

# Chapter 4.11

## Integrating New Open Source Assessment Tools into dotLearn LMS

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### ABSTRACT

*The convergence process initiated by the European Higher Education Space (EHES) has changed the approach to the teaching and learning process focusing largely on monitoring the progress of the student. This task can be simplified with the proper use of tools integrated in the universities' Learning Management Systems (LMS). Most of these platforms have modules for managing the evaluation and to create online examinations. However, they do not tend to contemplate ways of evaluation depending on the subjects taught. This chapter presents a tool for continuous evaluation of a variety of subjects and their integration into a LMS based on open source. In the University of Valencia's particular case, the LMS includes facilities to create online examinations, but it does not provide a user-friendly interface. To improve the usability of this module a computer program has been developed to simplify the evaluation process.*

### INTRODUCTION

The development of information and communication technologies (ICT) has generated new needs for the students (Lee & Owens, 2000), (Wong, 2003). In particular, students need current knowledge and specific skills readily applicable to

their potential professional area (Marqués, 2008). Also the learning support materials have evolved through the development and use of ICTs, which has opened a vast field for training. All these changes have led to a redefinition of the teaching and learning process (Pallof & Pratt, 2003). This process is essentially collaborative in order to achieve a more active participation of the student.

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Currently, the incorporation of ICT's in higher education has been completed. Most European universities use either commercial or an open source Learning Management System (LMS) to support their programs (Barajas & Gannaway, 2007). However, proper integration means to achieve a practical system of education that incorporates both the best technology and the most appropriate teaching techniques (Zurita & Ryberg, 2005). Content and methodology must be adapted to the new e-learning tools (MacDonald & Thompson, 2005). In this sense, the European Higher Education Space (EHES) recommends a higher participation student within a collaborative teaching and learning process with real quality (Brooks, 2003).

Therefore, the adaptation and growth of an open source LMS cannot be made based on a simple development of additional modules, but requires a thorough analysis of its use. This analysis will serve to detect the most used and useful functionalities to improve the learning process and the educational quality. In addition, this study shows which tools should be modified to facilitate interaction between users (Colla, MacDonald & Thompson, 2005), (Thompson & Randal, 2001).

In the case of the University of Valencia (UV), the study was performed after two courses of use of its open source LMS (This period was considered the implantation phase) (Moreno-Clari & Cerverón-Lleó, 2007). The analysis included a comparison of the main functionalities with a university of similar size and characteristics, which had introduced its platform a year earlier. The main objective was to identify the modules that needed improvement. Based on the comparative results two modules had to be improved for adapting them to new needs of the student's monitorization and evaluation. These modules were: the "Activities module", which was used to manage and evaluate homework, workgroup, practical classes and therefore achieve a continuous evaluation and the "Assessment module", used to create online

examinations (Cerverón, Moreno, Cubero, Roig & Roca, 2007).

This chapter presents the implementation of a tool for continuous evaluation and grades management based of an improvement of an existing tools. It also contains the description of a tool to create online examinations and their integration into the existing LMS. In both cases, this new tool can be reused on any platform based on the dotLRN open source software.

The background, the starting point and the events that led to their developments are outlined first. Thereafter, the two tools implementation is described, including the system analysis, the research design and the results of the integration process, always keeping in mind that the results can be generalized to other university's open source systems. Finally, new ideas for further research are outlined and the conclusions of this work are exposed.

## **BACKGROUND AND STARTING POINT**

The University of Valencia was one of the first Spanish universities that started different strategies of change and modernization. Not only its structures but also the teaching method follows the recommendations brought by the European Space for Higher Education (ESHE) (Moreno & Cerverón, 2007). A new plan was developed to improve the use of ICTs and to enhance the students learning processes by involving them more directly. On the other hand, in order to standardize the available technical tools and to promote their use by the whole academic community, all the tools where unified on a single platform. This platform should provide a unified management of the learning process and communication between groups and communities (Cerverón & Moreno, 2006).

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