Introducing a Moodle LMS in Higher Education: the e-Courses Experience in Ticino (Switzerland)

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Abstract

The University of Lugano (USI) and the University of Applied Sciences of Italian Switzerland (SUPSI) adopted in May 2004 a Moodle LMS as a support for their educational activities. This article describes how the eLearning platform was chosen, installed, integrated into the different existing universities' systems, customized and enhanced according to both institutions' needs. It shows also how the new platform (e-Courses) was then communicated and promoted among the faculty members of USI and SUPSI, and how its impact on the learning activities of the two institutions was evaluated through an online questionnaire, which showed high satisfaction levels with e-Courses.

1. Introduction

This article presents the introduction of an Open Source Learning Management System (OS LMS) in two Tessin (Switzerland) higher education institutions: the University of Lugano (USI) and the University of Applied Sciences of Italian Switzerland (SUPSI).

These institutions are quite small (respectively 1900 and 1800 students, and 550 and 400 professors, many of them part-time) and relatively young: USI started in 1996 while SUPSI in 1997, integrating already existent schools. Due to their inner characteristics, both institutions focus on in-campus activities, offering high quality services and a very positive student/faculty ratio.

Although not directly interested in distance learning, USI and SUPSI have been deeply involved since their very beginning in eLearning activities, mainly aimed at improving the quality of in-campus teaching/learning experience and at enhancing flexibility slightly reducing classroom time; in addition, eLearning is in the Faculty of Communication Sciences studies also a research and teaching subject. These interests matched quite perfectly the efforts made at the federal level to promote a wide integration of ICT in higher education, in particular those supported by the Swiss Virtual Campus, which funded many eLearning activities in both institutions. Due to these interests and experiences, and in order to foster collaboration and take advantage from economies of scale, USI and SUPSI created in 2004 a common laboratory, eLab – eLearning Lab (www.elearninglab. org), whose main goal is to promote and support the development of eLearning applications at USI and SUPSI.

2. The choice of the platform

USI and SUPSI had a year-long experience in blended-learning courses and in funded eLearning projects with WebCT, and a smaller experimental experience with BlackBoard. These two LMS yet served only a very limited number of courses of early-adopter instructors: the largest part of courses simply distributed electronic documents through shared folders on the network.

In the process of creating common services for the two institutions, a new LMS had to be chosen in order to support their teaching activity, and the choice was made for Moodle. The reasons for this choice should be understood on two levels: (a) on a general level, answering the question: «Why an OS software?»; and (b) on a more detailed level, answering the question: «Why Moodle?».

2.1 Why an OS?

The perceived benefits that pushed USI and SUPSI toward an OS solution are threefold, and concern costs, infrastructure, and tailoring and integration.

Costs. One of the main issues with commercial LMS is funding: the uncertain benefits of online learning made the two institutions doubt about the real return of a huge investment as the acquisition of the required number of seats in a commercial LMS. First, instructors and students did not have established practices in using online tools, so that the actual use of the LMS was unpredictable. Second, the uncertainties of the market and the rapid and often earthshaking developments of the eLearning world made the commitment to a single producer tricky. Finally, it was a one-shot situation: in the undesired chance of a failure, the cost would have made almost impossible to try out another solution. Moving to an OS solution mitigated these three issues: given the low cost, even a failure would have a reduced impact on the overall budget, and would not have prevented moving to another OS or even commercial solution later. Furthermore, the (almost) complete visibility of the life of an OS community provides more information about its hope of survival in the eLearning market than the financial reports of super-protected commercial players.

Infrastructure (material and human resources). One of the big issues of OS software, and of its major hidden costs, is the need of infrastructure (hardware and network connection) and of in-house work for setting up the system, for maintaining the application and for checking, selecting and installing updates. All of these issues are quite unproblematic in our setting, as in the largest part of universities, who have a dedicated IT staff able to care after the infrastructure, the installation, maintenance and update of software applications. Moreover, the hardware demands of OS software are usually significantly lower than those of commercial software.

Tailoring and integration. An eLearning system potentially impacts the core of a university's activity, and has to be integrated with standard procedures for class scheduling, enrollments, assessment, quality evaluations, network accounting etc. The main advantage that an OS solution brings to institutional users is the possibility to tailor the application to one's needs, and to integrate it in first person in existing procedures and IT system. Some of the adaptations and integration carried out at eLab are presented below.

