

# Chapter XXXIII

## Using and Evaluating Learning Objects for Online Courses in Vocational Education

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### ABSTRACT

*The use of learning objects, such as videos, interactive games, and tutorials, has become increasingly popular in online vocational education. Used to reinforce concepts, to allow students to review subject matter, and to help students become more adept at procedural tasks, learning objects can enhance learning in online environments. This chapter presents an overview of learning objects, framed in a study that resulted in an instrument that can be used for student evaluation of learning objects. Also included is a discussion of the future of learning objects in online vocational education.*

### INTRODUCTION

Learning objects in online environments have been used as a content tool to enhance learning in adult and technical education. Learning objects are defined as small units of digital educational materials that can be used flexibly and in a variety

of formats (e.g., videos, interactive games, and tutorials) to enhance online lessons. Learning objects “decompose content into granular pieces of information that can be stored, retrieved, and reused in instruction” (Jonassen & Churchill, 2004, p. 32). They can be used individually, or they can be linked together in units to form a

course (Hamel & Ryan-Jones, 2001). Polsani (2003) notes the three functional requirements of learning objects as being accessibility, reusability, and interoperability.

Learning objects are being used increasingly more often in e-learning as teaching tools to help students understand concepts. They are easy to use, and can be reused in different contexts (making them cost efficient) (Conceição, Olgren, & Ploetz, 2006). However, because they are fairly easy for anyone to develop and use, issues of standards and best practices may be of concern. For example, Polsani (2003) states that [“The terms *Learning Objects* (LOs) and *Reusable Learning Objects* are frequently employed in uncritical ways, thereby reducing them to mere slogans. The serious lack of conceptual clarity and reflection is evident in the multitude of definitions and uses of LOs” (para. 1, italics from original)]. Also of concern is the evaluation of learning objects. As in traditional classroom environments, evaluation of course materials is important, and the online environment adds another dimension to evaluation. However, most articles on online training materials fall short when it comes to student or participant evaluation of those materials. Few studies are grounded in the use of valid and reliable instruments to evaluate learning objects and other online training materials. Michalski and Cousins (2001) note that training providers often view evaluation as having mixed purposes, both instrumental and symbolic, that are used “mostly to highlight training merit and worth and to sustain and expand training budgets” (p. 37). The use of computer-based and online training has soared as advances in technology have made it easier for instructors, trainers, and curriculum developers to put course materials, including learning objects, online. This chapter presents information on the use of learning objects in the online classroom. The discussion on learning objects is framed in a study of learning objects conducted in an online course at a vocational college.

The successful use of learning objects incorporates the following constructs: effectiveness, efficiency, and appeal (Reigeluth, 1999). Effectiveness is how well the learning objects work relative to student learning. Efficiency is defined by the level of effectiveness of the instruction divided by the time of the instruction. The level of appeal is the extent to which the learners enjoy using the learning objects. The study to be discussed also resulted in the development of a valid and reliable instrument to measure all three constructs (effectiveness, efficiency, and appeal) important in student evaluation of learning objects. Also included in this chapter is a discussion of the future of learning objects, and the implications for their use in the practice of vocational education.

## **BACKGROUND**

The study described in this chapter was conducted in a kinesiology online course offered to Occupational Therapy Assistant students (N=20) at a technical college during the spring 2006 semester. The structure of the course included 15 modules of online instruction, optional one-hour open labs held each week when there was a scheduled on-campus proctored exam, online discussion groups, and online quizzes. The open lab was designed primarily for students to review and clarify content, and for hands-on demonstration prior to taking an exam.

Students were given surveys asking their opinion of the effectiveness, efficiency, and appeal of the learning object created for each module. Students enrolled in the online course completed a survey instrument to evaluate each learning object embedded within each module during the course of the semester. Students were given these surveys after each unit of instruction. The survey was customized specifically for the type of learning object used. All survey questions were the same, with the exception of the type of learning object noted on the survey.

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