

Chapter 18

Design and Development of a Reusable Digital Learning Resource: A Case Study Teaching Japanese Script

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ABSTRACT

This chapter describes the collaborative design and development process of a digital learning object in terms of roles, resources and user requirements. The example used to illustrate this process is a computer-assisted language learning (CALL) adaptation of a colour-based method of teaching one of the phonetic Japanese writing systems to zero beginners. This learning object combines as many of the positive features as possible of previous teaching methods with the advantages of mobile learning, facilitating autonomous learning on demand. It is time and cost effective and contains additional resources best supplied by a digital resource. The chapter also discusses the role and development of digital repositories in higher education.

BACKGROUND

There are many definitions of digital learning objects. An early definition by Wiley (2000) states that digital learning objects are ‘small (relative to the size of an entire course) instructional components that can be reused a number of times in

different learning contexts’. In a later paper, Caws, Friesen and Beaudoin (2006) cite Harman and Koohang’s definition for learning objects used in education: ‘learning objects are digital resources of any kind that can be similarly combined, shared and repurposed in different educational contexts’. While Wiley favours the Internet as the mode of delivery for digital learning objects, this is rather

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restrictive. For the purpose of this chapter, we define digital learning objects as any object which enhances learning (a photo, an MP3, a map, etc.), that can be shared in digital form and delivered in various ways (virtual learning environment (VLE), online repository, CD, mobile phone, MP3 player).

Of course, the concept of reusable learning objects is as old as education itself: in particular, teachers have been using multimedia – various kinds of authentic materials – in the classroom for as long as they have been available. These materials, however, could not be shared and could only be accessed in the classroom, greatly reducing the possibility of autonomous use by learners. In addition, every teacher who wanted to use such materials had to build their own portfolio of resources.

In recent years, there has been a large increase in the number of third-level courses delivered online. Courses are either delivered completely online or using a blended approach whereby students may receive some coursework online but they may have to attend a limited number of workshops or lectures on campus. This change in delivery has necessitated a change in the type of course materials that learners are given. Many lecturers facing the challenge of developing materials for online delivery have had to evaluate their own teaching materials and in some cases have either had to redesign or develop teaching resources that match this new cohort's learning expectations and needs. Digital resources are being developed increasingly to meet these needs (Mohan, Greer, & McCalla, 2003).

Won and Shih (2004) are also among the many practitioners at third level who believe that one of the greatest challenges for distance learning is the creation of high quality course materials (lecture notes, references, tests, etc.). They stress the importance of sharing and reusing well-developed learning objects to 'reduce the load on instructors, and to make them available across a wide variety of platforms'. International best practice indicates that the successful development of high-quality

learning objects is collaborative, that there are sufficient resources available in terms of expertise and money and that the objects can be easily shared.

In October 2002 the Massachusetts Institute of Technology (MIT) began an initiative to make available online without any subscription fee all of the educational materials from its undergraduate and postgraduate courses. These materials, including learning objects, but also lecture content of all lectures, are available to anyone. The project is jointly funded by the William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, and MIT. In terms of its sheer size, comprehensiveness, level of coordination as well as its free global access, this project is now taken as an example of best practice for the development and sharing of high quality learning objects.

James Taylor from the University of Southern Queensland Australia, located in an area with a long history of distance education and consequently an international leader in off-campus education, asserts that the growth in the field of instructional design and technology has led to a marked increase in collaboration. He advocates 'a multi-disciplinary team approach, wherein a wide range of specialist expertise is applied to the generation of training programs' (Taylor, 1998, p. 9). Taylor states that the necessary level of expertise for the development of technical teaching and learning systems is usually beyond the skill set of individual teachers and appears to demand the deployment of an expert teaching team, with a wide range of specialist skills. These include specialists in instructional design, systems design, electronic information systems, database design, graphic design, student administration, electronic publishing and project management working alongside subject matter experts. Taylor continues to advocate this structured collaborative method of design and development of content in preference to what he terms 'random acts of innovation'. These random acts of innovation are the result of many individual lecturers spending time and money developing similar learning ob-

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