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Work in Progress: Extending a LMS with social capabilities: Integrating Moodle into Facebook

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Abstract—Merging a Learning Management System (LMS) and a social network has social advantages for students. Among others, students can show off their achievements among their acquaintances, which in turn improves their social leadership and self-esteem. This is specially true in the case of distance learning, where there are no physical interactions between students, so their student life is totally isolated from their everyday life (e.g. students do not go out together, since they may live in different cities or even countries although they study the same subjects). All these points suggest that the use of social networks for distance teaching has clear advantages that can be harnessed.

In order to achieve the aforementioned benefits, we are working on integrating a commonly used LMS, Moodle, into one of the most widely-used social network, Facebook. This integration allows students and faculty to use Facebook as a communication tool that improves the learning process and social life of students in the ways presented before.

I. INTRODUCTION AND MOTIVATIONS

With the recent development and wide-spread use of Web 2.0 [1] concepts, such as social networks [2] and cloud computing [3], an interesting guideline for research is how these new technologies can be applied to education. These technologies have a number of interesting features, and some of them can be of real interest for educational purposes. Among others, the easy ways of sharing information and interacting between users in social networks (users can write in walls, define their status, like and dislike learning resources, send messages, chat, share applications, etc). We are working on the implementation of a full-featured system that uses the aforementioned Web 2.0 concepts for e-learning purposes. Authors have worked on harnessing another main technology among the Web 2.0 realm, which is cloud computing [4], and in this work we propose how to harness social networks for e-learning purposes.

Social networks can be of real interest because they allow the creation of virtual classroom spaces outside the Learning Management Systems (LMS) of the University. Thus, these tools can increase the interoperability of students and faculty and improve the quality of the learning process of students. For example, students can be hanging around in their favorite

social network and get instant updates on the status of the courses or evaluation feedback from their activities (e.g., the practical exercise 5 has come out, it must be presented by 1st of February).

Social networks are a very important communication media in Spain. According to [5], 50,9% of Spaniards use a social network (which rises to 80.3% for young people between 16 and 24 years old), and 35,3% of Spanish people use social networks as the main tool to communicate with each other, which increases to 54.1% of Spanish youth (a 19% increase compared with the previous year). Also, more than 79,2% of young users connect to a social network at least once a day (60,4% considering all the ages).

Among all the Web 2.0 tools available at the moment, Facebook (www.facebook.com) stands up in the crowd of the social networks. According to [5], Facebook is the leader in Spain in terms of the generated web traffic (e.g. users visit web sites recommended via Facebook), since 63.9% of this traffic is generated by Facebook, distantly followed by YouTube (13.8%). Moreover, more than 40% users choose Facebook as their favourite social network, followed by Tuenti with 14.4%.

All these figures highlight the wide-spread use of Facebook in Spain and identify it as a very interesting tool to improve the learning mechanisms of a University. This is specially true for totally distant universities, such as the National University for Distance Education of Spain (Universidad Nacional de Educación a Distancia, UNED, www.uned.es) which depend on technological infrastructures (such as LMS, videoconferencing, etc) to make the learning processes feasible in the absence of face-to-face classes.

Furthermore, integrating a LMS into a social network has social advantages for students. Among others, students can show off their achievements among their acquaintances, which in turn improves their social leadership and self-esteem. This is specially true in the case of distance learning, where there is no physical interactions between students, so their student life is totally isolated from their everyday life (e.g. students do not go out together, since they may live in different cities or even



Fig. 1. Searching the application using Facebook search engine.

countries although they study the same subjects). All these points suggest that the use of social networks for teaching has clear advantages that can be harnessed.

In order to achieve the aforementioned benefits of social networks, we are working on integrating a commonly used LMS, Moodle, into Facebook. This integration allows students and faculty to use Facebook as a communication tool that improves the learning process and social life of students in the ways presented before. For this integration, several tasks have been performed. First, an in-depth study of the Application Programming Interface (API) of Facebook has been conducted. After that, the integration of the log-in facilities of Facebook and Moodle has been performed, which allows participants in the learning process log-in into Moodle using Facebook credentials.

The next step is the development of web services in Moodle to be accessed by Facebook. Moodle supports several types of web services, and for this work, services using Representational State Transfer (REST) will be used for their ease of implementation. A web service showing the course information has been developed in this work, which allows participants see the contents of the course.

Finally, Facebook applications have been developed to access the aforementioned web services. The application that performs the integration between Moodle and Facebook is called PFC UNED Mdl-Fbk and can be found using Facebook search engine as can be seen in Figure 1. Once it is installed, it allows us to connect to our Moodle LMS and offers the possibility of logging in to it and see our courses.

II. FUTURE WORK

Regarding future work, a more detailed integration is being implemented. Among the points being treated, the publication of messages from the LMS forums or assessments results in the wall of Facebook are two of the first ideas. For this, the Spanish Organic Law for Data Protection (*Ley Orgánica de Protección de Datos*, LOPD [6]) must be taken into account since no private data can be published. Facebook privacy settings can be of real interest to decide what students/faculty want to publish/hide from public view.

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