2.2 Why Moodle (the review process)

Once decided to look for an OS solution, a review and selection process started, articulated in three phases (Botturi, 2004). In the first phase, a general selection was conducted: through reading specifications and features lists of about 50 LMS, 12 of them were admitted to the next step. Phase 2 planned a systematic hands-on trial in order to check the availability of features and usability of the selected LMS against a set of basic user requirements: in this phase, 6 LMS were selected for the last step in the process. Phase 3 considered the LMS from a «social» point of view,

and focused on: (a) the dimension, history and stability of the OS community behind the software; (b) whether the programming languages used were up to date and known to the eLab staff; (c) the familiarity of the eLab staff with it.

The selection ended with the identification of Moodle as the main eLab platform. Actually, Moodle provides a less sophisticated and structured environment than a full-fledged commercial LMS such as WebCT. As a result of the OS development model, Moodle looks more like a set of tools that share an environment, while commercial LMS support a complete development process and provide complex management tools. The point is that, given the simple requirements of our potential users, and the fact that online courses do not have any dedicated management process, a set of tools was far enough for our needs.

3. Tailoring Moodle to the universities' needs

The selection of Moodle was just the first step in offering a complete eLearning support service to USI and SUPSI. The LMS was in fact adapted and integrated in order to fit to their needs. Adaptations and integration are here organized into three categories.

3.1 Integration

Integrations are modifications of the application that are aimed at making it a functional part of a bigger system.

The main challenge in introducing a new LMS was trying not to make it a bothering problem for the users who receive «yet another username and password». The situation was particularly tricky as the two campuses of USI (Lugano and Mendrisio) and the 3 departments of SUPSI all had different authentication systems. The analysis revealed that the only information present at all sites was the e-mail account: the issue was therefore solved by creating a small module that allowed the authentication in Moodle through the e-mail account, thus achieving two important goals: (1) users can use the same password for this new service; (2) the list of users is automatically kept up to date with the e-mail service, so that user creation and deletion is fully integrated in the administration and IT practices.

A second important integration — currently implemented only at USI — concerned the creation of an automatic connection between three resources related to a course: (1) the USI website's page about the course, with general course information and a link to the instructor's home page; (2) the library's course page, listing the readings for that course along with information about how to retrieve them from the library; (3) the Moodle online course space. The issue is important as it aims at offering decentralized yet connected information to students, making it easier to access each resource from any of the others. This was simply solved by coding a new Moodle block connected with a database keeping track of course

codes. The same connections were added to the library's and the university's websites, that share the database with Moodle.

3.2 Customization

Customizations are modifications to the application that adapt it to the preferences and practices of the users. Moodle was introduced at USI and SUPSI as a platform called e-Courses (http://corsi.elearninglab.org), with an own logo and look-and-feel. In December 2005 e-Courses had more than 3200 users and hosted about 550 courses for 4 USI faculties/schools, 4 SUPSI units (3 departments and the language service), and a number of projects (see Figure 1). This posed some issues in the visualization of the homepage, as the category list grew large. A dedicated project is currently under development (to be proposed as a new Moodle feature) to develop a new homepage visualization.

3.3 Enhancements

Enhancements are modifications to the application that introduce new features. The participation of the Institute of Communication Technologies (Faculty of

Figure 1   The actual homepage of e-Courses.

Communication Sciences) and of the NewMinE Lab in the Edukalibre EU-funded project provided an opportunity to develop new modules for Moodle and to get in touch with its community.

