Web 2.0 Based Collaborative E-learning: A Review

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Abstract

Collaborative learning and knowledge sharing could be a useful process for any level of education. Web 2.0 tools can provide all possible functionality for collaborative learning among the students of an educational institute. These tools could guide the students to do their projects or group assignments, finding solutions of a critical problem on the intranet knowledge base. The suitable Web 2.0 tools can generate a great learning space for the students in regard on aspects about usability, human cognition and to create a user-friendly environment. This can be done in many different areas as Web 2.0 take on many forms. The purpose of this research is to figure out different types of Web 2.0 tools which are preferred to use in an educational setting for collaborative learning. The author also evaluates the advantage of using Web 2.0 tools in collaborative learning. The educational settings acquire classroom education, distance education, research, and language learning and so on. Web 2.0 tools such as wikis, blogs, RSS and social bookmarking etc. with education process. The collaborative learning idea provides information system researchers with a deeper understanding and insight of the overall education system where Web 2.0 tools are integrated.

Keywords: e-learning, cloud computing, collaborative learning, web 2.0, e-learning 2.0

1. Introduction

Web 2.0 and social software now brings to directly use in the collected and individual wisdom of the world. Publishing and editing of new knowledge now is open up to just about anyone with an internet connected device. Web 2.0 technologies have move learner's from content consumers to content creators while engaging in a more participatory environments through activities such as soft publishing and user generating content using multiple forms of interaction. The learner engages in deep level of social interaction and results enhance knowledge creation. A key question for education is so what impact of this how students learn and teachers teach in the classroom? Learning in a Web 2.0 world will be influence by a globalization of how we learn and growing culturally. This globalization has been brought on by the ease of use desperate people can interact with one another through technology and a common interest. Students today are using social software as an extension of their physical
selves. They are communication and creating social networks and sharing details if their lives to the world. However, for most school is currently is a place of disconnect, they have to power it on when they go to class to learn. Many schools have no cell phones, no electronic devices policies in a fact. These creates a kind of disconnect any nation from many students with how they communicate learn and connect to their world.

While the terms “Web 2.0” and “E-learning 2.0” suggest a clean break from earlier applications of the Web, in education the differences, although significant, are due more to a gradual development and evolution of tools and teaching practice than a sudden “big bang.” Indeed, there is cause for concern that the term “Web 2.0” has been hijacked to describe one particular application of second generation web tools, while excluding other new web tools equally of value to education. Thus, some understanding of the history of the application of information and communications technologies (ICTs) in education is important in order to provide the necessary context for understanding Web 2.0 in education. The question whether Web 2.0 will change the education of tomorrow or not will be answered in a very critical way. The summary of this study pointed out that there is considerably more than using new applications and bring them together with the experiences of e-Learning 1.0.

Any educational practice that concerns the playful, expressive, reflective or exploratory aspects of knowledge building is likely to find Web 2.0 tools and services a powerful resource. Moreover, educators can safely assume that most learners know about them. When directed at learning, Web 2.0 impacts on four principal dimensions of the learner’s experience. Two are broadly social in nature (collaboration and publication) and two are more cognitive (literacy and inquiry). Web 2.0 tools appear to strengthen fundamental aspects of learning that may be difficult to stimulate in learners. There are problems with Web 2.0 learning in practice, but these tools do seem to mark a step change in the ways in which learners can interact with and on the web. The rise of internet technologies that can be grouped under the Web 2.0 heading has generated a good deal of interest in education. This is because the popularity of sites such as flickr, facebook, MySpace, wikipedia, etc is interesting in itself, in terms of what drives users to these sites and why they keep returning. But more significantly it is their potential as tools to facilitate learning that has caused much discussion. The use of Web 2.0 tools provides the ability to incorporate personalized, scalable and customizable systems. A teacher equipped for a knowledge economy needs to be equipped to deal with ambiguity, needs to be adaptable, highly mobile, entrepreneurial and creative. The workforce requires people with these qualities, and therefore the educational institutions need to model environments using the same principles. The Web 2.0 technologies described in this study are
widely used in the workplace and by faculty members. Therefore, an important and relevant instructional goal for educators preparing students for their professions is to help students learn to use these technologies for lifelong learning, teamwork, collaboration, document and idea sharing, inquiry, and so on.

