Using Facebook for Collaborative Academic Activities in Education

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Abstract. In this article we will try to use the services of Facebook, in a controlled environment, so that teachers can carry out their teaching. From the educational point of view, Facebook provides a new starting point, collaborative work, from plugins development tailored to the needs of teachers in schools. And this requires to take into account the hierarchical structure and the distribution of groups and students in the center, and, to have a system to monitor the work of the students for assessment and grading. With the work proposed here, we do not intend to create a social network, conceived as "Facebook", but including a plugin that allows the use of "Facebook" like a Learning Management System (LMS). These features would make the social network "Facebook", offer collaborative services for members of the educational community, and compete with other applications, like Google Apps Education. Moreover, being a LMS in a collaborative and education environment, facilitate the management, rating and monitoring of student activities. The justification for this system comes from the high number of students and teachers who already have an account on the social network, and they are already used to their patterns of communication and interaction. This adaptation may allow greater use of Information and Communication Technologies (ICT) and government resources that have been allocated to the project Escuela 2.0.

Keywords: Social Networks, Facebook, Educational Patterns, Educational Environments, LMS, Collaborative Educational systems.

1 Introduction

Social networks have recently been introduced in the lives of many people that were previously far from the Internet phenomenon. And, it is not uncommon to hear talks on the street about Facebook, and not necessarily among young people. The extraordinary ability to communicate and to connect people with networks has caused that a large number of people use them with very different purposes. They are used to find and engage with long ago lost friends, to discuss various subjects, all kinds of

support causes, organize meetings of friends, former classmates or to publicize meetings and conferences, through which not only it provides details about the meeting, but people can confirm their attendance or absence of the event.

For that, the educational world cannot remain oblivious to like this social phenomenon, which is changing the way of communication between people. The education system works primarily with information, so there is no sense to use transmission systems and publication of the same based on those used in the early and mid-twentieth century, without incorporating what society already is using as part of their daily lives. Education must train people to what will work in ten years, not to emulate the way that worked for last ten years. Undoubtedly the potential communication of social networks is still to be discovered and should be studied more in depth [1]. It is in these moments when they begin to create networks for educational purposes and, without doubt, in the coming months there will be interesting developments in this regard.

Social networks have become a virtual environment where many people converge. The exponential growth of social networks today have turned these sites into an interesting analysis tool to find usages, customs and origin of many users that comprise them. Some of these social networking services like Facebook, among others, are used by many universities in the world to publish their works, videos, resources and projects, to be criticized and evaluated by the community, and this become of a great support to teachers. Using this tool is increasingly common among humans; hundreds of thousands of users worldwide have experienced the use of Facebook as a tool for the development of social communities. The impact of social networks like Facebook or Twitter is growing stronger worldwide. However, to think about the role of teachers in our time, it would be possible from a contextualization: insert the teacher's role in the context of the knowledge society.

The proper use of these social networks demonstrates a variety of tools and resources that can be used to improve the instruction and communication between students, teachers, administrators and tutors support teams, thus improving by this the teaching/learning process, about which Internet has positive effects. Education in relation to new technologies should be designed as a means to assist and collaborate with the method allowing improving teaching and thereby enabling the student to obtain a meaningful learning.

In this paper we propose a new concept of using the existent services of Facebook, in the educative system, without living this, to become by this a peer communication platform which immense repositories of knowledge universally accessible and constantly updated, thanks to its inclusion in the Cloud, within the CSchool system [2]. Thus, we believe that no self-respecting educational system should do without that resource. By incorporating the classroom networks, it requires us to make changes in the organizational culture of schools and pedagogical approaches; this is done by adopting a set of educational patterns [3], which helps in merging the use of Facebook services in adequate aspect.

2   Performed Work in Schools Related to Social Networks

Originally the reason for conducting this research is an image I found on the desktop of the computer of one of my students:

- *To my question: Why do you put this wallpaper?*
- *He replied: It is what I see every day.*

From here we begin to consider the possibility of including social media, network, in educational classroom, since students are accustomed to use them in any place, and in case of school the reason is distraction and to review their personal messages. As researchers, we must pay attention to the users, and in our case they are the teachers and. It is already exists a large number of social networks being used for educational purpose, between these:

- Ning: http://www.ning.com/
- Elgg: http://elgg.com/
- Mahara: https://mahara.org/
- Uimp2.0: http://redsocial.uimp20.es/
- Google Plus for Education:
- Auula: http://www.auula.com/

