

Chapter 9

MIPO Model: A Framework to Help the Integration of Web Technologies at the Higher Education

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ABSTRACT

The purpose of this chapter is to describe the development of a practical model that emerged from the inquiry made. The initial model has been created based on experiences and literature review. After that, it was tested on the information and technology system units at higher school and adapted as a result of four cycles of an action-research work combined with a case study research. This process resulted in a new framework that helps the integration of web technologies, at the higher education, in order to enhance learning, especially for the information and technology area. The MIPO model described in this chapter presents a b-learning instructional design that relates practical information applicable to a number of situations. It combines ideas from different authors and incorporates behavioral, cognitivist, constructivist and socio-constructivist approaches, in order to obtain the benefits of each one. This model is based on what we know about learning theories, information technology and blended-learning. The information, concepts and procedures presented here give support to teachers and instructors, instructional designers and planning teams – anyone who wants to develop effective b-learning instructions.

INTRODUCTION

In the higher education context, besides everything that has been said about the use of e-learning

technologies, we attested the idea defended by the European committee (European ODL Liaison Committee, 2004): Our higher institutions continue to use the traditional education schema promoting an environment based on providing information. This scenario constitutes the best option for many

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students, teachers and institutions. When an institution adopts an LMS (Learning Management System), it does not ensure the integration of Web technologies on the educational process.

However, during this study we had the opportunity to deal with many different experiences on the e-learning domain. Many times the changes occur on the technologies and without any methodological or pedagogical support. For instance, whenever printed documents are replaced by digital contents, using the same communication schema (emitter-receiver) but with more sophisticated tools.

Updated technologies give support to the construction of such a huge set of learning strategies and methods' options that can be as large as our imagination. All technologies should be viewed as work tools and not as an end itself. More important than choosing a tool is the selection of the learning strategy, in order to achieve the defined goals.

We believe that the existence of a model that supports the complex management process of blended-learning (b-learning) may promote the systematization, the usefulness and the organization of the web classroom integration. The MIPO model intends to be a dynamic and flexible structure that offers a large set of orientations in order to conduct a combined learning process.

Unlike the majority of e-learning models proposed (Laurillard, 2006) (Schofield et al., 2006) (Klein et al., 2003) that describe general procedures, the MIPO model gives a special emphasize to the activities design strategies and is targeted to the blended-learning systems, at the higher education.

BACKGROUND

E-Learning Systems

The online environment where we can create, storage and manage the teaching-learning process is

named Learning Management System (LMS). A LMS is a web application in which we can manage teaching process in the perspective of administration/management, pedagogical/Education and technical, using basic communication tools such as: e-mail, forums, chats, and so on, which support the interaction among participants (Pimenta & Baptista, 2004) (Koponen, 2006). For example Luvit, Moodle, WebCt, etc.

Technical System

Technical system is the Virtual Learning Environment (VLE) embedded in a LMS. According to the Britain prototype (Britain & Liber, 1999) we may define two groups of features: The resources and the communication tools.

In the resources area, we may find features such as: The course outline (an overview of the course structure), the model of navigation (allows users to move around the environment), Notice-board (announcements area that may appear as soon as a student logs into the system), a class list and students' homepages (to know the other students or for tutors to get some ideas about students' background), calendar (a calendar tool), search tools (to help when a course structure becomes very large), Metadata (a simple information about an object. It is important to categorize and search objects), Bookmarking (may decrease the amount of time spent when navigating in places frequently used), Multimedia resources (multimedia resources can be accessed and stored within the learning environment) and file upload area (students should be able to upload their own materials) (Britain & Liber, 1999).

In the communication tools area we may find two kinds of communication tools: asynchronous and synchronous. Asynchronous tools enable communication and collaboration over a period of time through "different time and different place" mode. People can interact according to their own schedule. As examples we can outline the e-mail (that can be used to email either the

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