Chapter 11

Modelling and Designing the IMS–LD Models for Evaluation Space of a New Learning Management System

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ABSTRACT

The context of this work is that of designing an IMS-LD model for collaboration space of a learning management system (LMS). The work is specifically in the field or seeking to promote by means of information technology from a distance. The approach is to first think about the conditions for creating a real LMS between learners and designing the IT environment that supports this LMS. In this chapter, the authors try to adapt the IMS-LD model with a collaboration model for learning management system based on the social constructivism.
INTRODUCTION

In the 20th century, there was an international movement in favor of e-learning integration in higher education. This movement has been operationalized due to the variety of the educational offer by universities, which most have opted to diversify knowledge dissemination platforms to meet the needs of their target public. E-learning is promoted through LMS: integrated systems offer a wide range of activities in the learning process. However, the LMS do not offer personalized services and therefore do not take into account the aspects of personalization such as the level of knowledge, interest, motivation and goals of learners. They access the same resource sets in the same way.

In fact, we present an easy evaluation model of LMS to create and administer the educational content online. Therefore, it is necessary to find a method to model all LMS types. In order to modeling the evaluation space of LMS we have based ourselves upon the IMS-LD specification focusing on learning theory that was judged the most important and relevant to our modeling, namely the social constructivism. Then, this learning theory which have inspired for a long time the design of computer applications are combined and put into perspective with several emergent pedagogical functionalities to build an original modeling for our evaluation space of LMS. This reveals that this proposed modeling that is presented to readers here looks for ways to leverage technology for learning by considering users as being human actors and not human factors (Henri and al., 2005).

The IMS-LD specification or instructional design engineering uses pedagogical concepts, allowing to model learning units. IMS-LD takes into account a wide variety of teaching models it is there its flexibility. A course plan extract of a general or specific database can be modeled with IMS-LD, through the description of the different roles, activities, environments, methods, properties, conditions and notifications. It is used to transform the course plans into formal learning units (UOL) that can be performed with an IMS-LD editor based on an engine such as Coppercore (Alfanet project, 2008). These executable units can be designed from the beginning using an editor such as Reload (Bolton, 2005).

During the last decade, the LMS e-learning platforms have evolved considerably. However, several modeling of LMS platforms have been developed previously (Sadiq and al., 2010; Tonye and al., 2010; Chouchane, 2012; Brunel and al., 2015; Née Dahmani Farida, 2010), but they have been abandoned because platforms’ life cycle is changing apace. Therefore, we have conducted a comparative and analytic study on free e-learning platforms based on an approach of evaluating the e-learning platforms quality (Ouadoud and al., 2016; Ouadoud and al., 2016; Ouadoud and al., 2017; Ouadoud and al., 2018). Based on these various research works, which seemed to us incomplete, we proposed a modeling portrait of a designing an IMS-LD evaluation model for LMS platform. This latter is anthropocentric and relies on a learning conception that is located at the intersection of the most used learning theory. Indeed, the idea is to orient the design work research towards a great and optimal compatibility between the services offered by e-learning platforms and the needs of all users, particularly learners, for better optimization of online learning.

To concretize our modeling work, we present in the section “Theoretical approach” the different theories of learning used for the modeling of this space, namely the traditional pedagogy, behaviorism, cognitivism and the social constructivism. We also present in “Concepts” section, the online learning specification: IMS-LD and Atlas Language Transformation. Then, we present in the section “Model-driven
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