Where we can perform a collaborative work in the classroom, but our intention is not to design a social network for a specific use, so why to create our own social network when we have, for example, more than 1000 million of users in Facebook, where the probability that my students have account in it is high. So our intention is to use the services of Facebook Social network for our educational purpose making it more focused to the educational process.
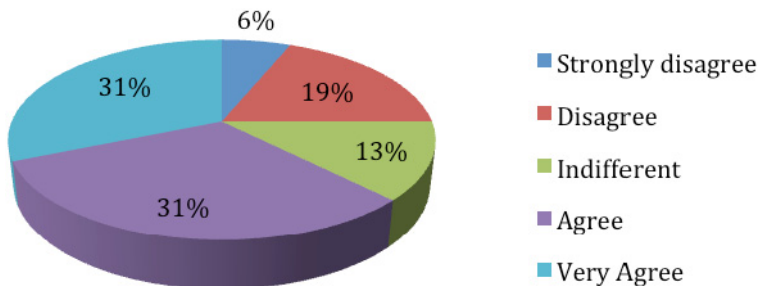

Fig. 1. Percentage of the answer of the question: Do ICTs provide flexibility in time and space, to communicate with your students

During the last academic year, 2011-2012, we conducted a set of surveys in order to obtain tangible data, about the relationship of social networks and the learning environment, because, there was a negative scope by teachers in the use of social networks. During our Learning/Teaching process in the classrooms, we found significant behavior aspects, from the students and teacher part, which make us think about the possibility of inclusion of social networks into the educational process in schools,

next we present some questions, given to teachers, and which correspond to the use of social networks:

- To the question "Are you in favor of using social media in educational settings?" 65% answered positively.
- "Do ICTs provide flexibility in time and space, to communicate with your students?" 62% appreciated the inclusion of ICTs, see Figure 1
- "The ICTs do not allow students to exercise in the acquisition of some basic intellectual skills? The teachers observe that the use of ICT increases the acquisition of basic skills, with direct reference to the acquisition of basic skills. The 75% of them answered negatively to this use; see Figure 2.
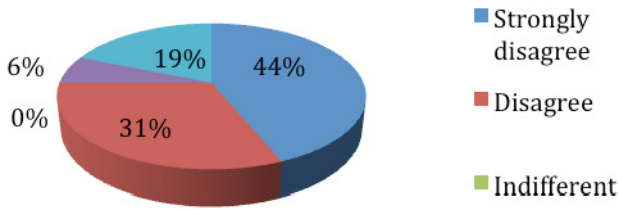

Fig. 2. Percentage of the answer of the question: The ICTs do not allow students to exercise in the acquisition of some basic intellectual skills.

We also raise a question for teachers, rate the type of work they do with the use of ICT in the classroom, as we can see in Figure 3. Teachers score very favorably the use of ICT for cooperative work on projects. After analyzing the survey, we found that the definition of social network from the analytical point of view, is a set of actors linked to a set of relationships that meet certain properties, which have a structure and characteristics defined by the social behavior [4] and hierarchical structure, which is extracted from the context in which it is being applied, so working methodologies, communication patterns are defined as an extension of the situation in which the actors perform their work [5] [6] [7] [8].

Teachers show a very high interest in tracking students to evaluate and qualification of the student, so the inclusion of these aspects of the social network is an important and very relevant, since the teacher bases his work in educational programming classroom with a structure and a very specific documentation [9].
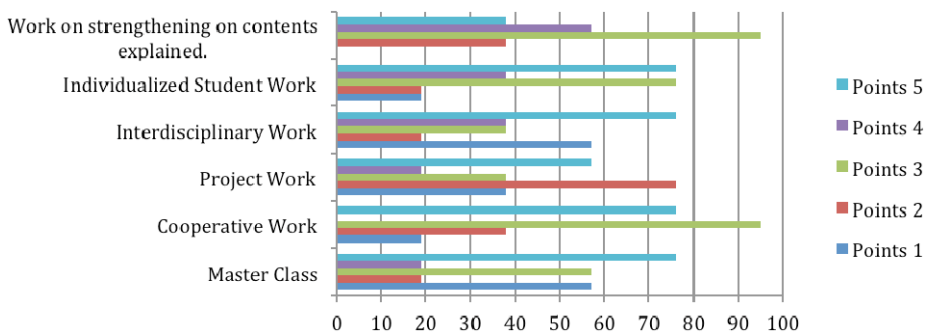

Fig. 3. Ratings teaching work methodologies

Next we present a set of questions, we made, focused on the organization of didactic content of the teacher, thus those do not perform only the teaching work:

- Is it useful to generate a report with the score of the level of achievement of the objectives and responsibilities of students, student group? 84% of teachers surveyed are in favor of reporting the objectives achieved by students during the teaching lessons; see Figure 4.
- Is the school organization reflected in the ICT in your daily work? 69.23% of teachers confirm this assertion.
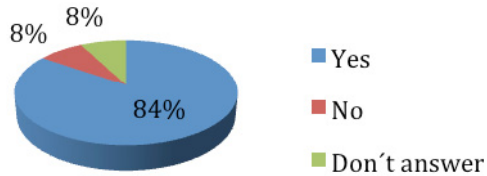

Fig. 4. Percentage of the answer of the question: Is it useful to generate a report with the score of the level of achievement of the objectives and responsibilities of students?

