

Web 2.0 In Higher Education : Implementing A Web 2.0 Based Conceptual Framework in Adaptive Learning and Knowledge Sharing

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Abstract

This research paper focuses on designing a conceptual framework for Web 2.0 based learning in higher education. The author will discuss basic requirements for such a framework and provide an overview of all its important phases and functionality. In this research paper, the author briefly review the overview and current state of Web 2.0 tools and technologies, some Web 2.0 tools that are used in education and research, issues surrounding Web 2.0, pros and cons of Web 2.0 technologies in higher education and then focus on designing a conceptual framework for learning and knowledge sharing in higher education using Web 2.0 platform.

Keywords— Web 2.0 platform, Web 2.0 technologies, Conceptual framework, higher education (HE).

1. Introduction

Web 2.0 tools and technologies has been intensively adapted in Higher Education for teaching and learning. The characteristics of easy publishing of content and broad communication of these technologies encourage and help create a participatory culture among educators and learners

In today's world, Web 2.0 is treated as concept as well as a technology. As a concept, Web 2.0 defines such as openness, personalization, collaboration, social networking, user-generated information, read and write Web, and collective wisdom [1]. In respect to technology, Web 2.0 defines as how information is created, delivered and accessed on the Internet. For example, a wiki website is a Web 2.0 technology that enables anyone with the help of an Internet connection and a Internet web browser to create, update, access, and edit a website content. Web 2.0 as a technology can be interchange with the terms like social network and social media which are broadly defined as

technologies that extend and enhance human communication capabilities [3]. However, Web 2.0 is now accepted and adopted in higher education, there appears to be a lack of frameworks mentioned in the literature that guides to faculty and students how to use Web 2.0 more efficiently in the classroom.

Examples of Web 2.0 technologies are like Twitter which is online social bookmarking and micro blogging website. Here register users can post and read tweets and unregistered users can only read the tweets; wiki software such as PBworks that enables the creation of collaborative workspaces; media sharing tools such as Slideshare, YouTube; and social networking applications such as Facebook and LinkedIn that enable professional networking. The use of Web 2.0 tools and technologies is affording the creation of Web learning experiences that can be used in pedagogical practices [1,4].

This research paper contributes Web 2.0 use in higher education by reviewing the literature on Web 2.0 implementation frameworks and provides a new Web 2.0 based conceptual framework based on the literature and experience to help faculty and students. This Web 2.0 framework can be implemented in higher education institutes to enhance the benefit of Web 2.0 technologies. The author present a framework that can guide the design of learning experiences offered by Web 2.0 platform. This framework can be adopted into higher education practices so that integrity of Web 2.0 add value to learning, teaching and research. It will also motivates and ensure trust among faculty and students.

2. Overview of Web 2.0 Tools and Technologies

There are a number of tools available on the Internet that can be the part Web 2.0 platform revolution which facilitates and promotes communication and collaboration. If we see from the education point of view, these tools are highly interactive and can be the

integral part of higher education. Some of these tools are discussed below.

Wikis: A "wiki" is a collection of Web pages. It is designed so that anyone with access these pages can contribute or modify content of these pages by using a simplified markup language. One of the best known wikis is website Wikipedia. Wikis can be used in learning by facilitating the knowledge systems powered by learner community [9].

Blogs: A blog is a type of Internet Web 2.0 tool, usually maintained by an individual with regular discussion entries. Blogging can be efficiently used in education sector by discussing and commenting on different topics. Blogging is an collaborative endeavor among faculty and students.[12].Currently Blogger is the famous website for blogging.

Podcasts: A podcast is a digital media file, usually digital audio or video that is available on the Internet. The benefit of podcasts are that the lectures enabled with audio and video are easy understandable to students. The digital media file may be audio, audio enhanced with graphics or PPT slides, or full video. The popular site for podcasts is YouTube where one can upload and see podcasts .

Social Networks: A social network is a social structure made up of individuals or organizations. Facebook is one of largest social networks website. Twitter website is a combination social network and microblogging service that enables its users to send and read messages known as tweets

Web Conferencing: Web conferencing tool is used in class meetings for an online courses. Faculty can deliver lectures online from any part of world. Guest speakers can interact online with participants from their workplace.

Social Bookmarking: This Web2.0 tool facility allows store and share bookmarks from within an online environment. This helps researcher to get details of particular topic from different perspective.

3. Possible Pros and Cons of Web 2.0 in Learning and Knowledge sharing

When it comes to Web 2.0 in learning, there is no one-size-fits-all approach. Educational social media comprises of numerous online technology tools. Points below outlines some of the possible advantages and disadvantages of web 2.0 platform in education

Pros:

1. Innovative learning environment. If Web 2.0 technologies are used in a classroom, faculty and students become part of it. They have the opportunity to be an active part of the class. [8]. Active participation in Web 2.0 means they are sharing subject related blogging or having a presence on a social network related to subject. All of these Web 2.0 technologies can engage the faculty and students in innovative learning and allow them to become an integral part of the web2.0.

