

The use of Facebook and Social Networks to improve Education

El uso de Facebook y de las redes sociales para mejorar la educación

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Fecha de recepción: 20-10-2014

Fecha de aceptación: 5-02-2015

Abstract: The development of new information technologies, and specially the evolution of social networks, is affecting the new educational framework. Understanding the process is crucial for educational organizations, since it involves the creation and possible use of new opportunities, and the development of processes to enhance learning and collaboration. This paper considers the possibilities of these processes for improving teaching methods which may be applied to the university education of engineers. Specifically, the paper focuses on the new possibilities of using social media to promote enhanced learning, using the case of Facebook. The paper analyzes diverse possibilities of this social network, different applications and services for teachers and students, and their possible use in teaching. The study concentrates on the use of Facebook to improve the creation and evaluation of assignments in marketing and management courses for engineers. The paper also provides some suggestions and future recommendations.

Keywords: Facebook, Social Networks, Education.

Resumen: El nuevo marco educativo está afectado por el desarrollo de las nuevas tecnologías de la información y las redes sociales. Este artículo analiza cómo aplicar los nuevos métodos para la educación universitaria, concentrándose en el uso de Facebook para mejorar la creación y evaluación de tareas en cursos de Marketing y Gestión en Ingeniería. En particular, remarca las posibilidades del uso de las redes sociales para promover el aprendizaje, utilizando el caso de Facebook, analizando sus posibilidades, aplicaciones y servicios para los profesores y alumnos, y su posible uso en la enseñanza. El documento ofrece también algunas sugerencias y recomendaciones futuras.

Palabras clave: Facebook, Redes Sociales, Educación, Ingenieros.

1. New Educational Framework

Nowadays, the educational environment demands the application of major changes in the teaching culture and the ways of teaching and learning. These changes are especially required due to the evolution of new educational frameworks, new innovations in our environment, and the behaviour of new students, who behave and conceive the learning process in a very different way. The implementation of new approaches is crucial to the improvement of the learning process, and specifically

in the context of engineering education in universities. Today, there are special requirements for the use of educational strategies based on active methodologies, where the active role and participation of the students, the importance of “learning to learn” and the ability of working together are essential. They are fundamental axes for change, their development becoming a priority in training plans, given their importance for generating generic competences and personal and professional skills.

Additionally, new educational models are largely af-

fected by the development of new technologies, and especially by the use of virtual communities and social networks (Garrigós et al., 2013). This is vital for educational organizations, since it involves the creation and possible use of new opportunities to develop managerial processes of collaboration, information and communication (Stewart, 2007).

We also have to pay special attention to the development of Web 3.0 (Garrigós et al., 2012a), the relevance of collaborative work, and the creation of social knowledge, which involves and encourages the increased inclusion and use of the Internet as an essential learning-teaching tool. Moreover, they also denote a deep change in traditional methods of teaching and learning. The developments of the previous Web 2.0 consider human communication as a central point, and also the support for social interaction and participation. This is realized through combining various traditional functions (information, sharing and updating data, email, discussion groups, media, etc.), as is the case of social networking platforms, or by employing new forms of innovation and communication (virtual collaboration spaces, wikis, blogs, mash-ups, etc.), which mainly support interaction and improve communication between their members (Garrigós et al., 2011). As Garrigós et al., (2012a, p. 1884) point out; strategically, the most important change in the Web 3.0 is the importance of meaning in the new environment. Networks are essential tools to discover what is happening right now, what others are doing, or even to discover technological trends, innovations and expert reviews. They are also vital to create, influence and participate in discussions about new innovations or new tools. Social networks enhance the creation and exchange of knowledge and learning; being sources of creativity and innovation, as the numerous members of the network add value to others from information provided by them.

In addition, the behaviour of new students, and the way they confront the learning process is completely different to what it was in previous generations. According to Lantz-Andersson et al. (2013:293) "Young people's interaction online is rapidly increasing, which enables new spaces for communication". Nevertheless, according to this author "the impact on learning, however, is not yet acknowledged in education". Moreover, we can point that and the analysis and use of new technological improvements and applications in education is still reduced.

In order to fill these gaps, this paper explores the importance of social networks in improving learning. The paper focuses especially on the diverse uses of Facebook for educational purposes, and specifically relates a methodology which stresses its importance for the

improvement and evaluation of assignments.

