

Chapter VIII

Distributed Learning Objects: An Open Knowledge Management Model

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Abstract

This chapter analyzes the emergence of learning objects as a dynamic and interactive relationship between technology and the organization. We examine the way that organizational objectives are embedded within selected technologies. In other words, how is the selected technology addressing the organization's needs? Further, we argue for a socially-constructed model of knowledge management. Specifically, we utilize Demarest's (1997) four-step process of the construction of a knowledge economy. From these processes, via a constructed technological system, a learning object economy emerges, which includes various constituents: the 21st century learner, the subject matter expert (university professor),

vendors who support or enable knowledge management, and populaces that harvest and benefit from the collection of knowledge.

Introduction

As state and federal funds diminish and as higher education resources and university budgets become more restricted, postsecondary institutions are becoming increasingly entrepreneurial in pursuing and developing technological solutions. Meyer (2002) describes a changing marketplace, increasingly global in orientation, where technology enables the provision of adult education, executive training/retraining, competency-based programs, and education to remote geographical areas. Knowledge management,¹ in higher education, is a way to retain and manage knowledge products. As higher education organizations increasingly interact with other organizational types, such as corporations, consortia, and other educational institutions, knowledge products become critical in the exchange process. Technological systems are designed to manage knowledge and are situated in social systems with corresponding cultures, values, and beliefs. As such, higher education, as an organizational structure and a social system, must consider processes, policies, and embedded assumptions about technology, teaching, and learning, not only within their own institution, but also across those with which they interact.

The trend toward knowledge management is evidenced in the myriad of technological artifacts that have emerged to capture, categorize, and manage learning objects. During their evolution, learning objects have come to be defined in a number of ways, depending on the context and culture from which they emerge, for example, computer science, education, instructional technology, and so on. For our purposes, we define a learning object as any digital asset that is intended to be used to achieve a learning objective and can be re-used in different contexts. Learning objects may be data or data sets, texts, images or image collections, audio or video materials, executable programs, courses offered through Learning/Course Management Systems (L/CMS), or other resources that can be delivered electronically. Learning objects should be re-useable and re-purposeable over time and location and interoperable across systems and software (see Downes, 2002; Robson, 2001; Wiley, 2000). Additionally, learning objects can be combined or aggregated in different ways providing the potential for individualized learning experiences for specific

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