Chapter 27
Model for an Interaction Assessment Strategy in Hybrid Learning Including Web 2.0 Resources

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ABSTRACT

Who being a Hybrid Learning teacher in the Web 2.0 era has not made him/herself ask this question: “Are students working effectively while they are not in face to face class?” Sometimes the questions are asked but he/she does not have the knowledge to create an Interaction Assessment Strategy that could provide this information. The authors present in this chapter a Model that provides the steps and data that should result in a much better teaching/learning process. Thus, the Model presents the questions that should be made, the data model that should be worked on, the visualizations that should better fit each type of data and the process of analysis teachers could make to improve different features, such as: the way of presenting information to the students through the year, prevent students’ dropping out and failures, and generally improve the pace of teaching.

INTRODUCTION

Nowadays, the movement from the traditional classroom towards the online one is already an issue. All of us agree the university courses are now under the group of Hybrid or fully online courses. Due to this rapid development of online or blended courses, new ways of keeping track of the amount and quality of work done by students is necessary, since the face to face classes are no longer available or are substituted, in a way, by the online ones. Therefore, new ways of keeping and
eye on the student while working out of sight of the educator is necessary.

One of the more disturbing features for instructors of online education is their lack of knowledge of the activities students perform in the course website. Actually, instructors know of students’ participation by means of different electronic tools. They also have available statistics about students’ accesses and downloads. These statistics are typically shown as dimensional tables, or statistical charts (e.g. bar, lines or pie charts). Web mining techniques and tools provide a different approach to obtain information about students’ activities. However, they are often too sophisticated for the mean instructor. In summary, instructors lack tools to track students’ activity that offer sophisticated analysis of students’ activities and are easy to use.

The more accurate and varied information the e-learning system can provide, the better feedback teachers can work on. This information can be used for several purposes. Firstly, it can give information about the web site usage, so its structure can be improved. Secondly, information about patterns of usage by students can be extracted as in Srivastava, Cooley, Deshpande, & Tan (2000). These patterns can be used as a basis to analyze and enhance students’ performance.

To set up the problem to analyze, firstly there is a brief description of how other Learning Management Systems (LMS) do this analysis of interactions; following to that, there is an explanation of the previous work done in this analysis of interactions, and finally there is an explanation of the analysis of interactions system developed at our department.

How Other LMS Analyze Interactions

In previous studies such as in “E-Learning Platforms Analysis and Development of Students Tracking Functionality” Hijón & Velázquez (2006a) there have been made a comprehensive assessment of these LMS. In particular, it was taken into account the student tracking functionality they presented for analysis of interactions. Among the wide range of systems the market offers, either open source or property code ones, the study considered some of the most relevant ones, such as: Moodle, Claroline, Dokeos, Nicenet, DotLRN, Sakai, OpenUSS, Mindflash, Blackboard and WebCT.

None of these LMS offered good analysis of interactions that usefully help teachers foresee what the students behavior is going to be, neither had a good interface to filter this analysis. Therefore, the result is that the interactions analysis they offer is not used by teachers, thus this may mean this type of analysis of interactions functionality in LMS needs to be improved and publicized. The general way to show the information in these systems is by tabular representation of the information, which results in many cases in the necessity of downloads of the data to other systems for further information processing and graphical visualization that is not always done.

Previous Work in Analysis of Interaction

Teachers need more and more an aid from the e-learning system that provides information about how students interact with it. Thus, some applications that try to resolve the problem of keeping an eye on the student while working out of sight of the educator have already been developed in different areas of e-Learning. In Distance learning management systems, Ramani & Rocha (2000) describe tools for letting instructors easily view student participation in a Web-based class using charts and graphs to display student participation. Reffay & Chanier (2002) identify clusters and cliques within the online class. These tools focus not on the individual student, but rather on class activity as a whole. Although both sets of tools are interesting and potentially useful in aiding the understanding of web based discussion forums, they are not built on an analysis of