We are therefore faced with a scenario where the work of teachers is teaching and organizational work, where the daily work of the students should be collected for further analysis and to allow the teacher to perform the tasks of monitoring and evaluation of the student, and to prepare an inclusive education in the classroom appropriate to the group of pupils and students in particular. In our previous research we have defined several development methodologies, the use of patterns in classroom makes us think that the dual curriculum, that Pere Marques define in [10], is wrong to be applied in the Web 2.0 world, and that the social networks are tools that interrogates the teacher, of how to do things but does not provide the methods of analysis of all the information that he needs to do the monitoring, evaluation and qualification of the teaching-learning process. For that we have to be careful and not to define a new teaching methodology focused on social networking, but in the structuring of the social network itself to perform a flexible and dynamic space, for the teacher, in which he can integrate social teaching methodologies.

3   Educational Patterns Used in Social Networks

We have to be careful not in defining a new teaching methodology focused on social networking, but in the social network structure itself, by making it flexible and dynamic space for the teacher, to perform his teaching and learning process, to integrate his social teaching methodologies, and a system where the educational documentation is fully insured for its evaluation. Our experience with educational tools, shows us that there must be a set of patterns that guide the work within any educational and collaborative tool [11], for that here in our merge between the CSchool system and

Facebook, we apply a set of patterns, which we already define to cover the educational process in classroom, to ensure the correct function and work of this merge. Thus we found that the patterns provided by a social network for teachers, to interact with their students, are those of the social network, and we can apply them in an educational context to become valid. To this end we establish the comparative educational models with collaborative and learning objects, these patterns are taken from [11] (Figure 6-12. Systematizing Resource patterns under an e-learning System page 158).

Table 1. Coordination Patterns Presentation in Facebook and Description

e-Learning	Facebook	Description
Agenda Calendar	Calendar	Users can maintain communications with a close group of friends. The social network will tell you who read the group messages.
News	Wall	We add to the wall a description for the group.
Exam Exercise Work	Wall	Adding to wall information and calendar information to alert users. The system comes with a plugin for Dropbox [12] to send information to students as the statement or the practices they have to perform.

Our goal is to establish the equivalence between the social network and the e-learning patterns, so that we would have a platform with social networks that interacts with already established e-learning standards, see Table 1, Table 2 and Table 3.

Table 2. Coordination Patterns Presentation in Facebook and Description

e-Learning	Facebook	Description
Contact Professor	Wall, Email, Video Chat	The teacher can communicate privately to students with different social network options.
Discussion Work group Debate FAQ	Wall	The teacher can establish communication needs in the Wall group members can interact and exchange information to perform a pattern of communication.

Once the relationships are established, between the e-Learning patterns and the social network Facebook functionalities, we can observe that almost all of these options are representative of educational patterns, which we considered necessary. The system works through the exchange of information, which is in the cloud, but there are features that require a complete implementation for these functions. The next section will present a detailed description of these functions.

Table 3. Coordination Patterns Presentation in Facebook and Description

e-Learning	Facebook	Description
Presentation	Wall	The Professor can play all these educational patterns through the wall since students can perform all these patterns by including any type of file.
Video		
Material		
Bibliography		
Demonstration		

4   Architecture

This architecture present the social network Facebook as a key part of the proposed educative system integrated in the cloud, where Facebook is a Web 2.0 Service, one of our main goals is to push Spanish teachers to the inclusion of their activities and use of this social network in schools.
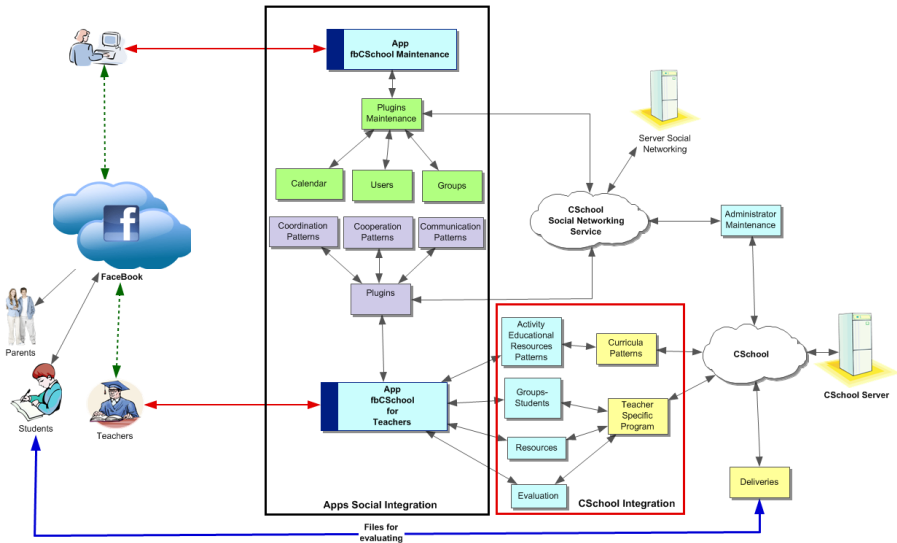