2. Web 2.0 - A global classroom. The best way to learn is to participate actively. Web 2.0 technologies expanded the classroom to the global classroom. Because of easy access to the virtual internet world, the shared knowledge can be open to anyone and anywhere. It is not restricted to a single classroom environment or a single set of learners. This means that students have a more global perspective with the use of Web 2.0 tools and technologies. This leads to enhanced information discovery and delivery.

3. Collaborative learning. Web 2.0 technologies allow faculty and students to work together in teaching and learning. This facility of Web 2.0 increases the collaboration among faculty and students that is very healthy approach in today's competition environment in education. It also provides an opportunity to widen educational contacts among educators.

4. Knowledge on demand. All of the Web 2.0 technologies are Internet based. These technologies are always available for users. Participant simply needs an Internet connection and he/she can be the part of Web 2.0 enabled learning mechanism. This means that students can interact in a learning environment anytime or when they are want to become the part of learning mechanism. Participants can get access to broader base of opinion and views all the time whenever they are connected.

5. Assisting shy students. There are some students that find social interaction difficult among colleagues. So they are not able to contribute much in classroom. By engaging such students through Web 2.0 assisted online projects and assignments can make easier for them to contribute.

Cons:

Despite the fact that web 2.0 has numerous advantages, it has some downsides which can degrade the learning process if these tools are not administrated properly. These include:

1. Limited Internet availability. Not every student has access to Internet availability when they are not in Educational campus. This issue is especially faced by the learners in developing countries where the use and availability of the Internet is not as advanced. This is a major disadvantage for learners who cannot afford or do not have access to a computer or an Internet connection all the time.

2. Authenticity of work is compromised. Accessing information online is wonderful, but it can be like leaving your valuables on a table in your front yard [5]. The information available on Internet can be easily copied and distributed. Students generally copy content from web related to their class assignments rather than doing on their own. This decreases the student performance continuously and stops the learner to become a successful innovator. It gives doubt to the authenticity of original and copied work.

3. Lack of Security and Privacy. Due to openness of Web 2.0 technologies there is always fear of data integrity. Privacy factor also plays a big role in disadvantage of Web 2.0 technologies because sometimes openness can cause extreme discomfort for faculty as well as students. Data stored in Internet may be misused for different purposes.

4. Wastage of time and resources. Most of the students are so addicted to Internet that they spend most of the time in surfing the material that is not related to their studies. This time can be used for progressive work.

4. Present State of Web 2.0 in Higher Education Institutes

The integration and adaption of Web 2.0 technologies such as wikis, blogs, skype, facebook etc. in teaching, learning and knowledge sharing is termed as Web 2.0 based learning.

Web 2.0 technologies are having a direct or indirect methods of adoption and acceptance in education and impact on the universities and institutes as well as on faculty and students. For example, students are simultaneously learning and using Web 2.0 technologies even students are not deliberately or strategically using Web 2.0 technologies for learning [10].

Research also shows that faculty at higher level education are increasingly using Web 2.0 technologies

to support teaching and learning activities. For example, some faculty are using and encouraging students to participate in use of blogging software so that their queries related to their subjects can be solved online. Some faculty are also using web 2.0 related wiki software to engage students in collaborative projects that support the creation, updation and management of content. Faculty and students also using the media sharing tools like YouTube to see the online lectures on different topics. Also the use of online Web 2.0 bookmarking technology is gaining popularity as a tool that can help students organize and categorize course information in meaningful ways using tags and share their bookmarks with others the course content or resources [11].

Ideally, Web 2.0 services have wider reach for users. These services can be accessed from smart mobile phones, PDA's etc. Due to multiple source of input, this increases the participation of users. From pedagogical point of view, these additional means of participation and increase of users is advantageous.

5. Web 2.0 research – centred educational approach

Actually Web 2.0 is impacting in all sectors of society including education. But people in education sector are not fully aware of the prospects and future that web 2.0 hold for higher education.

Several researchers, educators, IT professionals and technology Scientists are predicting that immediate and large scale changes are in store for educational sector because of the emergence of Web 2.0 tools in higher education.

Web 2.0 is playing a big role in Education Research also because online and Web 2.0 approaches enrich traditional qualitative research that enable to gain deeper insights. Also online research methodologies powered by Web 2.0 broaden the horizon and allow additional understanding.

6. Challenges in designing and of Web 2.0 based framework in Higher Education

Despite there is an intensive use of Web 2.0 technologies in higher education, still it appears a lack of empirical evidence of the process that faculty and students follow in the classroom. When implementing Web 2.0 in higher education it is important to provide directions to faculty and students on how to overcome barriers and put the process in streamline.

It has been noted that some frameworks has been developed for specific Web 2.0 tools. For example, the framework proposed by Kerawal explains the use of blogging in higher education.[7]. Still it appears to be lack of directions in the education world to implement framework in education contexts. Prior to implementing a technology initiative, an organisation need to take strategic planning to assess its mission and how to achieve the mission through technology.[2][13].

