

WEB 2.0 APPLICATIONS AND SOCIAL NETWORKS - FACEBOOK IN EDUCATION

Kanaki Kalliopi

Teacher of Informatics at the 5th Vocational School of Heraklion
pkanaki@hotmail.com

Abstract

In the last decade, the phenomenon of digital social network communities has spread all over the world. Trying to describe these kind of social networks, we could say that they are interactive digital environments where self-expression is strongly encouraged. People all over the world have massively embraced Facebook, since it made its appearance in February 4, 2004. The adoption of Web 2.0 applications such as Facebook in education and the potential benefits and risks that these kind of modern educational techniques entail, constitute the subject of research of many scientists from different scientific fields all over the world. In this study, what is going to be examined is the use of Facebook by Secondary Schools in the prefecture of Heraklion.

Keywords: Facebook, benefits, risks, Learning Management System.

1. Introduction

Web 1.0 applications have contributed in the learning process by providing a non-editable educational context. For example, multimedia applications can be used to enrich the educational process and make it more attractive and effective. Web 1.0 applications are in accordance with behaviorism, a learning theory which supports the acquisition of knowledge through repetition. Users can study learning materials and do online tests while social interaction can be conducted via forums. We can say that Web 1.0 sites are static. Their content remains the same and it cannot be improved by their visitors (Ullrich, 2008).

The advent of Web 2.0 has transformed the user from a consumer to an active creator who can not only use but also create, share and reuse digital resources. Web 2.0, by definition, allows the publication of information either by individuals or by groups. Web 2.0 sites are partially or even fully constructed by the contribution of the users. Text, video, music and generally context of any type can be uploaded by everyone, justifying the original vision of Tim Berners-Lee, the inventor of Web, of a “read-write-Web” (Ullrich, 2008). Web 2.0 applications soon attracted the educational community, as they keep up with modern educational theories. The adoption of Web 2.0 applications in the learning process imposed terms such as E-Learning 2.0, University 2.0, Curriculum 2.0, Pedagogy 2.0 etc. (McLoughlin & Lee, 2008).

Blogs and wikis are two famous categories of Web 2.0 applications. Blogs are sites where users can discuss about a subject and upload relevant information. Wikis are collaborative applications constructed by users, who can add content, modify it or even delete it. A widely known and highly esteemed site of this architecture is the online encyclopedia Wikipedia, where the user can create articles or modify the ones that already exist. In this way, Wikipedia is enriched and improved by the creativity of the users themselves who comprise a community that works towards the achievement of the same goal (Ullrich, 2008).

In the last decade, social network communities, which are supported by Web 2.0 technology, became really popular. Each member of these communities maintains a personal space where he/she communicates online with other members of the community, shares feelings, informations, files etc. (Safran, Helic, & Gütl, 2007).

Social networks like Facebook, MySpace and Twitter can enhance the learning procedure as they allow learners to be members of a community, where they can learn from each other. The interconnection of users is of great importance, since the social interaction is highlighted by modern learning theories as an important part of the learning procedure. Social networking sites facilitate students' working in groups, making comments, discussing and interplaying.

2. Learning theories, Web 2.0 applications and social networks

Learning can be achieved through traditional teaching methods in educational institutions where educators try to pass knowledge on to the students. Modern learning theories support that knowledge is not obtained only in the organized environment of a classroom. On the contrary, learning can be seen as a social activity. People interact, share information with each other and, thus, construct their personality and acquire knowledge (McLoughlin & Lee, 2008). So, we could say that learning occurs anytime, anyplace, anywhere as long as there is interactivity with other human beings.

Several theories have been created in order to determine the best way that knowledge can be obtained. According to the traditional theory of behaviorism, the learning procedure is based on the transmission of knowledge from the educator to the student. The educator is considered to be an expert on the subject he/she teaches. He/she is committed to pass information on to the student following a predefined curriculum. He/she constructs learning materials that are provided to the students in a strictly structured environment. The participation of the students is limited to the absorption of the knowledge provided and the ability to retrieve it when it is asked.