2. Background of the Study

With the introduction of the ICTs in education, over the years many changes of extreme importance have taken place; before the teacher was the key figure for the student, starting from a rigid hierarchical teacher-student model to one now in which the contribution of all participants, teacher and students is valued. This goes from a systematic order which is linear and sequential to a hypermediatic disorder, from the transmission of knowledge according to a behaviorist or cognitive model or the production of knowledge according to a constructivist model. On one hand, the individual has a more active role; on the other hand, the possibilities and the need to choose and personalize learning paths and experiences grow. The term e-learning 2.0 is a neologism for computer-supported collaborative learning systems that emerged during the emergence of Web 2.0. From an e-learning 2.0 viewpoint, conventional e-learning systems were based on instructional packets, which were delivered to students using assignments. Assignments were evaluated by the teacher. On the contrary, the new e-learning places increased emphasis on social learning and use of social software, such as wikis and virtual worlds. E-learning 2.0, in opposition to e-learning systems not based on CSCL, undertakes that knowledge (as meaning and understanding) is socially constructed. Learning takes place through conversations about content and grounded interaction about actions and problems.

Web 2.0 refers to World Wide Web websites that emphasize user-generated content, usability (ease of use, even by non-experts), and interoperability (this means that a website can work well with other products, systems, and devices) for end users. The term was invented by Darcy DiNucci in 1999 and popularized several years later by Tim O'Reilly and Dale Dougherty at the O'Reilly Media Web 2.0 Conference in late 2004. Web 2.0 does not refer to an update to any technical specification, but to changes in the way Web pages are designed and used. A Web 2.0 website may allow users to interact and collaborate with each other in a social media dialogue as creators of user-generated content in a virtual community, in contrast to the first generation of Web 1.0-era websites where people were limited to the passive viewing of content. Examples of Web 2.0 features include social networking sites and social
media sites (e.g., Facebook), blogs, wikis, folksonomies ("tagging" keywords on websites and links), video sharing sites (e.g., YouTube), hosted services, Web applications ("apps"), collaborative consumption platforms, and mashup applications. Figure 1, shows the model of web 1.0 and web 2.0.

3. Web 2.0 Tools

A new range of web tools began to find their way into general use, and increasingly into educational use. These can be loosely described as Web 2.0 tools, as they reflect a different culture of web use from the former “centre-to-periphery” push of institutional websites.

Web 2.0 tools carry the potential of complementing, improving and adding new collaborative dimensions to many web based education and research services currently in existence which offer many unique and powerful information sharing and collaboration features. User does not require high technical skills to use these feature. That’s why it is called transparent technology. The user is able to concentrate more on the learning task by seeing through the technological environment they are immersed within. The World Wide Web technology declares Web 2.0 as trend which intends to smooth the progress sharing information, creativity, and mostly collaboration rehearsal between users. The web based communities and hosted services, such as wikis discussion forums, social-networking sites and blogs development and evaluation have guided by these concepts. Web 2.0 is now known as second generation of web that develops the collaboration and sharing via social networking sites. Educational institutes are at a phase, admin and other experts are feeling that they could progress the existing education system to use some of the aspects that the Web 2.0 brings. This study will be an exploration of an overview of these technologies and digital literacy’s required to integrate them into educational domain. Table 1 shows the list of examples of web 2.0 tools.

The use of Web 2.0 tools (wiki’s, blogs, RSS feed, social networks, podcast etc.) can support
innovative teaching methods and is associated with concepts like communities of practice, syndicated content, learning as a creative activity, peer-to-peer learning, creation of personal learning environments, and non-formal education. Such tools can be used to develop Learning 2.0 strategies that can enhance student motivation, improve participation, facilitate learning and social skills, stimulate higher order cognitive skills, and increase self-directed learning.

