

Web 2.0 in Academia

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Abstract

Can Web 2.0 aid in the process of teaching and learning? Web 2.0 enables the users to manage the content over the web by providing opportunities for sharing, collaborating, and exploring information. It presents a platform for interaction among groups of people who can be miles apart. Students all over the world are actively using social media as a means of interacting with their friends and family. This paper explores the possibilities of implementation of Web 2.0 in academia. In addition this paper examines the usefulness of Web 2.0 applications in teaching and learning. The advantages and disadvantages of the incorporation of Web 2.0 in instruction will be investigated in this literature review. The potential of Web 2.0 tools as a facilitator in teaching and learning will also be explored.

Keywords: Web 2.0, higher education, assignments, social media, Twitter, Internet

1. Introduction

Students all over the world are actively using social media as a means of interacting with their friends and family. They update their statuses to inform others of their whereabouts. Web 2.0 also makes available other tools that enable pooling of resources and resource sharing, which in turn causes flow of information. This phenomenon encourages people to work in teams towards a common goal. In the past five years the social networking sites such as the facebook, Twitter, and mySpace, and collaboration tools such as wiki, and blogs, and document and image sharing have gotten extremely popular. Cell phone technology offers easy access to the social media and other Web 2.0 technologies.

This paper proposes a means to harness the interest of the students in Web 2.0 and the free availability of this technology by incorporating it in the curriculum. By creating assignments that implement social media such as Twitter, the conversations that start in classroom can continue even after school hours. As stated by Hargadon (2008) "Web 2.0 is the future of education". This literature review explores the opportunities of implementation of the Web 2.0 technologies in the curriculum. In addition this paper examines the various Web 2.0 tools that have the potential to aid in teaching and learning.

2. Background

2.1 Brief history of Web 2.0

There is an ongoing debate as to who coined the word Web 2.0. Although the phrase Web 2.0 is often associated with Tim O'Reilly due to the Web 2.0 conferences he initiated in 2004, Web 2.0 was coined by Darcy DiNucci in the article "Fragmented Future"

2.2 What is Web 2.0?

Web 2.0 is dynamic and user centered. There are several applications of Web 2.0 that encourage and promote collaboration, sharing and user managed information. This information is supposedly created and used by the user. Web 2.0 is considered a common ground for the user to interact and share information. Some of this information is personal and some is knowledge. The information that is personal is often shared through social networking sites (SNS).

2.3 What is Web 1.0?

So if there is a web 2.0 then there should or should have been a Web 1.0.

According to Caverly et al (2008) “Web 1.0 used to be static and it slowly developed into an interactive and dynamic space to share information presenting a prospect for teaming up and pooling intellectual resources and sharing experiences that can benefit all.”

2.4 Differences between Web 1.0 and Web 2.0

According to Cormode and Krishnamurthy (2008) Web 1.0 and Web 2.0 run on the same substrate and the differences can be “projected onto a variety of axes, such as technological (scripting and presentation technologies used to render the site and allow user interaction); structural (purpose and layout of the site); and sociological (notions of friends and groups)” Cormode and Krishnamurthy(2008) believe in Web 1.0 there were more content consumers and very few content creators whereas in Web 2.0 anyone can be content creators and consumers at the same time.

From technical point of view the major difference between Web 1.0 and Web 2.0 is the use of AJAX in the Web 2.0.

2.5 Web 2.0 applications

Some of the popular Web 2.0 applications are

Social networking sites:	Facebook, Twitter, Myspace etc.
Bookmarking sites:	Delicious etc.
Wikis:	Wikipedia
Blogs:	Document sharing
Document sharing:	Google docs.
Multimedia sharing:	You Tube
And more	

3. Discussion

Web 2.0 opens up opportunities of collaboration, sharing and resource pooling across the world. This phenomenon should be examined and used to our advantage. As stated by Sledgianowski and Kulviwat (2009) “The use of Internet social network sites has become an international phenomenon. These websites enable computer-mediated communication between people with common interests such as school, family, and friendship. Their rapid widespread usage warrants a better understanding.”

Although Web 2.0 provides several collaboration and sharing opportunities, the question of how important is this collaboration in teaching arises.

3.1 Importance of Collaboration and Team work

When examining the collaboration characteristics in human beings Chickering and Gamson (1991) identify *Seven Principles of good undergraduate teaching* that influence academic performance of students, namely:

- Level of contact between students and staff.
- Reciprocity and co-operation among students.
- Active learning.
- Prompt feedback.
- Awareness of the time needed to be spent on the task.
- High expectations.
- Respecting of diverse talents and ways of learning.

Web 2.0 offers seamless implementation of most of these principles in a classroom setting.

3.2 Can web 2.0 be implemented in academia?

Several sources discussing the utilization of Web 2.0 applications in education have been examined based on Bloom’s Taxonomy as mention by Snarski(2010, p.10). These articles have been critically examined “with a discerning eye...” (Snarski, 2010, p.10) to evaluate for “...credibility, intent and bias...” (Snarski, 2010 p.10). David et al (2008) believe “ Although there is little research on the effectiveness of blogs with the developmental students, it is logical to use a medium that is familiar and comfortable to the millennium generation.” The three Web 2.0 applications discussed byDavid et al (2008) are the blogs, Wikis, and the Second and the techniques of using these applications.