2. Social Networks

Of all the new innovations in ITCs, we should highlight the broad development of virtual social networks. According to Monsonriu (2008) and Garcia and Tejera (2013, p. 461), JA Bañes in 1954 coined the term "social network" to describe "a social structure of nodes which are generally individuals or organizations. A social network represents the relationships, information flow / knowledge and any other type of exchange between people, groups, organizations, and computers that make it up". Boyd and Ellison (2007, p211) defined them as web-based services that permit individuals to (1) build a public or semi-public profile within a bounded system, (2) to articulate a list of other users with whom they share a connection, and (3) to view and traverse their list of connections and those made by others within the system. Garcia and Tejera (2013) stress that they all have one common thing: to be the media of interaction between the diverse people who are part of it.

Social networks mean different things in different contexts and different uses (Boyd and Ellison, 2007; Van Zyl, 2009). De Haro (2008) stresses the diversity of types of relations: Friendship, training, financial exchange, work, hobbies, etc., their impact is very comprehensive and it is increasingly widespread, with activities ranging from economic and marketing to social and educational (Chiu et al., 2006, p. 1872). Hence, we could talk about business networks, professional communities, ecommerce platforms, networks with customers, suppliers, friends, or, in our field, about research networks, education networks, etc.

Specifically, as Garrigos et al (2012a) state, Social networks are essential for the creation and sharing of knowledge and learning. As Lin and Hsueh (2006) highlight, in the Internet age, in order to shorten the learning cycle, an individual can exploit the experience of others to expand their own experiences, which can be accomplished by sharing explicit knowledge on the Internet. Nowadays, there are social networks whose initial focus was precisely on improving the interaction between students from high school (i.e. Classmates.com, SchülerVZ, Tuenti), college students and young academics (i.e. Facebook or StudiVZ), other leisure social networks (i.e. Twitter, Friendser or Cyworld.com), or even more professional networks (i.e. Xing, LinkedIn) (Garrigós et al., 2011, 2012a, b, 2013). Some authors stress the relevance of other social networks in education such as Moodle. However, among them all, Facebook is currently the most widely used social network

in the world. In addition, Facebook is one of the most powerful social networks (Tejera and García, 2013).

3. Facebook

Facebook is currently considered to be the most popular platform for online social networking between university students (Kabilan et al., 2010:179). Founded in Harvard University in 2006 for purely academic reasons (the initial aim was to have photographs of students in Internet for easy recognition), Facebook soon became a large network with many functions, such as sending messages through mobiles, the emergence of pages for businesses and individuals, the generation of searches, use of chats... At present it is trying to expand its spectrum of use in smart phones, mainly after buying Whatsapp. The support of Facebook by previous mobile devices (Shiu et al., 2010:60), and now with the inclusion of Whatsapp, is a definite advantage of using Facebook for education purposes.

According to Shiu et al., (2010, p.60), "Facebook is a social networking web application that supports the following features, which are for education purposes" (ibid, 60-61): 1) Any Internet user with a valid email address is permitted to register; 2) Its use is free of charge; 3) It supports user-defined groups (public or private). In this vein, it enables any student to join the page to access the teaching materials and be notified about any update in the page; 4) It enables users to create Facebook pages for particular organizations; 5) It supports the control of privacy in terms of items posted, users and groups; 6) It supports user notifications of all updates of items, users and groups via emails; 7) It supports user and group level photo albums; 8) It supports discussions with respect to a message, a photo, an article...; 9) It supports internal emails between any two Facebook users, or the sending of emails to all users in a group; 10) It supports events and is possible to create events for a group; 11) A Facebook user's main page shows all the updates of friends, the groups joined, and all the upcoming events; 12) Facebook supports real-time chatting through the web browser; 13) Software developers can develop software to be executed within the Facebook webpage, so it enables any users to create a survey, questionnaire or quiz easily; 14) Applications for file sharing allow users to share their own documents with any other users; 15) All operations by any Facebook user are logged with time stamps and can be traced.

In addition, we can add that: 16) It provides the best applications in the app store, which also include games useful for educational purposes; 17) it permits searching for and adding friends and experts on some topics;

18) It permits interactions between people that share similar interests, and the use of forums in the groups where participants can add photos, videos, messages...; 19) groups can have their own separate rules, and if this is not true, members can demand to close the group; 20) each person can have their particular space, or can create diverse spaces with their profile, and their friends have the possibility of writing messages, updating photos, videos...