[Table 1] Examples of Web 2.0 tools

<table>
<thead>
<tr>
<th>Type of tool</th>
<th>Example(s)</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blogs</td>
<td>Stephen's Web (<a href="http://www.downes.ca/">http://www.downes.ca/</a>)</td>
<td>Allows an individual to make regular postings to the Web, e.g., a personal diary or an analysis of current events</td>
</tr>
<tr>
<td>Wikis</td>
<td>• Wikipedia (<a href="http://en.wikipedia.org/">http://en.wikipedia.org/</a>)</td>
<td>An “open” collective publication, allowing people to contribute or create a body of information</td>
</tr>
<tr>
<td>Social networking</td>
<td>• Facebook (<a href="http://www.facebook.com/">http://www.facebook.com/</a>) • MySpace (<a href="http://www.myspace.com/">http://www.myspace.com/</a>)</td>
<td>A social utility that connects people with friends and others who work, study, and live around them</td>
</tr>
<tr>
<td>Multimedia archives</td>
<td>• Podcasts • YouTube (<a href="http://www.youtube.com/">http://www.youtube.com/</a>) • Flickr (<a href="http://www.flickr.com/">http://www.flickr.com/</a>) • iTunes • e-portfolios</td>
<td>Allows end-users to access, store, download, and share audio recordings, photographs, and videos</td>
</tr>
<tr>
<td>Synchronous</td>
<td>• Skype • Elluminate • Adobe Connect</td>
<td>Allows free “real-time” audio and visual communication over the Web</td>
</tr>
<tr>
<td>communication tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-D virtual worlds</td>
<td>• Second Life (<a href="http://secondlife.com/">http://secondlife.com/</a>)</td>
<td>Real-time semi-random connection/ communication with virtual sites and people</td>
</tr>
<tr>
<td>Multiplayer games</td>
<td>• Lord of the Rings Online (<a href="http://www.loto.com/">http://www.loto.com/</a>)</td>
<td>Enables players to compete against or collaborate with each other or a third party/parties represented by the computer, usually in real time</td>
</tr>
<tr>
<td>Mobile learning</td>
<td>• Mobile phones • Ubiquitous computing devices and applications</td>
<td>Enables users to access multiple information formats (voice, text, video, etc.) at any time, any place</td>
</tr>
<tr>
<td>Open content</td>
<td>• MIT OpenCourseWare (<a href="http://ocw.mit.edu/">http://ocw.mit.edu/</a>)</td>
<td>Digital learning materials available free over the Internet, for use either by instructors or learners</td>
</tr>
</tbody>
</table>

Fundamentals of the Web 2.0 concept are based on a number of web services and applications which are already being used to a certain area in education. These services or user processes are built using the building block of technologies and open standards that underpin the internet and web. Many of the applications of web technologies are relatively mature including blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging services. Table 1 shows some of the tools and their uses. The main feature of Web 2.0 tools is that they empower the end-user to access, create, disseminate, and share information easily in a user-friendly, open environment. Usually the only cost is the time of the end-user. There are often few controls over content, other than those normally imposed by a state or
government (such as libel or pornography), or where there are controls, they are imposed by the users themselves. Some have called Web 2.0 the "democratization" of the Web.

To sum up, building and sustaining strong learning communities should be an essential dynamic in virtual classrooms. The findings from the current study suggest that Web 2.0 technologies can promote students' sense of learning communities in online classes. It is true that building online learning communities is a difficult task; however, doing so is an integral step for improving learning and teaching in online environments, and thus work in this area should continue.