Grosbeck (2009) was very enthusiastic about using the Web 2.0 applications in teaching and learning. She was a strong advocate for implementing Web 2.0 in academia. She investigated various factors that affect the interaction abilities within SNS. According to Grosbeck (2009) “Web 2.0 refers to social use of the Web which allow people to collaborate, to get actively involved in creating content, to generate knowledge and to share information online.” Grosbeck argues that the curriculum for higher education should be developed o trigger critical thinking by incorporating theories and principles with modern ways of implementation. She continues to promote the incorporation of Web 2.0 in higher education curriculum keeping in mind the job market. Clark (2010) also attempted to use the latest technology the students were already using in her writing classroom. She has made a case for the 21st century pedagogy in changing the traditional writing education to implement the Web 2.0 technology. Maranto and Barton (2010) explored the connotations of the use of social media in a classroom. They examined the use of facebook and MySpace by students, teachers and administrators. This was a very critical study that encouraged the use of social media in a classroom. The authors believed the students could learn more by understanding the use of social media rather than denouncing it.

Sorapure(2010)took a whole new profile of Web 2.0 as an information visualization aid. She discussed the information visualization aspect of Web 2.0 and focused her study on integrating these visualization tools in teaching writing. She believed the writing ability and interest in writing in students can be revived by the use of tools that can help students visualize their writings. She also believed this can lead to the creation of new digital artifacts. While Sorapure focused on writing, Meyer (2010) compared several different Web 2.0 tools that can be used in higher education in a classroom. She used Blooms taxonomy to evaluate the levels of learning achieved by the use of these Web 2.0 tools. The tools she examined were the wikis and blogs. Her study found that although some students protested the use of these tools others found them helpful in collaboration. According to her study the students preferred blogs over wikis. While there are several web 2.0 tools that can be used in academia, there are also numerous factors influencing the implementation of these tools.

3.3 Factors influencing implementation of Web 2.0

Sledgianowski et al. (2009) used experimental data to gather information on the factors influencing user implementation of the social networking sites such as the Facebook and MySpace. The authors introduce a Social Network Site Adoption model to inspect the effect of perceptions of normative pressure, playfulness, critical mass, trust, usefulness, and the ease of use on usage intention and the actual usage of these sites. Sledgianowski et al (2009) used a created a SNS adoption model based on a pre existing Technology Acceptance Model (TAM) formulated by Davis et al(2009) from the Theory of reasons action(TRA) by Fishbein and Ajzen. In the TAM Davis et al found out that the intention was related to the usage.

The model is depicted in the figure below.

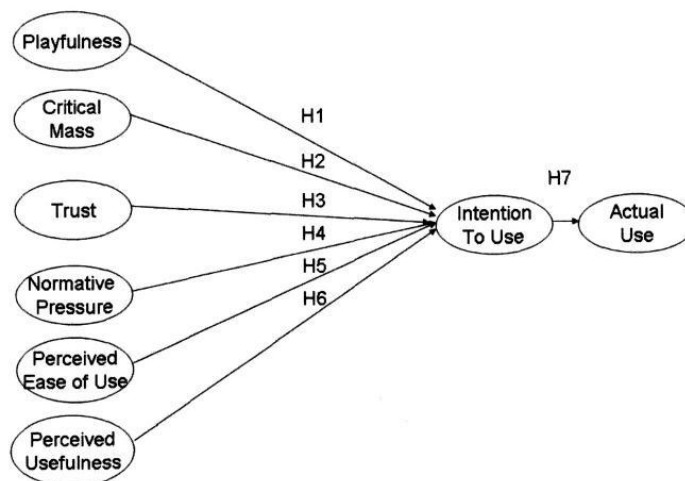


Figure 1. Social Network Site Adoption Model

Prasarnphanich and Wagner (2009) argue that altruism is the main factor encouraging the users to participate in the wikis. Wikipedia is an excellent example of collaboration at success. The basis of the Wikipedia is on information sharing. They base their hypothesis on the model of contribution motives shown in fig below. The factors of influence also emphasize the usefulness of these tools

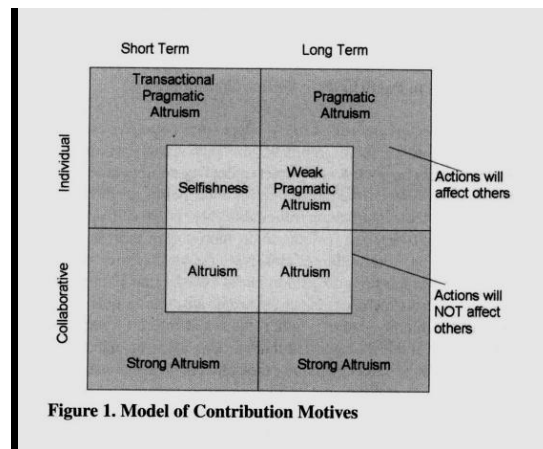


Fig. 2. Model of Contribution Motives

3.4 Usefulness of Web 2.0 tools

Web 2.0 offers tools such as You Tube that can be used by students to find animations and information on the topic being learned in the class.

