

Online Social Networks Impact in Secondary Education

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Abstract. This paper presents and analyzes the potential uses and motivations of online social networks in education, with special emphasis on secondary education. First, we show several previous researches supporting the use of social networking as an educational tool and discuss Edmodo, an educative online social network. The work carried out during two academic years with senior students of primary and secondary schools is also analyzed. This research has allowed us to see the reality of social network use among young people and identify the challenges of its application to education environment.

Keywords: Online Social Networks, e-Learning, Secondary Education, Educative Web Tools, Collaborative Systems.

1 Introduction

Endless are the number of hours, news, energy that is now being used by the online social networks (hereafter OSN), adolescents being one of the main social groups that depend on these systems to communicate with their peer group and acquaintances. But how can it is possible to work with a tool that has many friends, messages, photos, videos! Which suppose too many distracting to the students, and would be contrary to achieve the objective sought. Some of the research considered in this paper study *Facebook* as a tool for college students with positive results. But for teenage students, is responsible enough to use the educational online social networks? Or to use these environments, the student, must be taken out from the OSNs that use commonly, and use others where there are no many elements that make the students lose concentration while they are performing their tasks.

The initial hypothesis to be validated: social networks can serve as an educational tool, acting as a motivator and enabler of social capital in education during adolescence (age range 12 to 18 years, with reference to the Spanish system, named as compulsory secondary education “E.S.O”). The paper is organized in four sections: Social networking in education, the analysis of one of the major educational OSNs, the field work which discusses the use of the OSNs by students, and it ends with conclusions and future work.

2 Social Networks within Education

This section introduces the basic concepts of the OSN, a series of research on its application in education, and the beginnings of the union of these two fields.

2.1 OnLine Social Networks

According to Danah Boyd [1], OSNs are Websites that give users a range of services based on Web technologies that allow individuals to: build a public or semi-public profile with relationships system, to have a list of other users with whom they share a connection, and finally, view and navigate through the list of users' connections with those who share a connection in the system. The shape and nomenclature of the connections listed above vary from one social network to another. What makes the OSNs unique, not because they allow users to meet others in the network, but because they make possible for users to manage and make visible their own social network. Normally connections on OSNs are between individuals who have “latent ties”, Haythornthwaite [2], and that have some offline connection. In many OSN, users are not looking to expand their network of contacts (such as LinkedIn [3]), but they communicate with people they already knew prior to their entry into this OSN.

The most widespread and used features by OSNs users are: uploading and sharing photos and videos, comments on other profiles, friends and private messages between users. Users of these sites also share a number of documents and communicate with each other.

2.2 Computer applications for learning support

Arguably, the first steps of social networks in education correspond to Moodle [4], at least in terms of the widespread use of the platform. Moodle is a project designed to support a social constructionist framework of education. It is distributed as free software (GNU). Moodle is copyrighted, but user can copy, use and modify Moodle if they agree to distribute the source code to others, without removing the original license and copyrights. The design and development of Moodle is based on an educational philosophy called "social constructionist pedagogy". Moodle

can be considered as one of the first OSN focused on education, because it has one of the OSN main features.

Some basic questions that the Web Systems share with education are: Who are the students?, What student's intentions and behaviours will be supported by the system?, and What devices will be used by students? E-Learning platforms solve these questions based on five different aspects: purpose, use, content, functionality and presentation. Based on the information taken from [5], in the following sections, Edmodo [6] is discussed.

Moreover, in [5] we found comparison of the educational and technical aspects of the main electronic learning platforms: Blackboard Academic Suite 8.0, Claroline 1.8.1, Ecollege, WebStudy Course Management System, Atutor 1.5.4, Moodle 1.9, and JoomlaLMS. They compare various aspects like: productivity, communication, participation of students, administration, content development, licensing, and the required hardware and software. Highlighting after such detailed analysis the communication and motivation as key factors in the student learning process, therefore the student should not be or feel isolated. Finally the authors sort the platforms in two types: Those that are not attractive for most users, but at the same time they are fully developed and have most of the functionality needed by teachers and students. Those that are highly attractive, but do not provide a variety of services.

