

# Chapter 14

## A Method for Adapting Learning Objects to Students' Preferences

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### ABSTRACT

*The development of information and communications technologies (ICT) in recent years has led to new forms of education, and consequently, e-learning systems. Several learning theories and styles define learning in different ways. This chapter analyzes these different learning theories and styles, as well as the main standards for creating contents with the goal of developing a proposal for structuring courses and organizing material which best fits students' needs, in order to increase motivation and improve the learning process.*

### INTRODUCTION

Throughout history, important technological breakthroughs have completely altered society; new technologies have replaced the previous ones even though they had provided support for a long time. The invention of the printing press by Gutenberg replaced the manuscript. Printing led to the dissemination of information in the

form of books and created interest in literacy, thus encouraging schooling. Then came the telegraph followed by the telephone, radio, the cinema, etc. until the present day Web.

Currently, the Web represents the most relevant technology in communication. It can be described as the key component that has revolutionized and popularized the use of the Internet because it is an open, flexible and very simple communication technology and broadcast medium. This has resulted in a wide range of applications such as

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electronic commerce, electronic banking or online entertainment systems.

New technologies have invaded our daily lives. In the education sector these technologies provided an excellent means of breaking the geographical and temporal boundaries of traditional teaching and learning, revolutionizing, and at the same time changing, the concept of distance education. Thus, the Web has become a basic infrastructure for developing distance teaching-learning processes, resulting in a model known as e-learning. This has led to one of the most important revolutions in the way knowledge is transferred because the computer has become an interactive and easily accessible learning environment.

Knowledge is becoming a valuable resource. Recently, there has been an increasing interest in problems related to knowledge acquisition, especially to the economy and, particularly economic growth. It has been shown that investments in activities and knowledge-based resources are important for the competitiveness of economies. However, knowledge is not something that has emerged in our time; knowledge dates back to the beginning of creation, and thanks to certain kinds of knowledge such as the invention of tools, how and where to hunt, how to grow crops we have been able to progress and evolve. Thus, knowledge, information and technological changes have always been crucial to economic growth.

The growth of Information and Communications Technologies (ICT) has allowed individuals and companies greater access to information and markets. They have consolidated knowledge as a new factor in production because knowledge acquisition determines the ability to innovate in an environment where access to information is increasing. In relation to this, new concepts such as "knowledge management" or "intellectual capital" have emerged and others, being the underlying idea of these concepts, for example high levels of knowledge, skills and competencies,

and they are critical to the success of enterprises and economies.

Therefore, in our economic environment, knowledge is an essential element in the information economy. From a business perspective, and in a broader sense public administration, efforts have been made to incorporate knowledge as an asset capable of creating a competitive advantage and serving clients more effectively.

Within this framework, training is an important factor for the society development. If knowledge is a very important value for the company, employees need to be highly trained and the way to acquire knowledge is training. *Formal, continuous and occupational training* are on the increase in Spain, and in neighboring countries. *Formal training* includes studies leading to a diploma (vocational training) or higher (a Bachelor's, a master's or a doctorate). *Continuous training* is for employees who want or need to improve their knowledge and skills. So, this kind of training is aimed at people who have a professional activity and its objective is for the worker to improve the way in which he works or to promote his professional career. *Occupational training* includes all actions designed to prepare the unemployed in order to prepare them for do a particular job. To a greater or lesser extent, these three areas of training are demanding new educational models, adapted to the growing needs of an increasingly global and interdependent society.

Learning is a complex process where student motivation, teacher, learning material and several other aspects interact. The traditional classroom teaching is changing more and more into a virtual environment where different issues about learning have to be taken into account. The basic learning concepts remain the same regardless of where studying takes place. Students have to be motivated in the learning situation and the material has to be readily available. Learning has dramatically changed over recent decades when technical revolution has brought different opportunities to learn via the Internet (Kanninen, 2009).

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