A CRITICAL STUDY OF EFFECT OF WEB-BASED SOFTWARE TOOLS IN FINDING AND SHARING DIGITAL RESOURCES - A LITERATURE REVIEW

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ABSTRACT

The purpose of this paper is to review the effect of web-based software tools for finding and sharing digital resources. A positive correlation between learning and studying through online tools has been found in recent researches. In traditional classroom, searching resources are limited to the library and sharing of resources is limited to the walls of classroom, but with the advent of internet and electronic media it is possible to search and share resources beyond four walls. The objective of the study is to review the effect of web-based tools and enlist web-based tools for sharing and finding digital resources using web 2.0 technologies. Open Educational Resources were used to study the effect of Web 2.0 tools for finding and sharing digital resources. From this study, it is found that, Web 2.0 tools are versatile and effective, because of the features like, user centre, user control & communication, and making teaching learning process learner centric.

Keywords: Web-Based Software Tools, Digital Resources, Sharing, Finding, Web 2.0, Social Software.

INTRODUCTION

As cited in (Anderson P., 2007, p. 14), Tim Berners-Lee, observe, "I have always imagined the information space as something to which everyone has immediate and intuitive access, and not just to browse, but to create" We live in an era of wired, globalized world in which sharing, communication, finding and collaboration are possible 24 hours a day and 7 days a week because of the advancement in technologies. Similarly learners can access, share and find digital resources 24/7, by using web 2.0 tools at the click of the mouse. Advancement in technologies is made at tremendous rate because of the shrinking of half-life period of knowledge and distances has reduced, making world a global village. In 1965, Gordon Moore predicted that, the number of transistors on a chip will double about every two years, hence there is advancement in hardware, and software with the same pace, similarly the web is changing too (Moore's Law). It has morphed from static HTML pages where readers could find and copy information to interactive services, where visitors can create, share, find, collaborate and post information (Solomon & Schrum, 2007, p. 8).

Objectives of the Study

The problem investigated in this research related with studying the effect of web-based software tools in finding and sharing digital resources. Its objectives were to:

- Review the Effect of Web 2.0 tools in finding and sharing the digital resources.
- Study the Effect of Web 2.0 tools in collaborating learning, through literature review.
- Study the Effect of Web 2.0 tools in communication in an online learning, through literature review.
- Identify Web 2.0 tools for finding and sharing digital resources.

Methods adopted

The literature is reviewed by using data base of open educational resources and websites. The open educational research source Directory of Open Access Journals (DOAJ) is searched for finding Abstracts and Journals to study effect of Web 2.0 tools for finding and sharing digital resources. By using the following combinations of key words "Web 2.0 tools for sharing", "Web 2.0 tools for searching" "Effectiveness and Web2.0

tools", "Educational use of Web 2.0 tools", "Blogs and effective learning", "Social Networking and Collaboration", and "Wikis and learning", a data base is analysed to study the effect of Web 2.0 tools. In these search more than 100 studies has been identified, which supports effect of Web2.0 tools towards learning. In findings, few researches shows ineffectiveness of Web 2.0 tools, because of factors, such as use of only informal sharing and communication, insecurity in social networking and reluctant of institution to use Web 2.0 tools. Beside Journals other useful database such as Reference Books, Reference Sources, and Reports, Websites and Handbooks on Research, are also reviewed for the study of Web 2.0 tools.

Literature review from Books, Journals, Reports and Websites

What is Web 2.0?

The World Wide Web provides digital resources, by helping learners to search, share and collaborate learning, which has surpassed the reach of the traditional classroom. In Kahn study (as cited in (Wisher & Olson, 2002, p. 2)), Web makes possible learning experiences that are open, flexible and distributed, providing opportunities for engaging, interactive and efficient instruction. In Dills and Romiszowsk study (as cited in (Wisher & Olson, 2002, p. 2)), more than 40 instructional paradigms seeking to advance and improve the online learning experience beyond the traditional classroom. The concept of "Web 2.0" became popular during a conference brainstorming session between O' Reilly and Media Live International. As cited in (O'Reilly, 2005, p. 1), Dale Dougherty observed that "far from having "crashed", the web was more important than ever, with exciting new applications and sites popping up with surprising regularity". Web 2.0 is defined as the, advanced Internet technology and applications including blogs, wikis, RSS (Really Simple Syndication) and social bookmarking. The two major components of Web 2.0 are the technological advances enabled by Ajax (Asynchronous JavaScript and XML) and other new applications such as RSS and Eclipse and the user empowerment that they support (Web 2.0., 2008).