3 Edmodo Analysis

This section discusses the online social network tool Edmodo [6], an educative social network. The following we describe its implemented functionality, the non-permitted and weaknesses points. Based on the presented aspects in the subsection 2.2, the purpose of this tool is the informal education, and to be used as an educational system and its contents are usually related to different subjects of the students.

3.1 Edmodo Main Features

In this sub-section we analyze the main features which are available on the Edmodo platform. It will be discussed some specific functions of communication, organization, file sharing and educational tasks.

The initial interface that the tool offers for teacher and students is very similar, but with some extra functionality in the teacher side, like: The first action offered by the tool for teachers is to create the class groups as it is required. Each group has a number of options that can be managed, if the user has a teacher role. The teacher can view the group members (students and teachers), He can archive and / or delete a group if it is necessary. From the public view, we may highlight that the teacher can decide the comments to be shared with people who are from outside of a specific group.

In terms of communication that is performed by using a board, it could be presented, by the teacher, to an entire group or as a private individual for each student. The teacher has four types of communication: (1) messages, (2) alerts, (3) assignment (or a task which can be rated later) and (4) vote. It is possible to add to each communication element: a file, a link (URL) or an existent item from the digital library. It has a section called "Who?" Where users can send messages in deferent ways to users: individual (private), students group, teachers and parents.

In the student side, the communication options are more limited than those of teacher, where they only have the option message, and they can only communicate in two ways: (1) with the entire class in public way or (2) in private way with the teacher.

Both teachers and students have access to a calendar, depending on the classes they teach, and the students to the classes to which they have joined where also they can view the deliverables or dates set by the teachers. These management features convert the Edmodo tool in a great tool for organizing and planning.

For storing and sharing files, there are two points of view in the Edmodo platform: The teacher view, where he can share folders with material for one or more of his classes. And the student view, where he has the option pack, with a space of 100 MB to store his files and / or class assignments.

Finally, from the user profile, other users can see (if they are connected to him): public activity, connections with teachers (if the user has a teacher role) their colleagues, besides seeing their school and classes that they manage or in which they participate.

3.2 Weaknesses and not allowed Features

This section describes the unpermitted or unimplemented functionalities within the platform and its weaknesses. *Studding this information is helping us in the implementation process of our own OSN tool, which we called Tweacher. Tweacher is an OSN for educational purposes whose target audience is very similar to Edmodo.* The weaknesses and the not allowed features we discover in Edmodo are:

- It has no option to send private messages between students, avoid forgetfulness, communication between students occurs globally.
- In the communication part, it has not implemented a chat tool. While, many other social networks (like Facebook, Tuenti, and Myspace) implement a kind of chat area for users.
- It does not work with photo albums and tags like other social networks. It works with generic file type, and do not allow the action of tagging them.
- It does not implement any kind of page in which the user can see the subject structure (index).
- Edmodo structure facilitates informal education; however, the order of the content of the courses and materials is not entirely clear.

- The functionality backpack, where students can save files that cannot be accessed by teachers, can be a weak point, since students could use it to save improper files.

4 Fieldwork: Using On-Line Social Networks by Students

This section presents a field study, which reflects the big use of the new technologies and social networks by high school students. Also, it highlights a set of advantages for their application in teaching. The field study is focused on Tuenti [7] and Facebook. First, we present the results obtained through an anonymous questionnaire given at three centres of the community *Castilla-La Mancha, Spain* (two secondary and one primary education centres). Next, we will discuss the main findings of this field study conducted during the last two academic years and applied over 425 students (381 secondary education and 64 of primary one).

