

What changes did Technology bring to Education?

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ABSTRACT

When technology is used for teaching-learning in education, it is called educational technology. Technology has facilitated the transfer of knowledge on a large scale. Advances in computer technology and telecommunications etc., have brought revolutionary development in the education sector. Now a days all the information of the world can be obtained through internet. In the age of technology, information is being shared in a wide range. Learning is an ongoing process for today's global economy, both in organizations and in higher education institutions. According to Brown and Adler 2008, innovations in ICT help in developing a global competitive environment by connecting every corner of the earth hence there is a need for a well-educated work force with competitive skills. Thus, for a rapidly changing world, ICT facilitates continuous learning and creation of new ideas and skills. Higher education is an essential element for increasing economic prosperity and improving the quality of life. Just as, it is not possible to imagine living life without electricity in today's life, in the same way, it is not possible to imagine teaching and learning without educational technology. Keywords : Education Technology, Computer, Laptop, Tablet, Mobile, Internet, Teleconference

INTRODUCTION

The term educational technologist is mainly used in the United States as a synonym for learning technologist and is used in the UK as well as Canada.

According to the Association for Educational Communications and Technology (AECT), educational technology is "the study and ethical practice of improving learning and performance by creating, using and managing appropriate technological processes and resources". It defined instructional technology as "the theory and practice of the design, development, use, management and evaluation of processes and resources for learning".

Educational technology is the process of integrating technology into education in a positive way that fosters a more diverse learning environment and a

way for students to learn how to use technology as well as their normal assignments.

There are many different aspects used to describe the intellectual and technological development of educational technology:

Educational technology as the theory and practice of educational approaches to learning, educational technology as technical tools and media, educational technology for learning management systems (LMS), [such as tools for student and curriculum management, and education management information systems (EMIS)], educational technology as back-office management, [such as training management systems for logistics and budget management, and learning record stores (LRS) for learning data collection and analysis], educational technology itself an academic discipline as in: Such courses are called "Computer Studies" or "Information and

Communication Technology (ICT)". An educational technologist is trained in the field of educational technology. Educational technologists attempt to analyze, design, develop, implement and evaluate process and tools to enhance learning.

Historical view of Technology in Education

With the help of archaeologists, it is known that abacus was used for education in ancient times. After this, for almost a millennium, the Slate and Blackboard were used for writing. After that books and paper etc. were used. Then in the early twentieth century mimeographs, Gestetner stencil devices were used for short copying. The use of media for educational purposes was introduced in the first decade of the twentieth century through educational film and Sidney Presey's Mechanical Learning Machines (1920). This was followed by the use of overhead projectors in 1945. Slide projectors found widespread use in educational institutional settings during the 1950s. Then in the 1960s, Stanford University psychologist Professor Peptic Supps and Richard C. Atkinson used computers in California to teach arithmetic and spelling via teletype to elementary school students. Online education began at the University of Illinois in 1960, although Internet access was not available at that time, but many students were able to share information with each other by connecting to computer terminals. According to Wikipedia the first online courses were introduced in 1986 by the Electronic University Network under the name DOS and Commodore for 64 computers. Introduced online courses through interactive learning through computer assisted learning. As of 2009, approximately 5.5 million students had attended classes online. After this, the number of students studying through online classes has been increasing continuously since then. Through online education system, students sitting far away get to learn from good teachers. Along with its growth, the students have developed their learning and teaching process very fast on all the platforms of web2.

Technology with Web 2.0

Modern electronic educational technology is an important part of today's era. Education by Educational Technology includes e-learning, instructional technology, information and communication technology (ICT), edtech, learning technology, multimedia learning, technology-enhanced learning (TEL), computer-based instruction (CBI), computer managed instruction, computer Huh, based training (CBT), computer-assisted instruction or computer-assisted instruction (CAI), Internet-based training (IBT), flexible learning, web-based training (WBT), online learning, digital educational collaboration, distributed learning, computer-mediated communication, cyber-learning, multi-modal instruction, virtual learning, personalized learning environments, networked learning, virtual learning environments (VLEs) (also known as learning platforms), m-learning, omnibus learning, digital learning and Web 2.0 tools.

