Chapter 13
Proposal of a Set of Reports for Students’ Tracking and Assessing in E-Learning Platforms

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ABSTRACT

The teaching-learning process has undergone a deep change with the appearance of new technologies. E-learning environments and, in particular, learning content management systems have provided capacities and tools which have contributed notably to this change. Their use has spread rapidly in the educational environments due to the advantages that they offer: freedom of timetable, ubiquity, tools for the communication and collaboration, etc. However, they still lack a suitable tool for the monitoring and follow-up of the students that allows the instructors, in an easy and intuitive way, to know what is happening with their distance students. This lack of knowledge is, to a great extent, the cause of a higher number of dropouts and a lower students’ performance in comparison to traditional education. Consequently, in this chapter, the authors propose a set of reports, designed from an educational point of view, which help instructors to carry out this task and an architecture software for their implementation.

INTRODUCTION

Information and Communication Technologies (ICTs) are the tools and the support for the advancement in the building of the Knowledge Society. These have been and continue being the engine of social, economic, labour and formative change of the 21st century to respond to a productive sector that needs highly qualified professionals, technologically prepared and requiring constant recycling - “lifelong learning”. Among all available technologies, the World Wide Web is the one that has made the sharing of information and resources possible and effective and, in this respect, it has allowed the democratization of knowledge to advance more rapidly.
In the education field, the use of ICTs has meant a revolutionary change in the teaching and learning process: new ways of communication, new methods of work, new education techniques have appeared and, as a result, a new educational paradigm has emerged. In this new model, students become active subjects and both students and the activities they do are the centre of the learning process. Moreover, instructors help students to learn and they are no longer mere transmitters of knowledge but designers of courses who supervise and assist in the pupils’ learning process (Gonzalez & Wagener, 2003).

There is a wide range of technologies that give support to this new educational paradigm as will be seen in Section 2. One of them is the Learning Content Management Systems (LCMS) which, nowadays, are extensively used in different environments such as educational institutions (universities, high schools, etc), research institutes as well as global enterprises.

These systems provide instructors with different tools with which they design their online courses. These virtual course design tools can be classified in the following groups according to (Edutools, 2008):

- **Communication tools:** Discussion Forum, Discussion Management, File Exchange, Internal Email, Online Journal/Notes, Real-time Chat, Whiteboard.
- **Productivity tools:** Bookmarks, Calendar/Progress Review, Searching within Course, Work Offline/Synchronize, Orientation/Help.
- **Student Involvement Tools:** Groupwork, Community Networking, Student Portfolios.
- **Course Delivery Tools:** Test Types, Automated Testing Management, Automated Testing Support, Online Marking Tools, Online Gradebook, Course Management, Student Tracking.

With regard to the last area mentioned, it must be said that whereas the tools such as quizzes, assessments, etc. generally offered by e-learning platforms in order to assess the student’s performance are appropriate, the student tracking tools still present certain shortcomings (Avouris, Komis, Fiotakis, Margaritis & Voyiatzaki, 2005; Juan, Daradournis, Faulin & Xhafa, 2008; Mostow, Beck, Cen, Cuneo, Gouvea & Heiner, 2005; Pozzi, 2006; Romero & Ventura, 2006; Zaïane, 2001; Zorrilla, Menasalvas, Marín, Mora & Segovia, 2005). They do not allow instructors to thoroughly track and assess all the activities performed by all learners, nor to evaluate the structure of the course content or its effectiveness in the learning process in an easy and simple way.

In fact, these systems provide the instructor with certain information but this is limited and not very significant to make the teaching-learning process assessment. In general, they offer a report with summarised access information such as the dates of the first and the last connection, the number of visited pages, the number of read/sent mails and so on by each student; and another report, about the use of resources (announcements, discussions, etc.) with parameters such as number of accesses and spent time on each one. But, as can be deduced, it is difficult to extract from their analysis the answers to questions like the following: In what topics are our learners working each day? Do they follow the sequence of the course properly? What is the best day of the week in order to propose an activity? Consequently, reports with more information of interest must be defined and developed in order to help instructors in the tracking and assessment of their students and their virtual courses.

Furthermore, it is important not only to define the parameters to be shown but also the way to present them since the reports must be intuitive and graphical so that the instructor, with just a glimpse, can get to know the students’ situation in the course. On the other hand, it is essential that these reports can be generated in real time.
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