4. Social and Collaborative Networking

The use of Web 2.0 tools provides the ability to incorporate personalized, scalable and customizable systems. A teacher equipped for a knowledge economy needs to be equipped to deal with ambiguity, needs to be adaptable, highly mobile, entrepreneurial and creative. The workforce requires people with these qualities, and therefore the educational institutions need to model environments using the same principles. The Web 2.0 technologies described in this study are widely used in the workplace and by faculty members. Therefore, an important and relevant instructional goal for educators preparing students for their professions is to help students learn to use these technologies for lifelong learning, teamwork, collaboration, document and idea sharing, inquiry, and so on. The first Internet educational tool, well preceding the invention of the Web, was discussion software that allowed multiple users to discuss asynchronously online in a common, if virtual, area (CMC—see Hiltz, 1986). This technology has gradually evolved through discussion forums into community-based collaborative networks. Social software, such as discussion forums, allows students to test, question, and construct their own, personalized knowledge. Technology, social interactions, and the learning content are crucial components of an effective learning community. There are three dimensions of an online community: a technological dimension, a task dimension, and a social dimension. The technology has important consequences for the successful accomplishment of group tasks and the successful maintenance of the group. The technology, must allow group members to contribute knowledge; provide scaffolded assistance and the interaction tools needed to adequately relate concepts, experience, and knowledge; and provide a space for the group's memory. The task dimension includes the learning content, materials, resources, and activities used in the courses. The social dimension refers to participants maintaining some degree of mutual caring and understanding through frequent interaction. Similar theoretical framework
that includes instruction, social interaction and technology as the three major dimensions of their e-learning community. Findings also revealed that using blogs and Twitter gave students a sense of a learning community. The students said that using the blogs’ commenting feature gave them a sense of community, enabling them to receive feedback about their work from their classmates and to see their classmates’ work. The students felt that using Twitter gave them a sense of a learning community by providing them with the ability to share ideas not only with their classmates but also with others who had similar interests. Using the hashtag feature in Twitter and using the Twitter cell phone application also supported students’ sense of community; however, some students said that using Twitter did not give them a sense of a learning community because the use of Twitter was limited to one assignment or because they preferred to use Twitter for personal purposes. Despite the misgivings of these students, the author will nonetheless extensively use Twitter and blogs throughout future courses to help students experience how these tools can be used for educational purposes since so many students found them useful in this study. Few students said that Skype gave them a sense of a learning community. The majority of the students did not use Skype to communicate with their groups; rather, they preferred using their cell phones or the messaging feature in Canvas. Therefore, the use of Skype will be modified; the author will ask students to schedule Skype sessions with her to discuss students’ progress in the course activities. The purpose is to help students to experience the power of Skype to facilitate communication among the students and between students and the instructor. Learning models require to knowing the social aspect of learning and as a consequence place of strong emphasis on knowledge networking and community building to leverage, sustain and share knowledge in a collaborative way to have a chance of success. For building this communities and networks, we need to penetrate classrooms and organization boundaries to involve peers, partners, customers, suppliers and different types of frequently overlapping, formal and informal communities including learning communities, communities of interest and communities of practices. Civic engagement, participatory culture with low barriers, strong support for creating and sharing one’s invention and some type of informal mentorship required to build it. A participatory culture where members believe that their contributions matter and feel some degree of social connection with one another is also required. Bottom up building of communities and network also supported by social media. Figure 2 shows how blogs can be used in e-learning.
5. Educational Implications of the New Web 2.0 Tools