Web 2.0 and Social Networking Sites (SNS)

A typical Web 2.0 phenomenon is social software. As cited

in (Anderson T., 2008, p. 225), Clay Shirky defines social software as, "software that supports group interaction, the group interaction may be one to many and many to many, examples are E-mail, Listserv, Discussion Forum, Blogs, Second Life and Virtual Classroom. The Social Software uses as a collaborative medium that allows users to communicate, work together, share and publish their ideas and thoughts with high degree of self-organisation (Rollett, Lux, Strohmaier, Dösinger, & Tochtermann, p. 7). In Skiba's study, ((as cited in (Staples, 2010, p. 248)), he observed that, these tools is used to create social network applications and online social networks, are also called as social networking tools and they let users to create selfprofile and connect to others to build and maintain a personal network. The examples of social networking sites (SNS) for collaboration are My Space, Facebook and LinkedIn are few to name from the huge list of Social Networking Sites (SNS). As cited in (Staples, 2010, p. 249), Boyd and Ellison observe SNS as "web-based services that allow individuals to (i) construct a public or semi-public profile within a bounded system, (ii) articulate a list of other users with whom they share a connection, and (iii) view and traverse their list of connections and those made by others within the system". Thus in SNS learners share and collaborate with a list of people who are in the list of offline as well as online network; they are also creating a profile within a bounded system.

Web 3.0

As cited in (Murugesan, 2010, pp. 3-4)), John Markoff observed in an article published in The New York Times, that the next phase in the web's evolution, is Web 3.0. The Web 3.0 is also called Semantic Web; it is the third generation of Web technologies and services that emphasized a machine-facilitated understanding of information on the Web in order to facilitate information aggregation and to offer a more productive and intuitive user experience.

Web X.0 or Web 4.0

"Web X.0" is the next phase evolution, in Web X.0 higher level intelligence, Web X.0 is also known as "Intelligent Web" or "Smart Web". In a Web X.0 application, a software agent(s) roaming on the internet or simply residing on the computer could reason and communicate with other such

agents and systems and work collaboratively to accomplish things on the behalf of system administrator (Murugesan, 2010, p. 4).

Learn 2.0

Before the advent of modern communication technologies i.e., Learning 1.0, the teacher holds the dominant position in the teaching learning process, and, while there may be dialog between teacher and learner, the teacher is the authoritative source. Thus the environment is constrained to space and time and it is not learner centred. In the learning 2.0 paradigm, the learner centric model is evolved and constraint on space and time has been disappearing entirely. And collaboration, sharing and communication are becoming more prevalent between learner and teacher and also between learner and learner (Cobb, n.d., pp. 11-22).

Tools for finding and sharing digital resources

In their book, (E-learning Tools and technologies, 2003), William and Katherine Horton, classified online tools based on accessing, offering and creating e learning. It requires tools that are reliable, simple to operate, and capable of displaying content precisely as intended. Accessing digital resources requires several types of tools and Web browser is the most basic and important tool, which helps in finding, navigating, displaying, and playing digital resources. Digital resources are offered by tools such as Web Servers, Collaborating tools, Learning Management System, Content Management System and Virtual Classroom Systems. Digital Resources are authored with course authoring tools and web site authoring tools (Horton & Horton, 2003, pp. 97-278). In this research classification of software is made according to least Web 2.0 features available to most Web 2.0 features available in the tools. Some of the features of Web 2.0 tools are (i) user-centered and user control of content features, (ii) the ability to interconnect applications using technologies like Application Program Interfaces (API) and XML-based Web services, and (iii) the feature to form communities and collaborate. (Cobb, n.d., p. 27). Following are the list of tools for searching and sharing digital resources. In, appendix detailed list of tools is given, for Searching, Sharing digital resources with web addresses.

