Chapter 12

Differences in Internet and LMS Usage: A Case Study in Higher Education

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ABSTRACT

The Internet plays an important role in higher education institutions where Learning Management Systems (LMS) occupies a main role in the eLearning realm. In this chapter we aim to characterize the Internet and LMS usage patterns and their role in the largest Portuguese Polytechnic Institute. The usage patterns were analyzed in two components: characterization of Internet usage and the role of Internet and LMS in education. Using a quantitative approach, the data analysis describes the differences between gender, age and scientific fields. The carried qualitative analysis allows a better understanding of students’ both motivations, opinions and suggestions of improvement. The outcome of this work is the presentation of the Portuguese students’ profile regarding Internet and LMS usage patterns. We expect that these results can be used to select the most suitable digital pedagogical processes and tools to be adopted regarding the learning process and most adequate LMS’s policies.

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INTRODUCTION

In recent years, Learning Management Systems (LMS) has been assumed as the cornerstone of the learning environments widespread in the majority of the academic institutions. The central role occupied by the LMS in a typical architecture of a learning environment forces us to study its structure and its use by all users, whether they are teachers or students, in the teaching/learning process.

In order to improve the LMS usage as a tool to support teaching and learning in an effective way, and since LMS are delivered by Internet, it is important to know the Internet students’ usage habits, concerning the Internet and LMS usage. This information will allow us to adopt the most appropriate learning and pedagogical strategies, according the students’ profile, characteristics and preferences. It is also relevant to know whether these habits of Internet and LMS usage are in line with the following studies presented in this section.

This study aims to characterize higher education students’ of Polytechnic of Porto regarding their behavior on the Internet and eLearning platform, and it seeks to investigate how students use the information and communication technologies in their learning activities. Based on these, we propose suggestions to improve LMS usage what will be of interest to the definition of organizational policies.

The motivation for this work came from the heterogeneity of students’ profiles found in the Polytechnic of Porto and the need to enhance the teachers’ pedagogical strategy based on the students’ profile. The study is focused on gender, age and scientific field. These criteria were chosen based on several studies regarding LMS and Internet and due to the variety of Polytechnic of Porto’s students characteristics.

Several studies across the world have been combining the characterization and analysis of students’ Internet usage patterns and perceptions of how technologies could be used in learning at university: Australia (Kennedy, Dalgarno, Sturt, Bennett, Gray, Waycott, Judd, Bishop, Maton, Krause & Chang, 2009), United Kingdom (Conole, Laat, Dillon & Darby, 2006), USA (Walker and Jorn, 2007).

Since these LMS platforms present opportunities previously unavailable for academic institutions to apply their financial, logistical, and instructional resources (Uzunboylu, Ozdamli & Ozcinar, 2006), knowing the students perceptions will allow, not only to enhance Polytechnic of Porto teachers’ perceptions of what has the most impact on their students, but also, to define policies regarding eLearning platforms as a support to traditional education delivery and understand needs to be improved to undertake on distance and blended learning courses offers.

The remainder of this paper is organized as follows. Section 2 traces the evolution of the eLearning systems, highlighting the LMS. In the following section we begin by describing the research methodology used for the study such as data collection and population and sample. Then, we present the data analysis and discussion. The last section focuses on the main contributions of this work, more precisely, the results of this study and a perspective of future research.

STATE OF THE ART

Learning Management Systems

Electronic Learning (eLearning) can be defined as the delivery of educational content via any electronic media, including the Internet, satellite broadcast, audio/video tape, interactive TV, CD-Rom and others (Tastle, White, & Shackleton, 2005). Despite some efforts to improve remote education (Harasim, 2006), the genesis of eLearning can be traced with the development of network communication in the late 1960s, more precisely, with the invention of email and computer conferencing. These innovations con-