Web 1.0 applications follow the principles of behaviorism and, thus, they have been widely used to support traditional learning and make it more efficient. Teachers could use web sites to upload presentations, tests, videos etc. in order to enrich the process of learning. Students could access web pages and deliver assignments based on the

material provided by the teacher, who would later evaluate them. Although, students did not have the opportunity to participate in the creation of learning materials and could not interact with the teacher nor with each other (Ullrich, 2008).

Web 2.0 applications follow the principles of modern educational theories such as constructivism, situated learning and sociocultural learning theories. They have brought revolution to education as students are able to contribute in the learning objects' construction. Students possess an active and significant role in the educational procedure. They are no longer simple consumers but active creators too. They are not isolated in the strictly constructed environment of the classroom any more. In fact, the presence of an authorized instructor is no longer necessary. Adult learning and distance learning are both enhanced by Web 2.0 applications which can also be used in traditional schooling (McLoughlin & Lee, 2008; Selwyn, 2007).

3. *Benefits*

The use of Facebook can meliorate academic outcomes and can be transformed to an effective tool for the benefit of successful learning. Educational institutions can presume upon the popularity of social media among students and manage to attract and retain students by approaching them via technologies that have become part of their lives (Mazer, Murphy, & Simonds, 2007).

Due to time constraints, students' social life is limited. Facebook is a comfortable way for them to communicate with each other and establish relationships that could facilitate personal development and educational outcomes (Mazer, Murphy, & Simonds, 2007). Via Facebook they develop social and communicative skills that could ease cooperation in projects. While they are exposed to informal learning, they become creative by generating, sharing and modifying content so as to satisfy their educational needs (Junco, 2012; McLoughlin & Lee, 2008).

Many teachers stand for the use of Facebook as a means to distribute educational material and to interconnect with their students. Students might see the use of Facebook by teachers as an effort to establish positive and substantial communication with them. This could lead to the improvement of the relationships between teachers and students and consequently meliorate student outcomes (Mazer, Murphy, & Simonds, 2007).

Teachers might prefer social networking sites instead of static web pages in order to avoid restrictions in communication with their students. It is common that administrators in educational institutions check the content of web pages of faculty in order to maintain the reputation of the institution at a high level. Thus, on teachers' typical webpages the uploaded content is strictly related to educational activities while the interaction is extremely limited. This kind of communication is not comfortable at all

and does not enhance the relationship between students and teachers (Mazer, Murphy, & Simonds, 2007).

On the contrary, Facebook can establish informal but effective communication between them. The self-disclosure of the teacher via Facebook could have positive effects to students. Teachers are facilitated to come closer to their students and thus to adjust the educational procedure accordingly. The increase of communication hours between students and teachers while on Facebook is pleasantly accepted by the students.

It can be said that the use of Facebook as an educational tool could increase motivation, improve classroom climate, strengthen participation and, thus, meliorate educational outcomes. On the other hand, it has to be used very carefully as it hides hazards that could harm the credibility and the reputation of the teacher (Ullrich, 2008).

Criticism by students regarding the way the lesson is realized in the traditional classroom could enlighten an open-minded teacher in order for him/her to regulate and improve the teaching experience, accordingly.

Web 2.0 applications and social networks are not only useful educational tools but also research tools that can be used to explore possible ways to improve the educational experience for both teachers and students.

4. Concerns

Young people all over the world have massively embraced Facebook. Recent researches have shown that most of the students that are members of the Facebook community don't feel that their privacy is violated by educators who support the educational use of social media. Yet, there is a percent that do not appreciate the idea of mixing up their personal activities with their educational engagements. The use of Facebook by educators as an educative tool could be interpreted as an attempt of intrusion into private life of students, who might want a clear distinction between the harness of technology for amusement and for educational purposes (Mazer, Murphy, & Simonds, 2007; Selwyn, 2007).

But, even if students were completely ready to accept modern approaches that encounter Facebook as an educational tool, many educators would not correspond to the demands of such a big step. Some of them do not feel comfortable in embodying the use of Facebook in educational activities. In fact, many educators disapprove of the use of Facebook as they might be annoyed by the irrelevant use of the mean by uninterested or bored students. Also, one should not overlook the fact that some educators, especially the older ones, have not yet familiarized themselves with contemporary technological achievements. The use of social networks as an educational tool would cause additional workload that they might not be able to handle.