We mention here GISMO (Graphical Interactive Student MOnitoring tool), a module that generates relevant visualizations of student tracking data logged by Moodle (Mazza & Milani 2004, 2005). These visualizations are useful to get a synthetic overview of online activities, and proved effective especially for tracking completely online modules (see Figure 2).
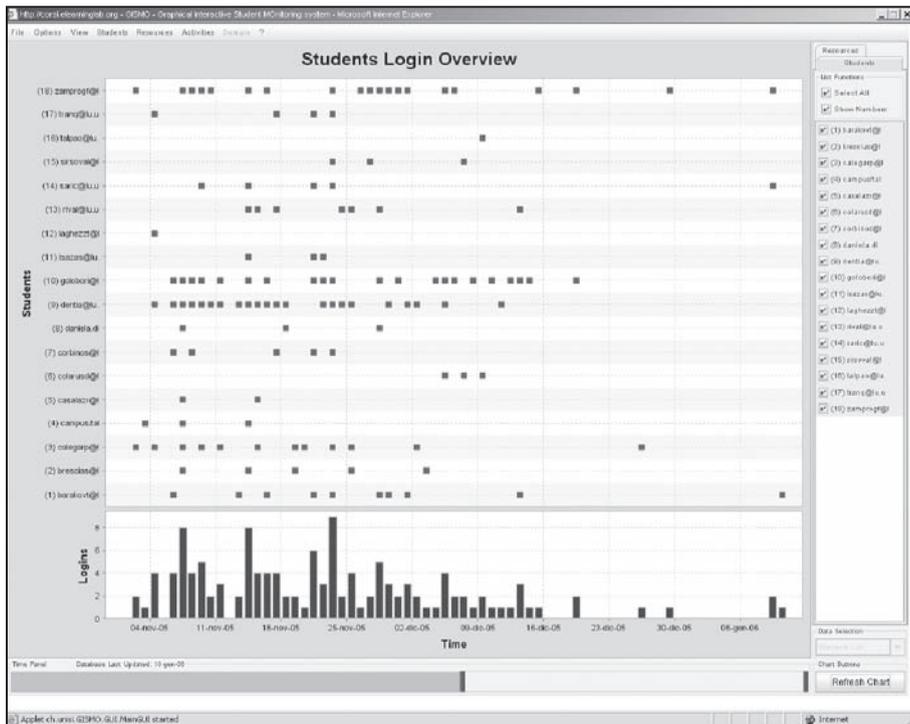

Figure 2   A GISMO pop-up with an overview of students' login in a course hosted on e-Courses.

4. Communicating the innovation and evaluating its impact

4.1 Promotion and communication of e-Courses

Once the platform had been installed and tailored according to both institutions' needs, the problem was to communicate and promote it within the community of its future users, namely professors, teachers and students. As a matter of fact, innovations do not automatically spread in the contexts where they are

supposed to be adopted, but need to be adequately promoted and communicated (Rogers 1995): eLearning makes no exception (Lepori, Cantoni & Succi 2003). It must be also considered that at USI and SUPSI teachers do not have economic incentives to integrate technologies into their courses, with a partial exception for a short program held at SUPSI. In order to facilitate the adoption process of the platform in the involved universities, two main activities were undertaken: (1) all the online courses available on WebCT were automatically migrated to e-Courses and, upon request of the respective teachers, the digital learning material that was previously stored in the universities' intranet shared folders was moved to e-Courses; (2) a series of workshops on the use of Moodle, both from a technical point of view and from an educational one, was offered to all teachers and teaching assistants of USI and SUPSI. In addition, an online module about the basic features of Moodle was developed and put at the e-Courses users' disposal. Finally, one-to-one assistance with *ad hoc* modules was offered for teachers who could not take part in the workshops and requested it.

4.2 The evaluation of the use of e-Courses

In February 2005 a survey was conducted through an online questionnaire in order to evaluate the satisfaction of e-Courses users, especially devoted to faculty members. 57 faculty members (out of a total of 140: 40.7%) filled-in the questionnaire. The main results of the evaluation phase are here reported, divided into three main sections.

Use. The participants' answers show that e-Courses has been mainly used as a tool for distributing and sharing learning materials (slides, papers, handbooks, and so on; 87.7% of respondents used this functionality). Among the other tools offered by Moodle, only the communication forum and the online submission have been widely used (respectively, by 44% and 31.6% of respondents). Other available functionalities, such as quizzes, chat and journals, have been used only by a small number of innovators in each faculty or department.

Satisfaction. 94.3% of respondents are satisfied with e-Courses. Users appreciated in particular the possibility of communicating with students also out of the class lessons, the ease of managing digital material and the possibility of making it available to every student at any time.

Impact. 44% of respondents noticed positive changes in their courses after the adoption of e-Courses; the remaining 56% did not notice any relevant change. Furthermore, in the perception of the teachers who answered the questionnaire e-Courses had a positive impact on students: 60% of respondents think that students had a positive reaction to the introduction of the platform, and 51% of them claim that students had no difficulties in using e-Courses.

On the basis of these good results, e-Courses has also been offered to other educational institutions in Switzerland and is currently used by some of them.

5. Conclusion

In this article the choice and implementation of the Moodle OS LMS by eLab has been presented and discussed. In particular, the issues of its maintenance and acceptance by faculty members, as well as a first evaluation activity have been addressed.

Many other projects are under development, both in the area of further customization and enhancement and in the area of a better integration in teaching and learning: their implementation and the ordinary running of e-Courses will provide a larger basis for assessment and evaluation.

Acknowledgements

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