With regard to the Internet and the era of interactive and collaborative technology, Taylor (2001; Fojdar and Kumar ; 2007) distinguished between the 1990's fourth generation by 'flexible learning' distance learning model, which included interactive multimedia, Internet-based online communication and the "intelligent flexible learning model" of the fifth generation. Today's learners are exposed to a technology rich environment to make learning experiences stimulating and engaging. Such young learners are called digital natives (Prensky, 2001) or e-Learners because they are influenced by recent highly interactive technology i.e. iPads, iPhones, WiFi game consoles and WiFi Internet access etc. Research on the implementation of information communication technologies (ICTs) in the classroom has shifted radically over the past decade as Web 2.0 tools and applications have become more generally available. A preliminary investigation into the frequency and impact of ICT use in the classroom (Cuban, 2001) has provided a way of exploring teacher's perceptions of its contribution to classroom

learning and examining how teachers use knowledge. build as they integrate ICT into classroom practice (Deeney, Ruthven, & Brindley, 2006; Mishra and Kohler, 2006; Geisel & Meijers, 2005). It has been well documented that Web 2.0 applications, [Examples of Web 2.0 features include social networking sites or social media sites like Facebook, blogs, wikis, folksonomies ("tagging" keywords on websites and links), video sharing sites like YouTube, image sharing sites like Flickr, hosted services, Web applications (apps), collaborative consumption platforms, and mashup applications etc.], can enable students to create content on the web and develop social networks through multiple formats of representation. To interact with peer group or to interact or collaborate with each other, web is the launched umbrella. Is Web 2.0, A typical Internet application in the 21st century originated by Tim O'Reilly (2005). Facilitating more interaction rather than just broadcasting. With Web 2.0, information is shared "many-to-many" instead of one-to-many. Web 2.0 is now spoken of as read write web instead of read only web because it includes communication, collaboration, content creation and entertainment. Web 2.0 educational values in higher education have also been evaluated and suggested that Web 2.0 technologies not only enhance the ability of college students to communicate with others, but they also afford opportunities used for formal learning in higher education (Brian Alexander, 2006; Franklin & Harmelon, 2007). Web2.0 facilitates knowledge sharing and collaboration with ease of use and speed of deployment and reduces the complexity of teaching concepts at a high level (McLaughlin and Lee, 2007).

Web2.0 is associated with concepts such as communities of practice, syndicated content, learning as a creative activity, peer-to-peer learning and individual learning environments (PLE) and non-formal learning (Bartolome 2008). One of the features of Web 2.0 is the availability of online tools that enable mass participation in social activities. By applying these tools to the teaching and learning

process, a teacher can encourage students to use Web 2.0 technology to foster interaction, collaboration, and encourage learning. Teaching through Web2.0 tools helps students develop motivation, improve participation, social skills, higher-order cognitive skills, and enhance self-directed learning (Redecker et al, 2009). In higher education, Web 2.0 technologies enhance student abilities to communicate socially and provide platforms and opportunities for formal learning (Ebner, Leonhardt, Rohs, and Meyer, 2010; Hemi, Byne and Land, 2009). Higher education institutions are integrating Web 2.0 into learning to stay proactive, competitive, relevant and up-to-date with technological developments. Such institutions are increasing the benefits of Web 2.0 tools by including interactive and collaborative activities among students based on partnership and collaboration (Hicks & Graber, 2010) and social networking (Tian, Yu, Vogel & Kwok, 2011).

Why Technology in Education required?