Tools for communication and sharing digital resources Podcasting

Podcasting might be the least "Web 2.0" tools, because it used more as a broadcast medium than for production medium. As cited in (Mishra, S., Naidu, S., Bates, T., Baggaley, J., Khan, B., McCarty, S., et al. (2009)), Salmon, observe podcasts as digital media files that play audio and or/ audio vision (also known as Vodcasts) that are made available from a website, can be opened and / or downloaded and played on a computer, or downloaded from a website to be played on a small portable player designed to play the sound and / or vision. Collaborative learning is the most effective learning because here learners interact, learn by doing and share their experiences & knowledge, similarly learners who are visual learners can benefitted from Vodcast and dyslexic can benefit from podcast instead learning through reading. Podcast can be used for taking interview, recording activities & conference sessions and then share that information broadly, thus learners learn by doing rather simply just hearing (Cobb, n.d., pp. 35-38).

Blogs

A blog is a personal website that contains content organised like a journal or a diary. In a blog most recent entry is posted at the top and they are displayed in reverse chronological order. The earliest blogs were Userland and LiveJournal, and the most popular blogs are Bloggers and Wordpress, these blogs are user friendly and easy to create. Blogs are connected and linked with each other to form network, which is commonly called as 'blogoshpere'. Really Simple Syndication (RSS) is used to read and subscribe blogs, RSS aggregate blog summaries produced by blog software (Mishra, et al., 2009, p. 88). Blogs can help learners to collaborate learning and research, and the expression of diverse views, perspectives and opinions. It also helps learners in developing group projects by co-producing content (e.g., collaborative writing projects for teachers and students, group e-portfolios, and group journals) (Staples, 2010, p. 41). Blogs foster the development of a learning community since it is linked and connected to form a network among the learners. Learners can share opinion with each other, and support with each other with

commentary and answers to questions, similarly it also give learners an opportunity to articulate learning and authority for creating digital resources in learning. Blogs develops skills in writing and research, and it also supports digital literacy as the learners learns to critically assess and evaluate various online resources (Mishra, et al., 2009, p. 89).

Video on demand

Website providing services for online video are user friendly and provides tool to edit, produced, and upload videos on servers. The videos produced can be disseminated either through streaming or progressive download and they can be embedded into blogs, social networking sites (SNS) and personal websites. The use of video on demand can be made by learners and educators by recording and publishing conference sessions, interviewing experts and capturing stories to bring learning objectives to life (Cobb, n.d., pp. 44-47). Online video services are YouTube, TeacherTube, Vimeo, BlipTv and Yahoo Video.

Slide and Digital images Sharing Tools

Slide and photo sharing websites are used for sharing presentation and images online. One such website is SlideShare, where users can view as well as download presentation; they can also comment on them, mark them as a favourite and easily share them. Digital images can be shared by using services Flickr; one can post images from learning events, create a stock of images that one might use in multiple online education experiences, or encourage learners to share images that support learning activities (Cobb, n.d., pp. 48-52).

Virtual Reality

Virtual Reality 2.0 (VR 2.0) is a new generation of online environment where users can communicate, share and find digital resources and interact with each other using avatars, and can define and generate its content. VR 2.0 is based on Web 2.0 concepts such as mashups of different applications and tools, the concepts of social networking and user generated content and the idea that the Web may replace the desktop as the main operating system and become the central entity for different applications. VR 2.0 has many uses and institutions are using Second Life as a platform for their own activities. Harvard University was one of the first to have its presence in Second Life and

conducted a seminar for Law students in this environment (Moskaliuk, Kimmerle, & Cress, 2010, pp. 574-577). As cited in (Moskaliuk, Kimmerle, & Cress, 2010, p. 578), Scardamalia and Bereiter observe, that situation with a scientific community in which a group of scientists generates new knowledge and then shares it with the rest of the community that should also be the ideal for other forms of learning in schools, higher education and job training. The second life enables learners to meet with each other in virtual environment at the same time and they can access, find, collaborate, share and interact with each other, in a similar way as that in a real conference or seminar, similarly there is even voice, and text chat is possible (Cobb, n.d., p. 56).

Social Bookmarking

To enhance and support learning activities Social Bookmarking is used in education institutions. In social bookmarking it is possible to share and find bookmarks with other people. A learner can bookmark various digital resources for referring in future and also share with their colearners. For each bookmarked item, it is possible to see how many other users have bookmarked the same item and also visit the bookmarks of each of these users to find related items of interest.