4.1 Anonymous questionnaires on the use of social networks

We address first the results in secondary education talks (12 to 18 years, questionnaires to students from 1° to 4° of the E.S.O):

In the academic year 2009 / 2010, 282 questionnaires was carried out by students. The result was that, 88% of students use online social network Tuenti, taking into consideration that according to Spanish law it is illegal for children less than 14 years to use it. Well, the surveys were conducted at the beginning of 2010, so the students were born in 1996 and 1997 (which are 44.7% of respondents). Those are violating the terms of use of this tool, because they are minors, in particular 86.7% are registered on the social network Tuenti.

Given that 88% of the students use the Tuenti social network, from this percentage we extracted other interesting facts like: The average number of "friends" is 198.9 in the profile of each student. The average time spent connected to the Tuenti social network is 1 hour and a half per day. With regard to the social network Facebook, we have: 43.4% of respondents are registered in this social network.

We can highlight 88% of respondents who use the social network Tuenti as 61% of them are connected to the social network for more than one year and 70% have more than 140 "friends".

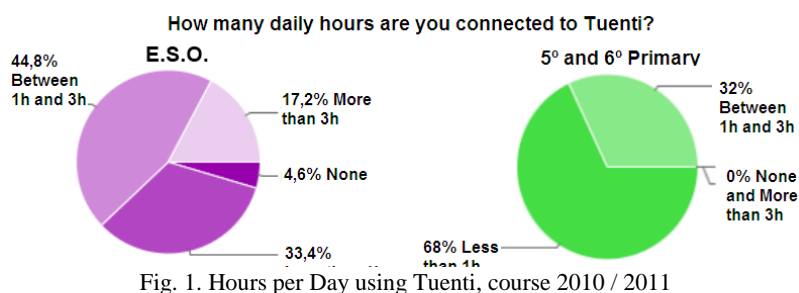


Fig. 1. Hours per Day using Tuenti, course 2010 / 2011

17.2% recognized to consume more than 3 hours use per day (Fig. 1 left.). While when we refer to harassment, the data is not worrisome since 3% have felt bullied at some point. With regard to Facebook, 63% of the students are registered on it, and the average number of friends is smaller to the average number of friends on Tuenti. The most alarming, and was not taken into consideration in the previous academic year's study, is whether the parents are concerned about what their children are doing using the OSNs (Fig. 2 left.). 55% respond positively to this question. This indicate that 45% of parents who are not interested and do not ask their children about the purpose behind using these new communication environments.

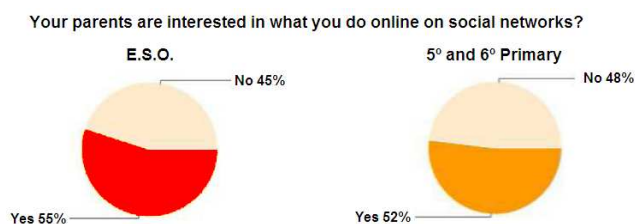


Fig. 2. Interest of parents for the use of ONSs, course 2.010/11

For primary education, the questionnaires were presented to 64 students in various lectures in 5° and 6° of the primary school, during the academic year 2011. We obtained the following results: 43.5% of students use Tuenti which suppose a high number, taking into consideration the prohibition that the Spanish authorities have with respect to this matter. On the other side, 52% of parents worry about what their children do in the OSN (Fig. 2 right), a slightly lower percentage compared to E.S.O parents. This slight difference would be probably because some of the children were not yet interested to register in OSNs. Statistics showed that 1.8% of respondents felt harassed using OSNs. And finally, we remark that the number of "friends" and hours of use per day is significantly lower than the results obtained in secondary education. Only 25% have more than 140 "friends" and 68% spend less than an hour online per day (Fig. 1 right).

We can say that, this trend of interaction through online social networks will continue in the future as the new generations make a high use of these networks because of being already an important part of their lives.

4.2 Analysis of the anonymous questionnaires results on social networks

The reason for this analysis is that, in many cases where students do not have online social networks are because of the parents' controls, and the Spanish government that does not allow access to such services for citizens less than 14 years.