The education system has changed a lot with the introduction of Latest Educational Technology, Web2.0 technology. Classroom sessions are more student-centered than teacher-centred, classroom activities should be more collaborative rather than individual as Web 2.0 allows sharing Information with lots of users. Today's web has evolved with new tools to boost productivity, the power of publishing and editing. Web 2.0 is neither social media nor limited to writing tools such as wikis and blogs but also includes photo editing, video sharing and hosting. e.t.c. For example Blackboard and Moodle are secure Web2.0 enabled Learning Management Systems (LMS) for school environments.

Social networking sites, online games, video sharing and access to electronic gadgets have become the fashion of the youth. To deal with the students of tomorrow who are digital and highly motivated by information access, Teachers should think creatively. There is a need to integrate tools with research based learning strategies to enhance the traditional learning environment. For example: Wiki is a tool that

teachers are using for cooperative learning, making possible the sharing and drafting of lessons. Parallels Students can create websites, online presentations, images, videos to enhance their knowledge and learning. With these tools there is the possibility that teachers or students can invite subject matter experts from both inside and outside the school to review their work. Integration of such technology into the classroom not only helps students acquire the social and thinking skills that are essential for learning but also helps them to improve on the skills they already have (Andersen, 2009; Harris & Ree, 2009; Williams & Chin 2008; Kemkar, Barron & Harms, 2007; Borsheim, Merritt & Reid, 2009).

Web 2.0 enabled services help teacher educators by creating a paperless environment as information can be stored and retrieved in a digital form as compared to a bunch of papers. Teachers can give online assignments to students and even students can submit it in the same way. It is also useful for researchers, as they can discuss their topic and improve collaboratively through supervisor blogs and wikis. Web 2.0 technology is a faster mode of communication as students can receive feedback and suggestions in real-time.

In today's era, a large part of the society is getting education through video conferencing. Through this, the student is getting education from the teacher with great comfort sitting at home and like a classroom teaching, he can also calm his curiosity by asking the teacher.

Web 2.0

Web 2.0 refers to the second generation of web based technologies including online communities, wikis, forums, blogs, chat rooms, etc. that combine to form the basis of online social networking. The term Web 2.0 was first used in a conference between O'Reilly and Media Live International (O'Reilly, 2005) and the fundamentals and principles that underpinning the entire web and its services after the dotcom bubble. Following this convention is the

famous "meme-map" which shows many ideas around Web 2.0 core.

Web 2.0 technologies are a newer version of the Internet, it is not software or programs. People think that Web 2.0 is a live, real time, data base, content editor that allows interactive communities. Internet is now a rich and fascinating world, which includes all types of communication like video, music, animation with a layer of interaction which allows internet to be non linear and non temporal and prove a new way of communication almost on daily basis. The Web of Tomorrow offers almost limitless opportunities for learning, understanding, sustaining and studying, personal growth, exploration, enthusiasm and creativity that books and videos will never achieve. Web 2.0 refers to a range of technologies that allow users within web-based communities to both access and contribute to website content and web enabled events. Applications include, but are not limited to, blogs, wikis, podcasts, online video sharing (eg, YouTube), and online social networking tools (eg, Facebook). Active participation, community-based governance, hyper connectivity and collaboration are key features of Web 2.0 through which users can share information, knowledge, ideas and opinions (Pratibha; Smita; Gokhale, 2009). The new version of the technology called Web 2.0 where a user can read, write and share his/her contribution. Web 2.0 is software upgraded to the World Wide Web. Web2.0 is presented as the process of delegating control over applications to users, enabling them in this process, perhaps even to change the structure of information systems itself (O'Reilly, 2005).

