

Selecting and Evaluating a Learning Management System: A Moodle Evaluation Based on Instructors and Students

Andreas Konstantinidis, Aristotle University of Thessaloniki, Greece

Pantelis M. Papadopoulos, Aristotle University of Thessaloniki, Greece

Thrasyvoulos Tsiatsos, Aristotle University of Thessaloniki, Greece

Stavros Demetriadis, Aristotle University of Thessaloniki, Greece

ABSTRACT

This paper presents the rationale behind the utilization of a Moodle Learning Management System for the facilitation of a blended learning approach in the Informatics department. The authors present and analyze the steps followed in order to replace the prior decentralized organizational structure of the courses, which consisted of a multitude of different and incompatible systems. The main goal was to implement a single system, which would be easy to operate, maintain, and update, and would cater to the variety of instructor and student needs. Furthermore, evaluation data of the new system is presented in detail. The analysis of the results serves to confirm the success of this department-wide migration.

Keywords: *Blended Learning, Distance Education, Learning Management System, Technology-Enhanced Learning, Web-Delivered Education*

INTRODUCTION

This paper concerns our department's decision to implement a Learning Management System (LMS) platform to support and aid instructors with managing their courses. The main focus of the paper is on the selection process and the applied evaluation methodology. For the selection process, we examined the most popular LMS solutions available and based on the objective

and subjective criteria we set, proceeded with the implementation of what we considered to be the most suitable platform to satisfy our department's needs. Certain implementation and expansion issues concerning the selected platform are also discussed in other sections of this paper.

In the past years the instructors in our department, were allowed the freedom of choice on whichever LMS they thought was appropriate for supporting their courses. This resulted in the concurrent operation of a number of dif-

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ferent systems, each supporting only some of the department courses. This chaotic situation necessitated the adoption of a more centralized and concrete solution.

Therefore, our set goals as a department included: (a) easy access for instructors and students, (b) motivation of the instructors to adopt the new LMS, (c) support of communication (peer / student - instructor), (d) increase of student attendance and participation, (e) integration of additional systems (e.g., eCASE module), and (f) adoption of a single system solution. This single system would focus mainly on the ease of use. This would include simple maintenance, control, and usability (i.e., one account per user).

Although this paper is not aimed at a specific target group of readers, we consider the experience documented here to be of the most use to departments or individuals considering the implementation of an LMS system. Especially, when a combination of multiple systems is to be substituted by a more centralized organizational structure as was our case. Readers should find useful the information relating to the selection and evaluation process, as well as the major implementation issues which had to be resolved.

The rest of the paper is structured as follows. Initially we justify the necessity of applying a department wide LMS solution by presenting information concerning the previous organizational state. Following that, we include the theoretical background of blended learning, by defining it and presenting its pedagogical benefits and educational shortfalls. Our approach on blended learning is also discussed and justified. Next, we link our paper to related work, based on the study of relevant bibliography concerning the experiences of other researchers on implementing blended learning. Finally, we present the work phases which constitute the selection process and evaluation methodology we followed. These phases include: (a) analyzing the pre-existing condition in our department, (b) defining the requirements with which we would compare the available LMSs, and (c) implementing, expanding, using, and evaluating the selected LMS.

BLENDED LEARNING

Our department conceived the proposed LMS system as a preoperational or follow-up step to face-to-face education, thus facilitating a blended learning approach. In other words, one goal was for the LMS to suitably augment the quality of face-to-face education and student support. There is evidence that blended learning has the potential to be more effective and efficient when compared to a traditional classroom model (Heterick & Twigg, 2003; Twigg, 2003).

Blended learning is defined as a learning solution, which implies a mix of the following (Garrison & Kanuka, 2004; Graham, 2005):

- Varied delivery media: e.g., non-technology-supported and online electronic multimedia material.
- Varied learning events: e.g., individual, self-paced and collective ones.
- Electronic performance support: e.g., instruction based and knowledge management support.

Research shows that learning based on the blending of face-to-face with online training, and of formal and informal learning is usually more easily accepted than online-training alone (Colis & Moonen, 2001; Rovai & Jordan, 2004). Also, evidence suggests that the learning experience is better and completion rates are greater where there is tutor support either face to face, on-line or over the telephone (Hamburg, Engert, Anke, & Marin, 2008). Some of the advantages of traditional face to face classroom education are: (a) social interaction through personal contact and the exchange of ideas, (b) familiarity, customary method, and (c) an environment which supports multiple communication channels. (Paraskakis, Konstantinidis, Bouras, Perakis, Pantelopoulos, & Hatziapostolou, 2009).

To enable the augmentation of the face to face learning, researchers suggest a blended learning approach that combines the use of distance learning methods with the interactions which occur within a traditional classroom.

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