On the other hand, educators that choose self-disclosure on online communities as a method to approach their students, have to regulate the amount and the kind of personal data they publish. The controlled environment of the classroom and the face-to-face communication that it provides, is a safe territory for a teacher to self-disclosure. Although, self-disclosure on social networks like Facebook can cause unwelcome consequences if the posted information is not carefully selected. Students do not seem to appreciate inappropriate information revealed by their teachers. They want their teachers to maintain a high level of professionalism (Mazer, Murphy, & Simonds, 2007).

Additionally, the use of Facebook by children and adolescents exposes them to several risks such as cyberbullying, sexual molestation, disclosure of sensitive personal data, interaction with strangers met online. It is questionable if all young people have or can even develop the skills to avoid unpleased situations derived by the use of social networks (Selwyn, 2007).

The incorporation of social networking techniques in education demands the mature use by self-motivated students. The participation of uninterested students in such communities could imply undesirable distractions and divergence from upgrading the educational experience. It is a fact that a user's "wall" is exposed to any kind of messages, even insulting ones, that friends or strangers can post. In unrestricted environments such as the ones that Web 2.0 applications have, distractions could be caused not only by inappropriate and offending posts, but also by jokes and teasing that bored or immature students might do (Mazer, Murphy, & Simonds, 2007).

The huge amount of available resources of questionable value that can be disseminated via social networks could potentially be a factor of disorientation. The cognitive overload that could be derived by accessing too many resources, could exhaust and discourage students. Students have to develop the skill of self-regulating the educational procedure, which is a goal not easily achieved (Junco, 2012; Ullrich, 2008).

Plagiarism is another matter that has to be mentioned. It is a common technique to reuse work that is available online. This is not a bad thing to do. But, it is unethical and illegal to pretend that the copied work is original. Many users of Web 2.0 applications, especially the younger ones, are unaware of license issues and copyright restrictions. In order to front and eliminate this phenomenon, several software applications have been developed that can detect plagiarism. Many educational institutions use these kind of applications in order to prevent students from such habits (Ullrich, 2008).

It is obvious that students who wants to be active members of a social network community such as Facebook, have to possess a computer. An Internet connection is also required. Unfortunately, students that cannot afford to buy a computer or do not have Internet access are automatically excluded of these kind of communities.

5. The potential use of Facebook as a Learning Management System

The concept of Learning Management Systems (LMSs) is to facilitate the provision of synchronous and asynchronous e-learning services that several educational institutions offer. The benefits of an LMS is the promotion of interaction between students and teachers and the encouragement of students enrollment. The learning experience is upgraded from content-based to process-based (Vogel & Klassen, 2001). Learning leaves behind its passive nature and turns to be active.

Its pedagogical and social features, together with its technological affordance allow Facebook to be used as an LMS. Especially small schools and institutions that want to run an LMS but cannot afford expensive commercial solutions such as Blackboard, can use Facebook in order to share resources, organize educational activities and courses, forward announcements and support online collaboration. Apart from the commercial software applications that can be used as LMSs, there are several solutions that are available free of cost to users such as Moodle and Edmodo, which nowadays are really popular among the educational communities. Nevertheless, the idea of using Facebook as an LMS has several advantages against other solutions. The most important one is the daily use of Facebook by many students. This fact can obviously ease the on time dissemination of educational information. Additionally, students are familiar with the functionality of Facebook, which leads them to use it as an LMS from the very first beginning of its establishment in an institution. Recent researches designate that younger students tend to accept Facebook as an LMS tool, unlike the senior ones who are skeptical (Wang et al., 2012).

6. Greek reality

The risks that come together with the use of social networks, have led the Ministry of Education to forbid the access into social networks to primary schools and allow their supervised use to secondary schools. At this point, it must be clarified that secondary education in Greece is structured into three different stages. Firstly, it supports “Gymnasio”, which provides a three-year compulsory education and pupils attend it right after Primary School. After Gymnasio, pupils have to decide either to attend “Lykeio”, which lasts three more years and is mainly academically oriented, or Vocational Education. Thus, in Gymnasio, Lykeio and Vocational Schools, social networks can be used in order to facilitate the teaching of Informatics or other Sciences. Teachers are responsible for carefully attending the way social networks are used by the pupils. This fact could potentially discourage teachers to embody social networks into courses, as it requires much time, effort and careful attention. Additionally, if a teacher decides to use social networks during a course, then the course has to take place in a computer laboratory because mobile phones and devices of any kind, such as tablets, that have editing software of image or/and sound are forbidden to be car-

ried by students at schools, according to the ministerial decision 132328/Γ2/07-12-2006. In this way, several applications of high educational value are excluded from classes. Moreover, computer laboratories have to satisfy primarily the requirements of the courses of Informatics. Hence, the hours available to the classes of other sciences are extremely limited and therefore teachers are discouraged to use information and communication technology (ICT) as an educational tool.

