Chapter 3
Factors Determining Learning Object Quality for People With Visual Impairment:
Integrating a Service Approach

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ABSTRACT

Determining the learning object quality presents a special complication because we must consider the characteristics of a software application and an instructional element; the above is complicated by the inclusion of the disability issue because there are factors that must be considered in a special way. The chapter has the objective of presenting which are the main factors that must be considered when developing learning objects for people with visual impairment. The instruments for determining learning object quality usually only consider the area expert perspective, without considering the user opinion. For the above, it is proposed to integrate aspects of service theory in the quality determination in order to generate learning objects that also provide greater satisfaction of use to the student. The chapter also presents example questions that can be used to assess the proposed quality factors.

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INTRODUCTION

In order to properly start this chapter its necessary to define some basic concepts such as: Learning Object, Services Theory, Service, Service Quality and topics such as the application of e-learning to disability.

The term Learning Object (LO) was popularized in 1994 by Wayne Hodgins when he named the CedMA working group as "Learning Architectures, APIs and Learning Objects". There is not a fully accepted definition of the Learning Object term, a definition is: "It's a digital or non-digital entity, which can be used, reused or referenced during the learning supported by technology" (Aguilar, Zechinelli & Muñoz, 2003). There are 3 basic characteristics of a learning object: Accessibility, Reusability/Adaptability and Interoperability (Aguilar et al., 2003).

In the proposal, the Services Theory has been integrated, this with the purpose of closely linking the student (user) in the LO quality determination.

Because an LO is a software product, it is necessary to identify what quality aspects any software product must meet (Velázquez, 2007). The software quality is the fulfillment of the functionality and performance requirements explicitly established, of the development standards explicitly documented and the implicit characteristics expected of all professionally developed software (Pressman, 2006).

For the quality determination of the software component in a learning object, the ISO 9126 standard can be used (Velázquez, 2007). The quality factors of the ISO 9126 standard provide an excellent checklist to evaluate the quality of a system. The ISO 9126 standard identifies six key attributes of quality: Functionality, Reliability, Ease of use, Efficiency, Ease of maintenance and Portability (Pressman, 2006).

In the LO quality determination, the existence of technical, pedagogical, content and aesthetic and ergonomic aspects is distinguished (Velázquez, Muñoz, & Garza, 2007).

In relation to the technological elements are those that allow an LO to provide the advantages that are attributed to products made under the paradigm of object-oriented development such as reuse and adaptability (Velázquez, Muñoz & Alvarez, 2005); It is also necessary to consider the properties of any quality software, such as error-free operation (Velázquez et al., 2007).

Within the pedagogical elements are all those that facilitate the teaching-learning process such as the examples used and the possibility of experimentation and evaluation; only to name some of them (Velázquez et al., 2005).

In the content elements there are those that give information about the complexity of the topic and the level of detail with which the content is addressed (Velázquez et al., 2005).

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