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## **Chapter XXII**

# **Relevant Issues for the Design of a Successful Web-Based Instructional System: MODASPECTRA**

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### **ABSTRACT**

*Instructional systems are aimed to support and partially automate the instructional process on a subject domain, ranging from a simple lecture to a whole degree. The interest in designing Web-based Instructional Systems (WbIS) needs no more to be outlined. In the last few years, there has been a huge diffusion of such an approach to support and partially automate the instructional process. The term Instructional Systems Design (ISD) refers to the process of instructional program development from start to finish. Many models exist for use by different levels of instructional designers and for different instructional purposes: what is missing in the current literature is to show how these models could be used to implement “real-life” examples of Instructional Systems. This chapter is aimed to fill this gap, by discussing each phase of the ISD with respect to the implementation of a WbIS for training Specialists in Motor Disability Assessment (MODASPECTRA). The project ended*

*in the implementation of a successful WbIS; in fact, the Dublin School of Physiotherapy received approval from the University College Dublin, Ireland, to offer one of the courses belonging to the MODASPECTRA educational package as a distance learning certificate course from the coming academic year. The course has been renamed to “Outcome Assessment in Motor Disability.” Directed mainly at physiotherapists throughout Ireland and Europe, the course consists of standardized and validated measures to be used before and after treatment to evaluate the effectiveness of the intervention. It could also be relevant to the practice of other health professionals. Therefore, we strongly believe that this chapter may be of great interest for any Institution willing to start its own effort in building WbIS.*

## INTRODUCTION

Instructional systems are aimed to support and partially automate the instructional process on a subject domain, ranging from a simple lecture to a whole degree. Nowadays, instructional systems make extensive use of network technologies, mainly the Internet and the World Wide Web, because of their flexibility and reusability. Aggarwal and Bento (2000) classified instructional systems in four categories according to the time and place dimensions of their teaching environments. The focus in this chapter is on the discussion of a Type IV learning environment, where:

*... education and human contact are available any time from any place. Students can learn from home, office or wherever they are, by accessing Web-based lectures, tutorials, materials, and books, completing and submitting Web-based assignments, exercises and research, interacting in Web-based forums and taking Web-based quizzes and exams (Aggarwal & Bento, 2000, p. 5).*

Usually, such systems are referenced in literature as Web-based instructional systems (WbIS). The interest in designing WbIS needs no more to be outlined. In the last few years, there has been a huge diffusion of such an approach to support and partially automate the instructional process. The claim that more than 2000 institutions in 80 countries have been adopting, over the years, WebCT (<http://www.Webct.com/>), one of the most widely used Web-based authoring/delivery system, may be interpreted as an indicator of the widespread interest in WbIS.

Instructional Systems Design (ISD) refers to the process of instructional program development from start to finish. ISD may be simply stated as the process providing a means for sound decision making to determine the “who, what, when, where, why and how” of education and training. The concept of a systems approach to education is based on obtaining an overall view of the instructional process (Clark, 2000).

The most widely applied instructional design theory is largely based on the work of Gagné and his associates (1965) at Florida State University. This approach assumes a cumulative organization of learning events based on prerequisite relationships among learner behaviors:

*Gagné’s original work was based on the experimental learning psychology of the time, including paired associated learning, serial learning, operant conditioning, concept learning and gestalt problem solving. Recent versions of his*

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