Chapter XVI

Creating a Patchwork Quilt for Teaching and Learning: The Use of Learning Objects in Teacher Education

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Abstract

This chapter explores the use of learning objects within the context of teacher education. The authors argue that learning objects can be useful in teacher education if we both create and code learning objects appropriately to the needs of the teacher education community. The chapter begins with framing the teaching and learning issues associated with the use of learning objects in higher education. Next, the chapter introduces a method for generating and marking up learning objects; examples are described where learning objects are created and coded to address the teaching and learning needs of teacher educators and teachers. The authors conclude with a discussion of the issues and prospects for the use of learning objects in teacher education.
Introduction

The challenge with a quilt like this is each of these squares was made by different hands. So I have to bring all these different squares together in a balanced and harmonious design.

~ Anna, Master Quilter

How to Make an American Quilt (1995)

While education and business sectors have been shifting to more digitally-based learning and training environments during the last decade, higher education institutions have been slow to make the transition. Creating and sharing teaching and learning resources has long presented challenges for educators in K-12 and higher education settings (Reigeluth & Nelson, 1997). This is particularly true for preservice educators, who often lack the knowledge and experience to understand where to find resources while beginning to learn the knowledge, skills, and nuances of their practice. Preservice teachers often lack needed resources during the learning (university-based courses) and practice phases (the field-based experience) of their preparation. The needs evolve as teachers refine their practices throughout their careers.

Among available resources, some have been developed to meet the needs of teacher educators and preservice teachers and made accessible via Web sites and digital libraries. (See for example MERLOT http://www.merlot.org and InTIME http://www.intime.uni.edu/.) Unfortunately, despite a growing number of resources, many are underutilized due to limited knowledge of what is available, how they are coded, and their relationship to needs of teacher educators and preservice teachers. With the emergence of learning object mark-up technology, some anticipated increased access and use leading to a transformation of teaching-learning practices (Hill & Hannafin, 2001); to date, however, this has rarely occurred.

Wiley (2001) defines a learning object as any digital resource that can be reused to facilitate learning. Learning objects can be developed once and reused multiple times, enabling a resource-based approach to production and access (Hannafin, Hill, & McCarthy, 2001). Using metatag technology, digital resources can be indexed, retrieved, and repurposed to support the needs of the given audience. The technology has continued to advance, as has overall interest in the use of learning objects.

Thus, to address the needs of teacher educators, as well as preservice and practicing teachers, we need to increase the capacity to both create and code learning objects appropriately to the needs of the teacher education community. The purposes of this chapter are to frame the teaching and learning issues associated with the use of learning objects in higher education, to introduce a method for generating and...
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