3.1. Educational Platforms of Facebook

Some Facebook applications are educational. For instance (Shiu et al., 2010:61; www.collegedegree.com, 2014): 1) In Facebook, students have applications to choose their educational centre (i.e. SkoolPool), courses, search university reviews or find classmates (i.e. Courses). 2) Other apps help students to find out what other students think of teachers before registering for their class (i.e. Rate my professors). 3) There are applications that can make it easy to obtain and gather information to create reports, dissertations, etc, (i.e. Doresearch4me), to trade textbooks (e.g. SwapRoll), to find Wikipedia articles (i.e. wikiseeksearch), to do general research (i.e. WorldCat) or even to retrieve full text research papers (i.e. JSTOR Search). 4) Other applications permit contact between group members, which can be important for group work (i.e. Study Group), or let students connect with other students or tutors to help with their assignments (i.e. Get Homework help). 5) The creation of material is also allowed, as some apps permit sharing notes with classmates (i.e. Notecentric, Classnotes), allowing lecturers to create videos for students to share (i.e. WebinariaScreenCastRecorder), or the creation of slides and diverse applications to send to students (i.e. SlideShare). 6) Other applications permit the sharing of other materials, such as books between students, providing opinions about them (i.e. Books iRead), or permit lecturers to loan and share books with students, in addition to creating study tags (i.e. BookTag), or other people to share diverse things (i.e. CourseFeed). 7) Some applications, apart from sharing, keep the documents online (i.e. Zoho Online Office), or store and retrieve documents on Facebook (i.e. Files). 8) Other apps permit the distribution of formulas and solutions (i.e. mathematical formulas), to explain concepts (i.e. HeyMaths) or to improve the learning process (i.e. with the creation of flash cards, Flashcards). 9) According to Shiu et al (2010:59), one of its main characteristics is that Facebook provides rich features for organizing relationships: with Facebook, "people do not only communicate with others, but also organize all kinds of interactions between them". In addition, some applications in Facebook allow students and lecturers to organize their lives in school (notes,

calendar, works, assignments) (i.e. Notely, Calendar), or to prioritize them (i.e. To-Do list)

In general, following Aydin, (2012, p,1101) "Facebook can be used as an educational environment, as it improves classroom practices and student involvement". Accordingly, it can be used in various teaching and learning contexts, and research results indicate that Facebook is an effective tool in social learning, elearning, environmental learning, business, art, and chemistry education. However, as Aydin (2012:1102) postulated "more practices and research are needed in other fields of education". Our work tries to fill this gap and also relates its importance to learning in the context of education for engineers at university level.

3.2. Use of Social Networks and Especially Facebook to Improve the Assignments of Engineering Students at University Level

In addition to the previously related uses, our experience in the classroom reveals that students can use social networks to improve their assignments before handing them in to the lecturers. In this vein, we have developed a technique where the students can use the combination of their personal social networks, together with the use of rubrics also produced by them in order to evaluate their assignments. The technique has been applied in marketing and management courses in engineering degrees.

Summarizing, the technique consists of the lecturer first setting an assignment for the students, and then telling them to develop it. In addition, the lecturer also suggests developing rubrics, in order to evaluate their own assignments. This final evaluation will be carried by the lecturer, but also by other classmates, at the end of the process. In addition, the process can even be evaluated, in a final project, by other lecturers or experts. In order to improve the task, we also promote students' use of social networks, and specially Facebook, in order to get an external pre-evaluation of their assignment. The process is similar to the one followed by companies like TripAdvisor, but in this case, the object of the evaluation is the students' specific assignment, evaluated with the rubric created for this purpose.

Obviously, this is very important, as the students can see the weaknesses in their assignments. After this evaluation in the social networks, the students have the opportunity to improve their assignments, and also improve the formulation of their own rubrics, before submitting them for evaluation in the classroom. Our experience has been very useful. For instance, we

have realized that the average marks and quality of the assignments following this technique have increased by more than 20%. In addition, we also obtained other results:

- First of all, the students apprehended some of the problems in their assignments, realizing their weaknesses, pointed out not only by the lecturer, but also by their friends, or external sources.
- Secondly, the students appreciated specific problems with their general way of working and producing assignments.
- The students also recognized the diverse elements which are considered in the evaluation process. They were conscious of the importance of the evaluation, so they considered the possible steps that they should take into account. Students realized the importance of considering the perspective of the evaluator more than the perspective of the maker, when producing their works. This opens up the view point of the students and their perspectives when they plan the strategy for the creation of assignments.
- Finally, students were made aware of diverse topics which they did not take into account and that were suggested by their contacts in their social networks, for inclusion in their assignments. In this vein some students not only reformulated the assignments but also reconsidered their rubrics.

Our results agree with those of previous studies. For instance, following Maguth et al. (2010), students using technology to access and analyze information, communicate, and showcase their learning were successful, not only in their research pursuits, but also in the production and presentation of research results. Kavilan (2010) agrees and recognizes the importance of the use of Facebook by the younger generations, as students are motivated to be involved in discussions in Facebook and they grasped a better understanding of the theoretical principles, apart from developing better ideas as a group compared to when they read individually. Following Kavilan (2010), participating in online learning activities such as discussions in online forums and searching for information also provides students with the opportunity to acquire many practical online skills in a more incidental, informal manner. This is essential because incidental learning contributes to unintentional learning which results from other activities, regardless of whether those activities are academic or non-academic. Hence Facebook opens up broad and exciting new worlds of learning for students, and also for educators (Couros, 2008, Aydin, 2012).

