's virtual labs (VALUE-Virtual and Accessible Laboratories for Universalizing Education), MIT's, and CAMBRIDEGE's Virtual labs iLabs have rich 3-D animation contents to interact among the students. These are powerful technological interventions that will allow all educational institutions and learners equal access to real life laboratory experimentation [8].

Advanced Communication Technology

Nunamaker et al. (1991) discussed the communication technology hierarchy through a diagram

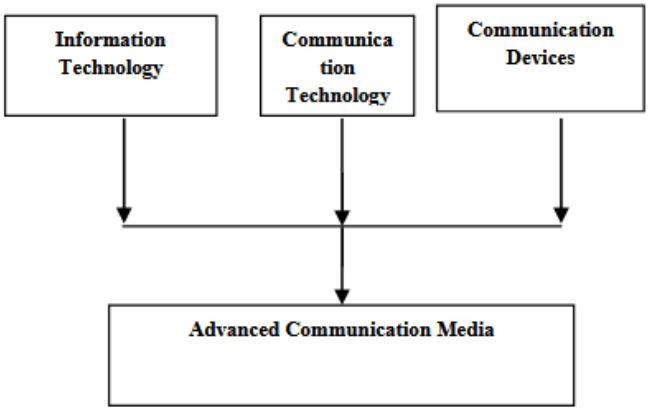

Figure 1: Advanced Communication Media

Advanced communication technology can generally be considered a subset of the general term "communication technology".

Successful Learning Communication

Several factors contribute towards success of learning communication at each level. At the level of transmission, factors such as media distribution, media capacity and media accessibility used in message transmission are crucial [9]. At the level of semantics, the code and style used in message construction are important. At the effectiveness stage, learners' behavior, culture, attitude, tradition and inner psychology applied in learning are important. Since the invention of the printing press and in more recent times of a multitude of communication forms including telegraph, telephone, telex, camera, film, phonograph, radio, TV, satellites, computers, the world has been transformed. The presence of mass media in our daily life has been one of the major features of the information and communication technology revolution [10]

4 COMMUNICATION DEVICES AND MEDIUM

Printing:

The invention of printing machine by Johannes Guttenberg in 1450 revolutionized the world. The invention made possible the spread of education in schools and universities. With the growing sophistication in the techniques of printing, communication with the literate masses by educators became a simple matter.

Radio:

Currently, India has 215 radio stations and 337 transmitters with the coverage of 99.3% population. All India Radio (AIR) serves as broadcasting centers for IGNOU courses. It is also useful for counseling the students and telecasting audio-based learning materials

Television:

The first exclusive national education TV channel GYAN DARSHAN was launched in January 2000. This channel is accessible to 40 million viewers through cable TV across the country. Channel KISAN is launched in 2004 for the Indira Gandhi National Open University agricultural courses. It is very useful for online chatting, virtual class room and meeting.

E-Learning:

E-learning denotes all the forms of electronically supported learning. It includes CBT (computer-based training), CBL (computer-based learning), IBT (Internet- based training), WBT (Web-based training), ORBL (online resource-based learning), NCL (network collaborative learning) and CSCL (computer-supported collaborative learning).

LMS/LCMS

Learning management system is software used for managing the training program. It is also very useful for distributing the course contents over the Internet. LCMS learning content management system is a software for authoring and editing the course content. Macromedia director is also very useful in authoring.

M-Learning:

M-learning denotes all the forms of portable technologies like handheld computers, MP3 players, iPods, DVD players, talking books, PDA (personal digital assistant), mobile phones, projector phones, handheld game console and smart phones. Mobile learning includes authoring, content development and delivering.

Web 2.0 tools, technologies approaches include social software such as wikis, blogs, video casts, games, simulations, social networks and virtual worlds. We now live in a Web 2.0 world, as first defined by Tim O'Reily in 2004. Don and Anthony have explained the Web 2.0 tools and technologies as "weapons of mass collaboration" in their book "How mass collaboration changes everything". A good learning tool has to ensure a very important factor called learner motivation.. So many researches are available in the field of motivation and learning process. The Web 2.0 technology addresses many aspects of motivation directly, including learner empowerment, choice, expression, novelty collaboration and interactivity. It satisfies the motivational principles. Because of the development of social media like Flickr, Myspace and YouTube, animation is becoming a very important factor in the environment.

Multimedia for Computer Based Programs

In education, multimedia is used for computer-based training programs CBT lets the user go through a series of computer-generated learning material, explanations about a particular topic and associated illustrations in various information formats. Some components of multimedia, such as documents containing text and graphics and video embodied with audio, are common. Digital media makes the content even more interesting; in digital format, audio, video and animation can be attached in documents. Music and audio contains textual annotations as well.

5 CONCLISION

The new digital technologies have fundamentally changed the way of teaching and learning. Digital devices have produced significant transformations in the educational field. Mobile devices decrease limitation of learning location. They should be incorporated in the educational industry and curriculum. Because of developments in digital technologies, it is now possible to combine multiple media into single education applications. Digital media applications on websites and instructional materials may incorporate text, audio, pictures, graphics, animations, video and virtual simulations greatly influencing the learning process. The four dimensions—flexibility, interactivity, connectivity and integration of multiple media—distinguish digital ICT from previous information technologies. Because of these developments, researchers are conducting investigations and experiments to integrate digital ICTs into the curricula. Thus, digital tools enhance the communication process in the teaching- learning process.

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