Wikis

A Wiki is a user friendly and user editable website that allows the user to easily add, remove, edit and change content with appropriate referencing in a similar way as a blackboard in a classroom (Dorn, 2010, p. 308). Wikis are originated in Hawaii, "Wiki" means fast and it is ackronym of "What I Know Is" (Wikipedia, 2010), suggesting rapidly Web environments can be deployed using the technology. Web 2.0 technologies are widely applied in Wikis, which are open, dynamic websites with collaboratively constructed knowledge, information, and resources, which are freely available to any Internet user. There are large numbers of tools available for sharing and finding digital resources and also for developing collaborative knowledge, for example Wikipedia, Wikitionary, Wikisource, Wikimedia Commons, Wikispecies, Wikinews and Wikiuniversity. Wikis can be used in education to supplement face to face classes by providing information and resources, or it can be integrated as a part of blended courses or as a main

component of an online environment. Wikis may also be used as an alternative to course management system (CMS) (e.g., Moodle, Blackboard, etc.) (Mishra, et al., 2009, p. 92 & 93). Wikipedia is an excellent example of the possibilities for collaborative creation of meaningful content through sharing. In wikis users can author, edit, and organize Web content using a standard browser. As cited in (Jančaříková & Jančařík, 2010, p. 129), Simens observe, the connectivists' theory, claims that it is important not only to transfer information and create information resource, but also to create such an environment, which will foster integration of information into students' knowledge networks. This process is supported by the Web 2.0 tools for interaction among students and interaction of student-teacher such as chat, blog, forum and wiki.

Social Networking

Man is a social animal and it has nature to form communities, and communicate with each other, he is satisfied only when he shares and communication with his fellow beings. As cited in (Curran, O'Kane, McGinley, & Kelly, 2010, p. 156), Freeman observe that, social networking is not an exact science and may reasonably be termed as a social catalyst in discovering the method in which problems are solved organisations are run to the degree in which individuals succeed in achieving goals. Social Networking sites (SNS) are having mashups of Web 2.0 tools for finding, sharing and communication of digital resources. The social networking site MySpace, for instance offers a blogging component, and Facebook integrated and enhance its application, thus making different features like, YouTube, Flickr, del.icio.us, and SlideShare to integrate into uniform Facebook environment (Cobb, n.d., p. 64 & 65). Facebook and MySpace not only helps in building community and sharing resources around education events, but it also helps in accessing and managing digital resources for learning through a Personal Learning Environment.

Tools for finding digital resources

Digital Resources can be found by the learners' easily and efficiently because of the mashups of different services and applications of Web 2.0 features available in Websites. Similarly tagging also helps in finding digital resources in an

online learning. Data base for digital resources are found with the help of Search Engines like, Google, Bing, Yahoo, most of these search engines use Web 2.0 technology, which increases search result relevance. In most of the social networking sites (SNS) and now on search engines, Mashups and tagging (which are modular functionality of Web 2.0) are used for having different services and features added on one platform. Following are some of the tools for finding digital resources:

Google Directory

The Google directory is collection of links arranged into hierarchical subcategories.

Flickr Storm

Digital images can be search by just entering tag and a list of images in the form of thumbnails is displayed, these images can be downloaded later by adding it into tray. Licensed images are filtered by the "advanced" features including creative commons. (Top 25 Web 2.0 Search Engines for College Students, 2007, p. 1).

Rank Speed

RankSpeed is a tool for finding the best websites and products by doing a sentiment analysis on the Twitter/blogosphere (Search Web 2.0 Tools and Applications, 2010, p. 1).

Rippol Video Intelligent discovery

Videos are discovered using the butterfly effect network, a system of algorithms based on videos liked by the user, this system of algorithm was developed by Rippol Team (Search Web 2.0 Tools and Applications, 2010).

Tinker

Latest events on Social Networking sites (SNS) such as Twitter and Facebook can be searched with the help of Tinker; these events can be created and followed by choosing a keyword (Search Web 2.0 Tools and Applications, 2010).

Lumifi

This search engine is a new way to find, analyze, organize and share information on any topic, from any source (including documents by users). Lumifi read user, highlight terms relevant to user's interest, and discover information one might have missed (Search Web 2.0 Tools and

Applications, 2010).

Space Time

This is unique type of search engines for finding queries and display digital resources in the form 3 dimensional spaces from popular search engines like Google, YouTube, RSS, eBay, Yahoo and Flickr (Search Web 2.0 Tools and Applications, 2010).

Whonu

This is the first semantic Web search engines available, it offers over 300 search sources and a smart interface that contextualizes what is entered in search engines. For example, enter a US ZIP code and whonu presents a set of links to geocode tools including maps, weather maps, and public events in Google calendar (Top 25 Web 2.0 Search Engines for College Students, 2007).