The scope and vision has been acknowledged by, who is using Web 2.0 technology and what is the purpose of using it.[6]

The important factors to address is how to implement Web 2.0 technology to support the pedagogical approach applied by the faculty and students. It is important to consider functions before implementing web2.0 in education. This function involves the reviewing the education culture within the classroom and see whether Web 2.0 can be accommodated in this culture.

The important challenge is designing a pedagogical approach framework that allows students to contribute to knowledge creation. The framework must be well structured and easy understandable to faculty and students.

7. Designing of Web 2.0 Implementation Framework

To facilitate knowledge sharing among faculty and students in higher learning Institutes, Web 2.0 based conceptual framework to be used in teaching and learning is designed. The framework consists of different phases as illustrated in Figure 1. These phases are:

Phase 1 - Assess web 2.0 knowledge culture among faculty and students: Higher educational Institutes should encourage faculty and students to accept Web 2.0 initiative so that Web 2.0 technology can help in enhancing subject knowledge. This will help in sharing the teaching and learning experience as well knowledge. Also there should be wide understanding between education community to know the purpose of induction of Web 2.0 platform. These Web 2.0 platform tools should be well accepted by teaching and learning community.

Phase 2 - Implement Web 2.0 platform: Web 2.0 is enabled by different tools such as content sharing and social networks. So there should be appropriate time to

introduce and pilot web 2.0 platform. Lacking of proper implementation process of Web 2.0 tools will make these Web 2.0 related tools useless and irrelevant. So in order to take advantage of Web 2.0 tools in education, there should be active participation of faculty and students in content creating and sharing. There should be proper guidelines and time frame that will help teachers and student community about the type of content should be added to web 2.0 platform. Different approaches in teaching helps in recognise the student participation. Students and faculty should take responsibility and ownership.

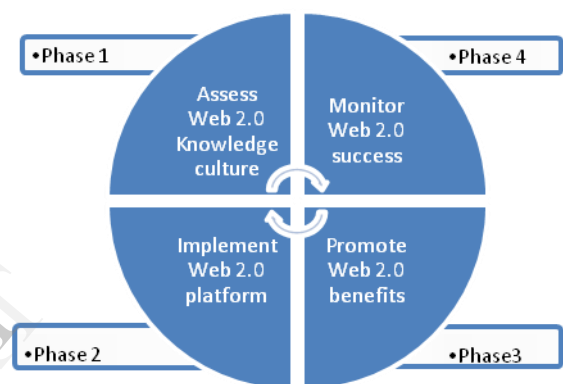


Figure1. Web 2.0 Implementation Framework

Phase 3 - Web 2.0 Platform- Promote benefits: Variety of Web 2.0 tools such as social networking, audio and video podcasts can be used to share teaching knowledge efficiently. For example video podcasting enhance the visual sharing of knowledge. Similarly social network sites provide teaching reflection and support different teaching methodologies. Wikis support collaborativr learning. So it is obvious that web 2.0 platform enhance support in learning. Web 2.0 tools can be used by faculty to create their own work. Similarly student generated content show many benefits of active learning. When students learn to solve problem in real time they become better to find the optimal solution to problems.

Benefits of Social media such as wide source of information, easy to find information and all time availability should promote in higher education

Phase 4 - Web 2.0 training support and monitor success: As Web 2.0 is a emerging new technology in teaching and learning, there should be proper support for training these new technologies, so that users can take maximum advantage of Web 2.0 platform in

education. This should include the training of tools to enable faculty and students to independently solve the problems and how to improve interactions between students and instructors. Also there should be continuous feedback system that helps in monitor the success of Web 2.0 platform in education.

By implementing web 2.0 framework in Higher Education not only faculty but students also become content creators. It also help faculty to built collective intelligence among students and faculty acts as a learning designers

8. Conclusion

In this paper author has presented a Web 2.0 assisted educational framework aiming to support both faculty and students in integration and implementation of Web 2.0 tools in regular classroom practices.

The presence of Web 2.0 in higher education institutions and Universities across the tiers are beginning to see the potential for their own strategic interests and make choices for the benefit of these technologies. Now a day's Web 2.0 technologies has become the integral part of higher education where students switch between online and face-to-face learning on a fixed schedule.

By implementing the above framework in education practices will provide the flexibility which is acceptable to vast range of different contexts. Learners can take advantage from framework for their individual learning style. This also facilitates pedagogical innovation by supporting teaching and learning process that promote collaboration between educators.

The outcomes of students for learning and achieving higher education with Web 2.0 tools is very positive because they find it very interesting. These tools and technologies have also given researchers and faculty to a new level of thinking in regard to working with their students.

The conclusion is that the author provides a conceptual framework around the educational Web 2.0 platform that can help faculty and students to adopt Web 2.0 platform as an important and efficient learning space to be integrated in their instructional practices. The future of higher education system will be integrated and accepted in Web 2.0 platform by implementing this web 2.0 framework in higher education and this framework can be expanded through their own innovations for smooth learning.

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