7. The survey and the results

The objective of the survey was to find the percentage of Secondary Schools in the prefecture of Heraklion that have a Facebook account and the way they use it. Due to the official website of the Management of Secondary Schools in Heraklion (<http://dide.ira.sch.gr/>), there are 51 Gymnasia, 38 Lykeia and 16 Vocational and Technical Schools in the prefecture in question. The search of their Facebook accounts took place during the first ten days of August 2014.

It is examined if secondary schools have Facebook accounts (Table 1). The survey also focuses on the potential differentiation between country and city schools. Furthermore, it investigates the probable diversity between Gymnasia, Lykeia and Vocational Schools regarding the use of school's Facebook account. It was emerged that only 28% of the schools have a Facebook account and 32% do not. It is notable that another 40% of the schools have created a Facebook account, but have never used it. The gap that exists regarding the use of Facebook between country and city schools is also worth mentioning. In the city of Heraklion, almost half of the schools (48%) have a Facebook account and only a 15% have not. Yet, there is a significant number of schools (37%) that have an account that has never been used. On the other hand, only 8% of country schools have an account and almost half of the schools do not. Still, 43% of country schools have an account that has never been used. According the differentiation of the use of Facebook among Gymnasia, Lykeia and Vocational schools, Gymnasia in the city have the higher percentage to demonstrate.

Another goal was to discover the percentage of accounts that are active. The author defines as active, accounts that had posts at least three months before the research took place. The results showed that only 12 schools have active accounts, which is the 11.4% of the secondary schools in the prefecture of Heraklion.

Table 1. *The possession of Facebook (fb) accounts by Secondary Schools in the prefecture of Heraklion, Crete.*

		Schools that have a fb account.	Schools that do not have a fb account.	Schools that have a fb account that has never been used.
Gymnasia	City	13	5	4
	Country	1	20	8

Lykeia	City	8	1	9
	Country	2	5	13
Vocational schools	City	4	2	6
	Country	1	1	2
Total results	City schools	25	8	19
	Country schools	4	26	23
	Sum	29	34	42

Finally, the way that schools use their Facebook accounts was examined. None of them used its account so as to enrich the educational procedure, even though in two cases the account was used by the school in order to inform students about the program of the institution and its potential changes. Mainly, it was used in order to upload information about school or social activities, matters that interest pupils (university entrance exams, applications, etc.), interests of teenagers (nutrition, entertainment, etc.). In almost all cases, photos and videos of students were uploaded on the account's wall and in two cases the photos were completely inappropriate.

8. Discussion

The research showed that in the prefecture of Heraklion, Facebook is used only by a small portion of secondary schools. The way it is used does not offer to schools the benefits of an LMS system, with the exception of the two schools that used it for the announcement of scheduled activities. Nevertheless, it was confirmed that in the prefecture of Heraklion e-learning and Facebook are not interrelated, at least in the case of secondary schools. But, in many cases the kinds of posts that were observed on accounts' walls can definitely be used as a tool for the self-evaluation of schools.

It was rather disappointing to reveal cases that there are schools that either do not know the inappropriate contents of their account's wall or they just do not react. It is obvious that a Facebook account that seems to belong to a school should be supervised by the school in order to prevent unlikely posts which, consequently, damage to the reputation of the institution. It was also observed that all the accounts that were created but never used had "likes", in many cases more than 100. This could lead us to the conclusion that the members of these school communities welcome the advent of Facebook in their lives, but they are not committed to support the project, which demands time and responsibility.

Finally, the gap between city and country schools was remarkable. It is obvious that this finding demands further investigation. Although, it has to be mentioned that the staff of the schools in the country are mainly teachers who live in the city and every day have to travel to the village where they work. This extra tiredness together with the fact that probably they are not emotionally connected to the school, which may

differ from year to year, discourage them from occupying themselves with any further activities except for the compulsory ones.