Web 2.0 tools are so relatively new to education that educators have yet to find new designs for teaching and learning that fully exploit such tools. Most uses to date have been within the framework of a teacher-controlled model of instruction. For instance, teachers may add their own blog to an online course, or encourage students to chat or work offline then post their work back in the “teaching” area. They may use Elluminate to deliver a live lecture with slides, or a podcast to catch an update from a visiting expert, or to transmit a recorded classroom lecture. Note that Web 2.0 tools can be used quite independently of an LMS (although they can also be made available within or in parallel to an LMS). Nevertheless, there are now an increasing number of examples of teaching and learning using Web 2.0 tools that exploit the learner’s capacity to access, create, and publish materials. Student, education and technology have been changed in the pass of time. So, we have passed from static web to a dynamic one, almost over night. The new only born user has no longer a passive role but he can participate and collaborate by creating and sharing content. These new user has an active role that an able to him be a part of the massive community. These new web also called social web is a nominated web 2.0. The users are the leaders of new change and the old web
also called the web of data, it is now the web of people. It generates space where interaction is constructed by the social factor and technology. The users share content for information and communication. In web 2.0 interactions is given by user platform such as blogs, wikis and forums and the content can be classified into categories for example, Wikipedia created in 2001 by same users. Twitter is a wide platform for lazy teachers who can write little messages to get students informed what is going on. Teachers and students can stayed in two communities but they will login same school off course. So these tools like blog, wiki and twitter are the easiest one to use for learning purposes. Web 2.0 applications foster a new approach to learning. The possibility to share educational materials and to imagine derivative projects gives a wide range of opportunities for teachers to reach specific learning needs and focus on outcomes for a more empowering learning experience. The investigator tried to find out the experiences and views of faculty members for all universities on learning applications of Web 2.0.

6. Discussion

Finally, we have found blog, wiki, podcast; social bookmarking and Google Docs are very useful for learning. We have produced a framework as a table format for each of them which have described their individual course of action in learning and advantages. Blogs, wikis, podcasts, social bookmarking and Google Docs have increased the interaction between teachers and students. The implication of those tools for education has been discussed thoroughly which included educational system has pretty influenced by these new ways. Social software’s were bringing in and become accepted in many educational settings particularly in distance education and e-learning. The ability to incorporate personalization, scalable and customized system has provided by the use of blogs, wikis, podcasts, social bookmarking and Google Docs in education. Students want a learning atmosphere which has the capacity to support a variety of different resources and systems. The results have shown that virtual learning environments have been playing an increasingly bigger role, but they are most often used for tests, assignments, or data accumulation. The formation and contents of this learning environment is directly related to university teachers themselves, who need the competence of technology use and information literacy. The use of web 2.0 tools for learning purposes depends upon relevant usage skills and abilities, which can bring a hope of having better results of integrating web 2.0 technologies into a formal education process. Students are exposed to broad possibilities of creating individual or specific group learning environments applying web 2.0 technologies and
tools. The abovementioned technologies also facilitate two-way communication between a student and a teacher. The studies, carried out with the help of web 2.0 technologies, are characterized by the following: a strengthened role of teachers, moderators, and learning facilitators; a possibility of active learning for students when creating their own knowledge; stimulated creativity; creation of learning communities; encouraged transformations within organizational and social processes. Similarly, the question of teachers' digital literacy arises, since this is the major factor in a coherent technology use during the study process. Scholars note that, undoubtedly, the use of web 2.0 tools has numerous advantages; however, at the same time, it raises new requirements for university teachers who have to systemically sophisticate their information literacy as well as web 2.0 skills and competencies, change their attitudes, grow as innovators, or raise new pedagogical aims, such as to use audio and video materials, Wiki texts, and communicate with students via social networks.

7. Conclusion and Future Works

The educational system is continually being changed to keep up advantage and technology. As a particular piece of technology gains critical mass in general society their pressures brought to bear by supporters of this technology to incorporate into all settings, personal business and into the educational settings. This is happen through history with the invention of papers, calculators, computers, the internet and now the web 2.0 social software's. So these web 2.0 or social software tools such as blogs, wikis, and podcasting for example have already become accepted in many educational settings particularly in distance education and e-learning. Other example of web 2.0 or social software's such as RSS, FaceBook, and MySpace have not experienced in such a warm welcome. Already the educational system pretty influenced these new ways that social software were bring in. The features of Web 2.0 construct infinite opportunities and possibilities of further research. The use of Web 2.0 tools in educational environment is still new approach and their benefits and drawbacks are not yet fully recognized.

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