Chapter 9

Interoperability, Learning Designs and Virtual Worlds: Issues and Strategies

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ABSTRACT

Given the relatively high costs associated with designing and implementing learning designs in virtual worlds, a strategy for the re-use of designs becomes imperative. IMS LD has emerged as the standard for the description and expression of learning designs. This chapter explores some of the issues associated with using the IMS LD specification for learning designs in virtual worlds such as Second Life and multi-player online role playing games such as World of Warcraft. The main issues relate to the inadequate description of collaborative activities and the inability to alter the design ‘on-the-fly’ in response to learner inputs. Some possible solutions to these problems are considered.

INTRODUCTION

Since 2003, the virtual world of Second Life has captured the imagination and ire of the general public, on the one hand concerned at the implications and complications for a first life, and on the other intrigued by the possibilities that such a flexible environment affords. Educators fall into this latter category. Higher education institutions have been quick to spot the possibilities for innovative teaching and learning in worlds such as Second Life, Twinity and Active Worlds. Given the escalating demands on educators’ time and the increasing scrutiny given to the quality of education, it is prudent to consider the possibilities afforded by reusability of key components of educational designs, in turn leading to greater time efficiencies. Instructional Management System Learning Design (IMS LD) is a standard that has emerged as a way of describing learning activities while emphasizing the possibility of reuse, interoperability and adaptation.

This paper will briefly describe the IMS LD system and the nature of Massively Multiplayer Online Role Playing Games (MMORPGs) such as World of Warcraft, EVE Online and Ever-
Quest II, and Multi-User Virtual Environments (MUVEs) such as Second Life, Active Worlds and Project Wonderland, before considering how these might interact. Two sets of issues relating to MMORPGs, MUVEs and IMS LD have been identified: (1) those issues not specific to MUVEs and MMORPGs but still significant to them, and (2) those issues more specifically relevant to them. Various strategies have been formulated to overcome these challenges and a discussion of these will constitute the latter part of this chapter.

What is ‘Learning Design?’

Learning Design provides a vocabulary for describing teaching and learning processes, and is itself pedagogically neutral (Koper & Olivier, 2003: p. 2). The design becomes explicit and can be reflected upon by the designers themselves or by others who may further refine the design and share it within a community (Koper & Tattersall, 2005: p. 3, Koper & Manderveld, 2004: p. 538). Instructional Management System Learning Design (IMS LD) has emerged as the standard. It allows the expression of lesson plans as formally expressed Units of Learning (UOL). Learning designs with this specification are expressed in Extensible Markup Language (XML), making them machine-readable, i.e. learning designs can be run using IMS LD compatible software such as CopperCore or LRN (which can be embedded within a learning management system), rendering the delivery and management of courses more economical (Koper & Tattersall, 2005: p. 3; Burgos, Tattersall & Koper, 2007: pp. 2661-2662).

IMS LD is based on Educational Modelling Language (EML) created by Rob Koper and his team at the Open University of the Netherlands (Koper & Tattersall, 2005: pp. 2-3). It is defined as ‘a semantic information model and binding, describing the content and process within a “unit of learning” from a pedagogical perspective in order to support reuse and interoperability’ (Koper, Rodrigues-Artacho, Lefrere, Rawlings, & Rosmalen, 2002: p. 7; Amorim, Lama, Sánchez, Riera, & Vila, 2006: p. 38). Building on this language, IMS LD was designed to ‘to provide a containment framework of elements that describe any design of a teaching-learning process in a formal way’ (Koper, Olivier and Anderson, 2003 cited in Caeiro-Rodriguez, Llamas-Nistal & Anido-Rifón, 2005: p. 4).

The IMS LD specification describes a set of activities (learning and support) to be performed by participants with either the roles of learner or staff, in environments consisting of resources and services (Caeiro-Rodriguez et al., 2005: p. 4; Amorim et al., 2006: pp. 39-40). These elements are organized according to a theatrical metaphor, i.e. role-parts are those roles assigned to activities; an act may consist of several role-parts which may be performed synchronously; acts performed in sequence constitute a play; and several plays may be considered sequentially in a method (Koper & Olivier, 2003: p. 6; Caeiro-Rodriguez et al., 2005: p. 4; Hernández Leo, Asensio Pérez & Dimitriadis, 2004: p. 351). There are three levels of LMS LD, designated A, B and C with A being the entry level. Levels B and C offer more flexibility with the introduction of notifications and conditions. Even so, IMS LD is a relatively new specification and the implementation of the standard is patchy and has not been implemented on a large scale (Koper & Tattersall, 2005: p. 4).

**MULTI-USER VIRTUAL ENVIRONMENTS (MUVEs) AND MASSIVELY MULTIPLAYER ONLINE ROLE-PLAYING GAMES (MMORPGs)**

A Multi-User Virtual Environment (MUVE) is a computer-, server- or internet-based virtual environment that allows participants to move around and use various forms of communication (text chat, voice chat or instant messaging). It allows
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