After analyzing this data, we can say that it is obvious where adolescents spend their time and what habits they have. Therefore, using this tool, as an educational, by students who know in depth and make use of their free time, can raise the motivation levels with respect to certain subjects. Although the learning curve of using the educational tools will be very quick, it would not reach the common social networks' level.

Could positive academic results be obtained through online social networks? The answer is yes, demonstrated by the results of the research presented next. In [8] research the impact of individual use of these online social networks from an educational point of view. This paper takes into consideration two processes of socialization such as: social acceptance and cultural adaptation, showing that online social networks in these processes help positively influence to academic outcomes. Thereby, it demonstrated the positive influence at the university level. So, obtaining positive results at the level of secondary education is one of the objectives of this work, considering that at this age, students need more control (from parents and teachers) than that at the college age.

4.3 Edmodo in a real environment

For this study we have worked with a group of 20 students in the "information technology and communication" subject of 1 bachelor's degree, and 38 students divided into two classes of 4º E.S.O in the "computer" subject during the months of February and March 2011. With respect to 1 bachelor's degree we highlight the following: We have dedicated and skilled jobs through the platform, there have been an informal communication between student-teacher and student-student. It was also proposed sharing of current information with the rest of the group. The study has been very successful. It was offered to teachers of 1 bachelor's degree the option of working with students using Edmodo. Only 14.3% seemed interested and responded positively (a possible weakness of this type of platform, teachers who feel unprepared or interested).

We conducted a survey with students obtaining the following data: Are OSNs interesting to use for educational purposes? 68.75% answered yes, 25% No and 6.25% indifferent. Would you like to work with Edmodo in other subjects? 66.7% said yes, 33.3% indifferent and 0% No. At the end, we highlight three data: 95%

of students have participated in Edmodo, 70% actively and continuously (at least one publication a week), and 50% of students have used the platform in non-lecture hours.

The results obtained during 4^o of the E.S.O haven't being as good as 1 bachelor degree, because its use by students was not as expected and their collaboration was proved to be too far below expectations. While bachelor students add news of every kind and discuss with them mates about them in an educate way, E.S.O. students just add contents to the wall of Edmodo when the professor have asked for it. Seeing the data of the sub-section 4.1 of this article the low participation in E.S.O. students was unexpected, ¿Which is the main problem? The difference in age is just one year, E.S.O. is compulsory education while bachelor isn't, differences between social groups and their behaviour as groups ¿could be them some explanations? Te unique way to resolve this question is by doing more field-research.

As a consequence of this field-research this year five professors more are using Edmodo at their classes, even with the results of E.S.O. students want new tools during their lessons. In this process we are learning how to teach using these new platforms that the research in e-learning gives us.

4.4 Others High Schools at a click of distance

In addition to what mentioned in the previous section Edmodo work between two classes of 1 bachelor degree in two different high schools (of Castilla-La Mancha). A new Edmodo group was created and it was supervised by two teachers in charge (one of each high school) established a set of rules of good use, otherwise teachers can use the option "reader" for students with bad behaviour. The group was of 41 students in the "information technology and communication" subject of 1 bachelor's degree. They were allowed to name the group to feel unitholders. And the main use was to share news and comment on technology among students of both high schools. The high school students who had been working longer with Edmodo were more active while their counterparts from the other school they were less (with certain exceptions).

Perhaps this extra motivation of being able to interact with peers from another part of his country, was what allowed us to obtain better results with bachelor students.

5 Conclusions and Future Work

This work is a study done for the implementation of a tool similar to Edmodo, whose name is Tweacher (Twitter + Teacher). In this study, we try to cover the weaknesses found in the previous tools (sub-section 3.2) and add extra functionality to improve the teaching-learning process through such tools.

A possible future improvement could be by establishing the use of counters to warn parents and teachers about the overuse of the tool by students.

We did not analyze the parental control features available on Edmodo. It would be interesting to analyze and make a formal proposal on the possible ways of control that parents may have.

With the presented data in section four, we can say that the use of OSNs in educational environment can be positive. And for its implementation as an educational tool, it takes time and especially for its involvement by the faculty.

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