Chapter 6.10
Monitoring Students' Activity and Performance in Online Higher Education: A European Perspective

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ABSTRACT

In this chapter the authors first explain the recently created European Higher Education Area and its implications over instructors' and students' roles. They also analyze how e-learning management systems are contributing to modify higher education around the world, and which are the benefits and the challenges associated to their use. In this new educational scenario, the authors discuss the importance of monitoring students' and groups' activity and performance, and some of the monitoring tools already available in the most popular learning management systems are reviewed. Then, after identifying the informational necessities of online instructors and students, the authors propose a data-analysis model to assist instructors by providing them with easy-to-understand and updated visual reports. Instructors can use these reports to classify students and groups according to their activity and learning outcomes, track their evolution, and identify those who might need immediate guidance or assistance.

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INTRODUCTION

In the period 1998-2009, the development of Web-based groupware tools has involved a Copernican revolution in higher education worldwide, leading to an increasing offer of online courses (Allen & Seaman, 2008). Correspondingly, traditional procedures for measuring students' activity and performance are also evolving into more efficient ways of monitoring students' effort in learning processes. As it happens in many other processes from industry or services, monitoring e-learning processes becomes necessary if they are to be improved. Data about the learning process can be used not only to obtain summary information at the end of the semester but also to keep the learning process 'under control' during the semester, e.g., to prevent unnecessary dropouts and low academic results. When conveniently used, current technology allows instructors and students to have a better knowledge on how this learning process is being developed. Therefore, it is not surprising that some of the most popular e-learning platforms are incorporating monitoring tools to assist managers, instructors and students by providing them with critical information on the educational process. Sometimes, thought, it is not enough to provide a lot of data to these agents, either in a numerical or graphical format, since this approach can be time-consuming or not efficient if it is not well designed. On the contrary, it becomes necessary to develop standard data-analysis models that provide, just-in-time, the critical information that each different agent requires. Precisely, one of the major aims of this chapter is the proposal of such a data-analysis model for monitoring students' and groups' activity and performance in online environments. The model aims to: (a) visually identify students or groups with low online activity levels, and (b) visually identify students or groups with poor academic results. At the end, the target is to provide valuable information to online instructors who may establish just-in-time assistance for students and groups at risk.

The rest of this chapter is structured as follows: First, we introduce the recently created European Higher Education Area and explain how it is changing instructors' and students' roles in higher education. Second, we analyze how modern educational processes can benefit from the integration of e-learning management systems (LMS), and also which new challenges arise with their use. Third, we discuss why monitoring students' and groups' activity and performance are critical tasks in the higher education scenario defined by the previous sections. Fourth, we review some state-of-the-art monitoring tools that are being incorporated in three of the most popular e-learning management systems. Fifth, we identify which information should be provided to each of the online learning agents. Finally, we propose a set of graphs that aim to provide useful information that should be offered by any monitoring system.

THE EUROPEAN HIGHER EDUCATION AREA

The Bologna declaration (Van der Wende, 2000) proposes the development of the European Higher Education Area (EHEA) which, in turn, involves a drastic harmonization –both in terms of compatibility as well as comparability– of university degrees among most European countries. According to the Bologna declaration, increasing the international competitiveness and employability of European citizens are some of the main goals to be promoted by the EHEA. Also, in the EHEA framework, it is emphasized the significant relevance of life-long learning processes and the need for a curricular development more clearly oriented to the requirements of the labor markets (Mas-Colell, 2003). In this context, the establishment of an academic system of credits, the ECTS system, introduces a common process to evaluate students work and activities.