Topix

This website narrows the search of topical web pages to a certain time period in an interactive timeline; it is very helpful for research. Clicking on a particular day produces results ordered reverse chronologically from that day backwards (Top 25 Web 2.0 Search Engines for College Students, 2007).

Omgili

Omgili is a discussion based engine. A list of search term answered by the members to questions results in addition to the standard search, similarly questions can be asked, whose answer may be given with relevant links (Top 25 Web 2.0 Search Engines for College Students, 2007).

Pixcy

This is a visual search engine for pictures or videos selected from several sources including Buzznet, flick, iStockphoto, Fotolia and YouTube, navigation is simple just clicking on any image takes to the source page, a detailed license and copyright is also provided (Top 25 Web 2.0 Search Engines for College Students, 2007).

Findings

From open educational resource it has been found that, web tools provide effective experiences by involving, engaging and interacting learner with content and peers. Web 2.0 tools are reliable and simple to operate, they are

easy to access and offers digital resources through search engines and web links. Web 2.0 tools are the devices which help in communicating, collaborating and sharing digital resources; some of the tools are Podcast, Blogs, Social Bookmarks and Wikis. As compared to Web 1.0 tools, the Web 2.0 tools are user friendly and versatile, these tools are used to find and share digital resources in real time. These tools also facilitate learning by creating and producing knowledge, which creates a feel of self-discovery of knowledge among learners. Podcast helps learner in collaborative learning and it is the most effective learning because learner interact and learn by doing. Blogs, SNS and Wikis give opportunity to articulate learning, construct knowledge and develop skills in writing and research.

Conclusion

Thus from the above findings, one can conclude that Webbased technologies are most effective in finding and sharing digital resources. These tools are used as effective devices in classroom by teacher for making their teaching process effective, similarly learner also find these tools engaging and interesting because of the features as interactivity, collaborating and user centered. These tools help learners to share their files and work in group to create knowledge through collaboration. The social software and social networking sites (SNS) provide learner an opportunity to articulate knowledge through collaborative work and sharing of ideas and thoughts. The social software and SNS not only helps in building community and sharing resources around education events, but it also helps in accessing and managing digital resources for learning through a Personal Learning Environment. Web 2.0 tools and Social Networking Sites (SNS) develop socialization among learner through group interaction and collaboration, examples of these websites are My Space, Facebook and LinkedIn. In traditional teaching the dominant position is held by the teacher, but in web based teaching the learner is at the center of the learning. Tools for finding digital resources are equipped with Web 2.0 technology which increases search results relevance by tagging and mashups, examples of web 2.0 tools for finding digital resources are Google Directory, Flickr Storm, Rank Speed, Tinker, Lumifi, Whonu and Topix.

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Appendix

| Sr. No | Sharing and Search tools | Web address |
|--------|-----------------------------------|---|
| 01. | Podcasting | Podcasting Tools resource for podcasting www.podcasting-tools.com |
| 02. | Blogs | Blogger https://www.blogger.com/start |
| 03 | Video on demand | Teacher www.teachertube.com |
| 04 | Digital Resource Sharing Tools | flickr.com |
| 05 | Virtual Reality | http://secondlife.com |
| 06 | Social Bookmarking | http://twitter.com |
| 07 | Wikis | WIKIPEDIA http://www.wikipedia.org |
| 08 | Social Networking | facebook A S |
| 09 | Google Directory | Google http://directory.google.com |

| | | flister |
|----|---------------------------------------|--|
| 10 | FlickrStorm | storm. |
| | | http://www.zoo-m.com/flickr-storm |
| 11 | RankSpeed | RANKSPEED Search by sentiments. |
| | | http://www.rankspeed.com |
| 12 | Rippol Video Intelligent discovery | Rippol LITE Beta |
| | | http://rippol.com |
| 13 | Tinker | tinker |
| | | http://www.tinker.com |
| 14 | Lumifi | Victorial enlighten your research |
| | | http://www.lumifi.com |
| 15 | SpaceTime | space time 3D |
| | | http://search.spacetime.com |
| 16 | Whonu | http://www.whonu.com |
| 17 | Topix | topix |
| | | http://www.topix.net |
| 18 | Omgili | |
| | | http://omgili.com |
| 19 | Pixcy | pixsy s |
| | | http://www.pixsy.com |