Web 2.0 document sharing can be used to offer students a tool where they can share their work with classmates and peer. This enables the students to collaborate and share their work and thoughts. It can be a great tool for a group project.

Usluel et al (2009) explore a wide range of Web 2.0 applications in terms of their usefulness. Some of the tools Usluel et al examined for utilization of Web 2.0 tools are blogs, wikis, podcasts and social networks, in terms of importance of interaction for distance education. His study was also based on the Theory of reasons action (TRA) by Fishbein and Ajzen. According to Usluel et al (2009) "Providing interaction between students, teacher, content etc. has been a major factor since beginning of distance education and developments in technology that provides interaction, has brought out necessity of continuous support for process. As Web 2.0 technologies support interaction process, many advantages of them have also been a response for questions about adoption of these technologies in distance education. On the other hand, one of the most important ways of obtaining effective outcomes with these technologies, is individuals' acceptance and usage of technology in system and there has been many studies in the framework of different models and theories..."

Purdy(2010) focused his study on the examination of the various Web 2.0 technologies that can assist in research and writing of scholarly work versus the traditional means of research and writing taught in schools. According to Pudy writing and research activities are integrated. Purdy "Contends that, with this integration, Web 2.0 technologies showcase how research and writing together participate in knowledge production". This article is interesting in two ways; one by boldly substantiating the Wikipedia; secondly by arguing Web 2.0 offers an ideal environment for research and writing at the same time. The author discusses the compartmentalization of research and writing in composition classes and how this can be overcome by using Web 2.0 technologies, such as the Wikipedia, JSTOR, ARTstor, and del.icio.us. The author examines the various Web 2.0 technologies that can assist in research and writing of scholarly work versus the traditional means of research and writing taught in schools.

The study conducted by Lemley and Burnham(2009) to investigate the use of Web 2.0 in the curriculum revealed that 47% of nursing schools used Web 2.0 tools in the nursing school curriculum and 55% of medical schools used Web 2.0 tools in their curriculum. So far all the studies examined have been in favor of the use of Web 2.0 in academia. No literature review is complete without the examination of the two sides of an argument. AS ther are advantages, there are also disadvantages and challenges associated with Web 2.0.

3.5 Are there any negative connotations and challenges with the use Web 2.0?

The major disadvantage is the digital fingerprinting that users are leaving behind unknowingly. Every statement that is made by us on the Web 2.0 is being recorded and can be used against us by anyone.

There are also major issues with privacy and security of any individual. In the social networking sites individuals can ignorantly provide too much personal information. There is a risk of this information falling into the hands of hackers and malicious people. The over reliance on the Web 2.0 can also be a problem. Web 2.0 can be addicting and if users do not have access to this due to lack of internet it can be frustrating. Social networking plays an important role in Web 2.0 technology.

As Sahin and Coklar (2009) stated “Despite being used frequently due to the benefits brought to daily life, the use of technology also brings with it certain disadvantages, stress, is referred to as technostress”. The authors examined the technostress levels of social networking website users based on the monthly income and their age. Both these factors seemed to cause a change in the technostress levels of the social networking website users. The study found that the social networking users were under medium stress level depending on their age and income level. They also concluded that this stress was due to environmental reasons and not due to social reasons.

Some of the disadvantages noted by Grosseck (2009) are

1. Requirement of an internet connection
2. Web 2.0 hides behind technology that is not clearly understood
3. Is based on Ajax, which is dependent on JavaScript and if the user has JavaScript turned off, then the user cannot access it.
4. Lack of quality control on the content
5. Creates a community without rules
6. Limited security
7. It is electronic junk
8. It has monetary quantification. Some of the sites use advertising as a means of acquiring monetary benefits. These sites can be influenced depending on the size of the monetary benefit.

Having examined the positives and negatives of the Web 2.0 the discussion leads into actual implementation of the Web 2.0 tools to benefit the students.

4. Conclusion

The various aspects such as the usefulness, challenges and factors influencing the implementation, of Web 2.0 in academia were examined. The findings strongly advocate the use of Web 2.0 in academia. My challenge will be to find ways to implement Web 2.0 tools in academia. The purpose of this paper is to promote the use of Web 2.0 in teaching and learning.

5.0 Future Research Opportunities

Web 2.0 is a very new area of research. There are several avenues untouched in this area. I am exploring the integration of Web 2.0 in a classroom. The follow-up areas are :

- How can Web 2.0 be implemented in academia?
- What are the best Web 2.0 applications in the integration of Web 2.0 in curriculum?
- What are the positive and negative effects on the students?
- Are there specific Web 2.0 tools that should only be used in a certain courses?
- How much can Web 2.0 be integrated in the curriculum before the adverse effects start to show?
- Are there any adverse effects of integrating Web 2.0 in curriculum?

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