According to Wikipedia (December 2006) "Web 2.0 is typically associated with web development and web design that facilitates interactive information sharing, interoperability, user-centered design, and collaboration on the World Wide Web. The compact definition of Web 2.0 as given by O'Reilly (2005): Web 2.0 is network as a platform, which is spread across all connected devices; Web 2.0 applications are those that make the most of the platform's intrinsic

benefits: delivering software as a continuously-updated service that gets better as more and more people use it, from multiple sources, including individual users. Web 2.0 includes many applications, including Wiki (Wikipedia), Instant Messenger (MSN, Yahoo Messenger), discussion forums, RSS (automatic syndication), social networking websites (Facebook), Flickr, del.icio.us, YouTube, Micro-Blogging services (Twitter) etc., are very common.

Web-log (Blog)

The term blog, abbreviated to weblog, was coined by Jörn Barger in 1997. It is a type of personal website that contains regular entries in the form of comments, images, opinion paragraphs, information, personal posts arranged chronologically (Andresen, 2007). An example of the use of blogs in education is the use of question blogging, a type of blog that answers questions collaboratively between teachers and students.

Wiki

A "wiki" is a collection of web pages designed to enable anyone to contribute to or modify content using simplified mark-up language. Basically wiki is a Hawaiian term which means "quick" or "super fast". Wikipedia is a commonly used wiki and a type of encyclopedia that users can modify. Wikipedia is a huge information source with over 3 million articles. Wikis can be used in education to facilitate student-driven knowledge systems (Raman, Ryan, & Olfman, 2005).

Social Networking Services

A system allows users to create a social network between them who share their common interests, activities and real life connections. Users can customize their personal profiles and connect with their family, friends and other colleagues (Lenhart & Madden, 2007). The most popular social networking sites are: Facebook, Twitter, LinkedIn and MySpace

reportedly have over 30 million users (Kennedy et al., 2007).

Podcast

A podcast is a digital audio-video file that can be downloaded for free, allowing users to subscribe to feeds "New Files (Walton, Childs, & Blenkinsop, 2005). Based on the iPod, the term is made up of two words "broadcast" and "pod". Podcasting includes editing and sequencing of recorded lectures (e.g. Lee & Chang, 2007), and simple uploading of raw Audio recording on web site available for students. Podcasting is commonly used in higher education as it has provision for uploading full lectures or brief explanations of difficult concepts, explanation of assessment requirements, suggestions for further reading or provision of feedback on assessment tasks.

Social networking sites

Social network is a group of persons of different religion and region but for the same purpose. It is a web based service that allows a user to set up and create a personal or public profile to keep in touch with their family, friends and other users with whom they share their common interests. (Lenhart & Madden, 2007). Therefore a social network can be established and discovered. LinkedIn, Facebook and Twitter are the three most visited social networking sites on the web and attract more than 100 million and 30 million users, respectively (Kennedy et al., 2007).

Social bookmarking

Social bookmarking is organizing bookmarks on webpages to public websites and tagging them with keywords (Lomas, 2005). According to Wikipedia, "Social bookmarking is a method for Internet users to store, organize, find, and manage bookmarks of web pages on the Internet, usually in the form of tags" (Wikipedia, 2010). Tagging is an important aspect and is now known as Lokonomy, which is the process by which multiple users add data in the form of keywords to shared content. Folksonomy is the

process of classifying information in a non-hierarchical manner (Baird and Fisher, 2005). Through social bookmarking, users save a link that they can retrieve or share later. These bookmarks can be used publicly or individually, depending on what type of information is needed. Tag Cloud is also one of the alternatives to social bookmarking which refers to a group of tags. Such a group informs about the frequency of particular tags used and helps to find users of similar interest (Andresen, 2007). del.icio.us, furl, cannotea and CiteULike are some well-known social bookmarkers. Teachers and learners can use bookmark to the various resources so that it is easy to build up reading lists and resource lists.

Conclusion

Thus we see that teaching learning has become very easy through educational technology. In today's time, a lot of information is available on the Internet. There are many search engines through which we can get information about any subject after searching. Educational technology is very helpful in the time of any epidemic disease to continue the teaching work continuously through online education. Therefore, it can be said that without education technology, teaching work would not be possible in today's time and in the coming times.

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