9. Limitations and future work

The survey does not examine the reasons that have affected the formation of the existing reality. The author intends to extend the present research using questionnaires that will shed light on the reasons that a large number of schools, especially in the county, do not have a Facebook account or, if they do have, they do not use it. For this purpose, different questionnaires could be constructed depending on the target group (pupils, teachers, directors and parents). Structured interviews could also be used to a representative part of the research sample.

It also could be investigated if schools run a Learning Management System, the awareness of teachers and directors of the purposes and the potential benefits of several LMSs and the reason that Facebook is not used as an LMS.

10. Conclusions

Digital revolution has imposed changes in many fields of contemporary life and, consequently, in the learning procedure too. Web 2.0 applications can meliorate educational experience for both students and teachers. Nevertheless, several risks are also introduced that must be seriously taken into consideration and, unfortunately, influence negatively the diffusion of the use of social networks in the learning process.

References

- Junco, R. (2012). The relationship between frequency of Facebook use, participation in Facebook activities, and student engagement. *Computers & Education*, 58(1), 162-171.
- Mazer, J. P., Murphy, R. E., & Simonds, C. J. (2007). I'll see you on "Facebook": The effects of computer-mediated teacher self-disclosure on student motivation, affective learning, and classroom climate. *Communication Education*, 56(1), 1-17.
- McLoughlin, C., & Lee, M. J. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era. In *ICT: Providing choices for learners and learning. Proceedings ascilite Singapore 2007* (pp. 664-675).
- McLoughlin, C., & Lee, M. J. (2008). Mapping the digital terrain: New media and social software as catalysts for pedagogical change. *Ascilite Melbourne*.

- Safran, C., Helic, D., & Gütl, C. (2007). E-Learning practices and Web 2.0. In *Proceedings of the International Conference of Interactive computer aided learning'ICL2007: EPortfolio and Quality in e-Learning*.
- Selwyn, N. (2007). Web 2.0 applications as alternative environments for informal learning-a critical review. In *Paper for CERI-KERIS International Expert Meeting on ICT and Educational Performance* (pp. 16-17).
- Ullrich, C., Borau, K., Luo, H., Tan, X., Shen, L., & Shen, R. (2008). Why web 2.0 is good for learning and for research: principles and prototypes. In *Proceedings of the 17th international conference on World Wide Web* (pp. 705-714). ACM.
- Vogel, D. & Klassen, J. (2001). Technology-supported learning: status, issues and trends. *Journal of Computer Assisted Learning*, 17, 2, 104–114.
- Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British Journal of Educational Technology*, 43(3), 428-438.

Περίληψη

Την τελευταία δεκαετία, το φαινόμενο της ψηφιακής κοινωνικής δικτύωσης έχει εξαπλωθεί σε ολόκληρο τον κόσμο. Προσπαθώντας να περιγράψουμε αυτού του είδους τα κοινωνικά δίκτυα, θα μπορούσαμε να πούμε ότι πρόκειται για ψηφιακά διαδραστικά περιβάλλοντα, όπου η αυτοέκφραση ενθαρρύνεται ισχυρά. Άνθρωποι σε όλο τον κόσμο έχουν αγκαλιάσει το Facebook, από τότε που έκανε την εμφάνισή του στις 4 Φεβρουαρίου του 2004. Η ενσωμάτωση Web 2.0 εφαρμογών όπως το Facebook στην εκπαίδευση και τα πιθανά πλεονεκτήματα και μειονεκτήματα τέτοιου είδους μοντέρνων εκπαιδευτικών τεχνικών, αποτελούν αντικείμενο μελέτης για πολλούς επιστήμονες διαφορετικών ειδικοτήτων σε ολόκληρο τον κόσμο. Στην παρούσα μελέτη, θα εξεταστεί η χρήση του Facebook στα σχολεία της δευτεροβάθμιας εκπαίδευσης στο νομό Ηρακλείου στην Κρήτη.

Λέξεις κλειδιά: Facebook, πλεονεκτήματα, κίνδυνοι, Σύστημα Διαχείρισης Μάθησης.