

# Chapter 18

## A Needs Analysis Framework for the Design of Digital Repositories in Higher Education

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### **ABSTRACT**

*As the notion of learning objects has grown in popularity, so too has interest in how they should be stored to promote access and reusability. A key challenge to all repository projects is to understand the various motivations and needs to those wishing to contribute to and access the collection. To date there has been considerable attention given to technical issues of repositories, with much less consideration of how to attend to the needs of those who will use them. This chapter presents a needs analysis framework that was developed to guide the design of a new repository currently being created for the Australian higher education sector; The Carrick Exchange. The project to develop the framework is described, outlining the findings from analysis of literature and existing repositories, with input from a survey of potential users. The purpose of the framework was to distil key issues that should be considered in the design of the repository and we offer it here as an analytical tool that could be applied by others.*

## INTRODUCTION

With the advent and adoption of the Internet it has become easy to share and distribute information. This has generated considerable interest in how digital resources can be stored and organised. In the early years of the Internet, many had visions of “virtual libraries,” a digital analogy to the familiar physical library. More recently as the idea of reusable and sharable “learning objects” has emerged, attention has become focused on digital repositories.

In higher education, the vision is for learning objects developed for specific teaching purposes to be housed in digital repositories in which they are catalogued and described in ways that make the resources accessible across institutions (Littlejohn, 2003b; Littlejohn & Buckingham Shum, 2003). The activities involved in populating and using these repositories would create an economy in which individual academics design and prepare resources appropriate for reuse by others in exchange for access to a much wider range of similarly reusable resources contributed by other individual academics (Malcolm, 2005). In addition, institutions, government bodies, and commercial educational developers could also contribute to such an economy. There is also considerable interest within institutions to make the most of digital resources, a trend that can be observed in the current move to content management systems, though this issue is somewhat separate from the broader notions of the learning object economy.

It is difficult to define a “learning object” with any precision or authority as there is still significant debate in the literature as to what should be regarded as a learning object (see Agostinho, Bennett, Lockyer, & Harper, 2004). For the purposes of this chapter, the term will be used to encompass teaching and learning materials and guides that range in granularity from single files to full courses. As such, learning objects

can be considered items relevant to the teaching and learning process that are made available for others to use and adapt to their own contexts.

Thus, learning objects made available in digital repositories promise a new way of creating learning environments within and outside the traditional boundaries between courses, disciplines, and institutions. Digital repositories that accommodate high quality learning objects could be of assistance to university teaching by increasing the reusability of content thereby:

- Saving time and money in course development,
- Enhancing students’ learning experiences, and
- Engaging teaching staff in a dynamic community of practice.

The basis of digital repositories is the sharing of digital resources. The fundamental premise is that digital resources are submitted according to specified criteria and accessed according to another set of conditions. The submission of digital resources may occur in a variety of ways, for example:

- Contributors freely provide digital resources that may be assessed, enhanced, or peer reviewed before being accessed from the repository (e.g., Apple Learning Interchange, Connexions, and iLumina).
- Only registered members are able to contribute digital resources that may be peer reviewed prior to being made available to repository users; for example, Campus Alberta Repository of Educational Objects (CAREO), Cooperative Learning Object Exchange (CLOE), EducaNext, Education Network Australia (EdNA), Jorum, and Multimedia Educational Resource for Learning and Online Teaching (MERLOT).

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