4. Facebook limitations, and other platforms in education. The relevance of Moodle

Although this paper concentrates on Facebook, this platform has some limitations. For instance, among the main limitations of Facebook, Wang et al (2012) stress that, as a management learning system, it does not support other format files to be unloaded directly, the discussions are not organized in a threaded structure, and students do not feel safe and comfortable as their privacy can be revealed.

In addition, we could add other limitations. Among them: 1) Students within the webpage can be distracted by many things; they might waste time on other matters and not concentrate on the specific tasks of the particular group; 2) students can add unnecessary stuff in the group; in order to avoid this, they should focus on shorter and meaningful comments for the group; 3) the administrator of the group needs to revise his account in order to conserve his data privately; 4) everything gone up or what is shared on Facebook immediately belongs to the platform, so one must carefully revise all data uploaded; 5) students can become overwhelmed by the use of Facebook outside the classroom sessions, so the lecturer must be careful when sending tasks; 6) the fact of being in front of the computer, and the possibility of entering in other websites, can make students deviate from the tasks they have to perform; 7) the information found in Facebook often is not true, and many times incorrect and quite unreliable. It is necessary to know where to find information and what is the right for uploading.

However, some of these problems are common with the use of other social media, which also share some of the advantages of Facebook. However there are some authors that posit for the advantages of other social media such as Moodle, as they are more generalized in the educational arena.

For instance by comparing both platforms, DeSchryver et al (2009) demonstrate the educational value of adopting Social Network systems such as Facebook and Moodle in educational settings. Specifically they analyzed the effect of using these social network sites for discussions in an online course. They studied student perceptions of social presence and the frequency and length of their discussion interactions. However, comparing them, they did not find differences in their measures.

Moreover, Petrovic et al (2013) compared Facebook and Moodle as educational tools and, although they

posited that Moodle is probably the most commonly used platform for making online academic courses, they also founded advantages and disadvantages of both platforms, although they can complement each other. For instance they state that Facebook allows students to access information quickly and share it with their peers, and it is a fun and interactive medium for studying. Opposite, Moodle provides students with materials in a non-distracting way, making them feel safer with their personal data and with the information they are getting. However, "Moodle wouldn't be as successful without the students sharing information on Facebook (ibid, p.420).

Furthermore, Deng and Tavares (2013) looked into the reasons for a group of student teachers' engagement with discussion on Facebook compared to their lack of enthusiasm in joining the forums on Moodle. They explained how the existing habits of using Facebook, the sense of ownership and the social presence in their online community affected their stronger engagement with Facebook, in contrast to Moodle, that is affected negatively as not being a user-friendly interface, having a lower activity rate, and being considered too formal and academic.

Nevertheless, such as Petrovic et al (2013) state, we posit for a symbiosis between Facebook, Moodle, other social networks, and traditional classroom learning, as they can complement each other.

5. Conclusions

This work has analyzed the use of social networks to improve the education process. Specifically, the paper has focused on the use of Facebook to improve the production and evaluation of assignments in marketing and management courses for engineering students at university level. The results show diverse impacts on the improvement of learning, both in a contextual point of view of a specific matter, and in improving the general learning process of students.

Facebook has been underused within educational contexts, so more research and practice is necessary (Dreher et al. 2009, Aydin, 2012). In particular, the use of Facebook for engineering education is testimonial. Heiberger and Harper (2008) present examples and recommendations for the use of Facebook to increase university student involvement, while Ayding (2012) explores previous studies, analyzing for instance the advantages and problems of the use of Facebook, the diverse effects of its use in culture and the education environment, and also the relationship between Facebook and subject variables. From our point of view,

researchers, educators and practitioners should show more interest in the use of Facebook within educational contexts. As Eberhardt (2007) and Aydin (2012) suggest, educators could develop approaches and strategies to help students use their networking behaviour to enhance their learning and development. Our work has explained its possible use for the production and evaluation of assignments.

The paper has analyzed also some of the disadvantage of Facebook, stressing also the advantages of other social media such as Moodle, which could complement it. We have to recognize, that the use of social media in education has also some limitations, and these limitations increase if we only concentrate in a specific platform such as Facebook. We hope this paper can open new additional theoretical and empirical analysis to stress these points. Other possible uses of Facebook, and a more deep comparison with other platforms can be explored in further studies.

6. Acknowledgements

We are grateful for financial help from the Universitat Politècnica de València, within the program. PIME 2013-14.

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