Chapter 18
Web-Based Course Design Models

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ABSTRACT

This study presents the results obtained from a literature review on Web-based instructional design models in order to form a basis for Web-based course design practices. The pioneering studies in literature mainly focused on the components of Web-based instruction and how to direct learning processes in an interactive environment. The studies that proposed design models for Web-based courses were generally based on literature, so they did not sufficiently reflect how the components of a model would be implemented in design practices. In the relevant literature, studies based on authentic design cases are limited. These studies, in which design efforts and processes are described in narrative form, did not go beyond specific contexts and could not be regarded as models. Consequently, there is a need for more studies that provide guidance on how design instructions should be implemented so as to address and resolve the problems that may be encountered in this process.

INTRODUCTION

Today, many institutions, particularly higher-education institutions, organizations and companies organize Web-based courses and seminars, because such environments provide learning practices that eliminate time and place limitations, reduce education costs, support multimedia and are highly interactive.

Web-based instruction (WBI) presents many opportunities for the benefit of learners and teachers. Many learners who suspended their education or dropped out due to the limitations of the traditional delivery methods find the opportunity to continue their education via WBI, doing so in a way that is more suitable to their lifestyle, and thus join the community called the "new majority" (Ehrmann, 1990). However, the report by Ritchie and Hoffman (1997) stated that detailed analysis should be conducted in order to design teaching for the Web and perform teaching on the Web, and it should be examined how the

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potential of the Web can be used in accordance with the principles of instructional design. In fact, the Internet has long been used as a means to distribute and share information. Efforts and studies in regard to e-learning continue to attract attention worldwide. However, there is a noticeable insufficiency of research on how teaching can be carried out through the Internet or how it can be transferred to the Internet environment (Burke, 2005; Tuzun, 2001). Today, many instructors, particularly those working at higher-education institutions, are directed to move their existing courses to the Web environment. They are, however, forced to go through this transformation through trial-and-error due to a lack of sufficient research in the literature (Koontz, Li, & Compara, 2006; Lightfoot, 2000). Therefore, electronic contents that present the curriculum contents in hierarchical sequence, but aren't blended with the appropriate pedagogy, are produced.

According to Snyder (2009), new theories and models of instructional design are necessary in order to design teaching through use of the new technology and tools provided by the Internet. The study by Foshay and Bergeron (2000) revealed that there is a big difference between the distribution of information and the teaching of information through the Internet. Instructional designers need guidance on how to use these new tools and technologies effectively to develop learning and teaching in different environments (Koontz et al., 2006; Reigeluth, 1999). Additionally, the widespread use of Web-based environments considerably affects our stance in regard to learning strategies (Krämer, 2000).

Significance of the Study

Design models intended as means of guidance in the process of preparing WBI applications give educators and designer a clear pathway. Within the suitable WBI design model, blending the elements of technological and instructional design elements would allow a more effective implementation of the WBI application in a shorter time. In this study, results obtained from a literature review on the design of WBI applications were examined, and approaches, strategies and models proposed in related studies for providing a basis for WBI applications were presented.

Research Questions

The rapid developments in Web technologies and the increasing accessibility of information and communication technology (ICT) have made the potential use of these technologies in instruction a main subject of research. Today many instructors and instructional designers are asked to design online courses or transfer existing programs to distance education (DE). However, in the process of designing courses for the Web environment, educators and instructional designers have difficulty implementing defined pedagogical strategies, and are torn between technology and pedagogy. This yields learning environments in which outdated pedagogies are repeated in a new form, giving rise to the question of how pedagogic strategies should be transferred to DE in e-courses. In conclusion, current issues involve determining the components of instructional design and development processes for Web-based courses, and showing how these components can be integrated to guide Web-based learning practices.

BACKGROUND

Design and Model

Charles Eames (1907-1978), a well-known industrial and graphic designer, defined design as "a plan to arrange elements to reach a specific goal effectively" (Hevner & Chatterjee, 2010). In other words, design is a body of instructions based on information that is transformed into a form from which people can obtain benefit. To put it more simply, it concretizes the instruction