

## Chapter 6.8

# Mobile Learning Management Systems in Higher Education

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### ABSTRACT

*Learning Management Systems (LMS) are widely used in Higher Education offering important benefits to students, tutors, administrators and the educational organizations. On the other hand, the widespread ownership of mobile devices has led to educational initiatives that investigate their potential as the means to change the way that students interact with their tutors, their classmates, the learning material, the administration services and the environment of their educational institute. This mainly aims to support the continuation of these interactions not only outside the classroom, but also beyond desktop restrictions, towards to a truly constant and instant access from anywhere. As a result, the development of mobile LMS (mLMS) is important for the deployment of feasible mobile-supported educational services in Higher Education. In this book chapter, we address the issue of designing mLMS for Higher Education by studying and applying the W3C Mobile Web Best Practices 1.0 to a widely used existing LMS, namely, the Moodle.*

### INTRODUCTION

During the last years, several studies have been reported that Technology-Supported Education can be effectively used in Higher Education (HE) for enhancing and enriching the traditional ways

of teaching and learning, offering meaningful learning experiences that bare the potential to address the shortcomings of traditional classroom-based learning (Catherall, 2004; Tham & Werner, 2005; Bonk & Graham, 2006; Mayes et al, 2009). Technology-Supported Higher Education can offer a number of services to all relevant actors in HE (namely, students, tutors, administrators and the

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educational organization) such as: (a) transparent access to courses' materials and activities, as well as, participation to synchronous and asynchronous group-based course activities, (b) on-line submission, marking and feedback on students' assignments, (c) effective students' course activities tracking, (d) efficient student enrollment and monitoring, and (e) on-line delivery of courses offered by an educational organization, reaching students outside campus. These services can enhance the opportunity of learning to anyone, anywhere and at anytime without place and time restrictions and promote wider participation, removing the traditional barriers to Higher Education studies (Laurillard, 2005).

Learning Management Systems (LMS) are among the most widely used applications in Technology-Supported Education, providing a convenient way to organize and deliver educational and training e-services in formal educational settings (Weller, 2007; Cole & Foster, 2007). LMS are now considered as mainstream applications for the organization, management and delivery of on-line courses in Higher Education, since they enable efficient planning, implementation, administration, tracking and reporting of educational and training activities (Kim & Bonk, 2006). LMS provide to students facilities for enrolling to on-line courses, accessing lecture notes and supportive course material, communicating with their classmates and their tutors through online discussions, participating to on-line assessments, as well as, monitoring their progress and grades. Moreover, LMS enable tutors to organize their courses' syllabus and teaching material, gather grade and provide feedback to students' assignments, track students' progress and participation to their courses and communicate with their students for answering their questions. Furthermore, LMS provide to the administrators efficient ways for assigning tutors to the courses and administrating enrolled students. Finally, LMS are offering to the Higher Educational Institutions an effective way for on-line delivery of their courses towards

reaching a larger and globally dispersed audience beyond traditional campuses.

On the other hand, the widespread ownership of mobile devices and the growth of mobile communications industry has offer the potential for the provision of new services including, internet access without place and device constraints, interpersonal and group communication without place and time restrictions and sharing of digital content in any format (text, image, audio and video) (Naismith et al., 2005). These new services offered by mobile devices can be used for educational purposes aiming to enhance traditional classroom-based and/or desktop-based web-facilitated educational experiences. This has lead to educational initiatives that investigate the potential of mobile devices as the technological means to change the way that students interact with their tutors, their classmates, the learning material, the administration services and the environment of their educational institute. This is important towards supporting the continuation of these interactions not only outside the classroom, but also beyond desktop restrictions towards to a truly constant and instant access from anywhere. (Kukulska-Hulme & Traxler, 2005).

Within this context, providing access to LMS via mobile devices bares the potential to enhance Technology-Supported Higher Education and achieve additional benefits for students, tutors, administrators and the educational organization. More precisely, mobile LMS (mLMS) can provide to students new opportunities for accessing courses' materials and for communicating with their classmates and their tutors beyond desktop restrictions. Tutors can use the mobile devices, so as to instantly and continuously monitor issues related with their courses (i.e. timely submission of students' assignments, questions that have submitted from the students etc) while they are on the move. System administrators can carry out basic system support tasks even without access to their desktops. Finally, the Higher Educational

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