Fig. 5. The proposed architecture of the system, to join Facebook and educational process

Our approach is a mixed system, in which the teacher performs the management of the social network through an application that facilitates the management of content and the creation of all these educational patterns in social network, and control of the elements described above. Students communicate, with the teachers and with their classmates, through Facebook, while the students' deliveries and exams, to be corrected, are sent to the Document Management System (DMS), which controls all the educational management of the center, which also store the school curricular materials. The DMS also contains the students' official curriculum, to control the lessons and courses objectives, and to allow the assessment and grading of students. Next, we

present the system architecture, as you can observe in Figure 6., the system has been integrated in the CSchool architecture [13].

The architecture is divided into two parts, very distinct, first we find the cloud of educational services, where the management system works; and on the other hand we have the cloud CSchool Social Networking Service, which manages all the needs for the integration of curricula and school activities in the Facebook social network. This integration has been made possible through the use of Facebook plugins, where we have invoked specific applications to allow this integration in the cloud. And then, we develop an application to manage the integration of both, the social networking and educational applications in our cloud "CSchool", presented in previous articles [2][13]. We divide these applications, for integration, into two parts: for teachers and for administrators.

4.1   Teachers FB Applications

The teacher through these applications can manage the patterns objects necessary for the correct use of Facebook in education, which is integrated thanks to the plugins, Figure 6, shows how this application interacts with the platform which manages educational content and curriculums assigned to the teacher, in addition to their groups, students areas and calendar. This application, also, will allow the teacher to integrate his teaching resources, activities, exercises, tests, calendar, etc. i.e. the creation of educational patterns in Facebook, social network, services, and the creation of new patterns through the necessary plugins in student groups.

This application interacts with the two clouds: form one side, we get the educational patterns; and in the other, the social network which the teacher configure according to his needs.

We highlight in purple the relevant plugins for education standards, according to the specification described above, this plugin generate within the Facebook content the desired pattern, after that, and through the Facebook service, the teacher can create a structure, learning/teaching process, and upload it to the Facebook; besides he can track it through the application or Facebook wall. In green color, we find the Web Services that access the educational services of the educative yields where the necessary information, interact and stored, for the operation of the management system, and to promote the inclusion of data from the teacher in the system, so helps the teacher's in his daily work, by monitoring his activities, and to improve the process of evaluation and monitoring of the student.

4.2   Administrators FB Applications

The administrator is responsible for managing and maintaining the user groups, this process involves a migration of users and groups, which is configured in the management platforms that schools have. Furthermore, the system administrator will have the necessary options for updating the Facebook page. Note that the system will accept the evaluable content entries, the students sent to the server, as deliverables, to avoid any posterior problems. The inclusion of an activity, on the server, for its revise

and posterior delivery to the student, corresponds to the creation of Servlet that process the input of a new student. More services, have been added to the administrator to perform the maintenance tasks, between the two clouds: to create users and groups, and to verify the synchronization between the two educational clouds.

As first step, parents and students interact directly with the new educative Facebook, a controlled approach by the teacher of the use of these in the educational world. With the presented architecture, the plugins system, guarantees a dynamic system, thus, we can include other social networks depending on the needs of the teacher, and following a clear line since the beginning of the creation of an educational learning/teaching process.

5 Conclusion and Future Work

In this paper we have tried to simplify the use of social networks, in our case study "Facebook" in the educational world, for that we have established the teacher as the main focus point of the system, and not the student, as it usually done, because teachers are not familiar with these new social networks. By this we gave teachers the opportunity to share with students, through the use of social networks, some educational activities and to perform the evaluation process of these. By including another layer to the system, this allows the interaction with social networks from other management education applications, where it offers the teacher a lot of features. In this paper we have tried to work with the most used educational patterns [11], where we present their migration to work within social networks, but over the time, and with the increased use of social networks, new patterns will appear, because of the needs of teachers, as for the new features that offer advances in social networks.

As future work, we are studding to create and use of social networks in business and industrial environments, not just for marketing use, but as a collaborative online work place, depending on the needs and the type of management application that the small businesses have. This allows that bridge applications can be made, which do not involve a lot of time in its configuration and professionals training will not be high, when it depends on ICTs and social networks issues.

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