

Chapter II

Exchanging E-Learning Materials, Modules, and Students

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ABSTRACT

In contrast to other Web-based resources, e-learning materials are not always exchangeable and shareable. Although transferring electronic documents between networked computers has become almost effortless, the materials may often require careful design and a great deal of adaptation before they can be reused in a meaningful manner. This process involves consideration of pedagogic issues such as course curricula, learning outcomes, and intended audience, as well as technological factors including local institutional virtual learning environments (VLE) and any relevant learning technology standards. This chapter illustrates how these issues have been addressed resulting in the successful exchange of e-learning resources at three levels: (1) at content level, where learning nuggets are created and packaged in a standards-compliant format to guarantee interoperability; (2) at the user level, whereby learners or tutors, rather than the resources, are transferred between VLEs; (3) at a higher system level, where the

emerging Web Single Sign-On technology of federated access management is being used to enable truly cross-institutional authentication allowing learners to roam freely in different learning environments.

INTRODUCTION

This chapter discusses the experience of Pennsylvania State University (Penn State) in the USA and the Universities of Leeds and Southampton in the UK in sharing teaching practices and learning resources in geography at undergraduate and graduate levels. This experience has clearly confirmed the need for internationally agreed standards at all stages of resource creation, assembly, and description. That said, a standards-compliant content object does not always remain meaningful let alone reusable after leaving its “birthplace” for another institution. In fact, format compliance is only one of the many contributing factors in any successful exchange process. The fate of any “migrant” content object is highly dependent on its adaptability to different learning contexts, data accessibility rights, and, above all, the unique characteristics of the intended audience in terms of needs, skills, and learning styles. This chapter will examine how e-learning content can best be exchanged at the content, users, and system levels. We consider the recent development of learning technology standards, a wider awareness of pedagogic requirements and the will to utilize information and communication technology (ICT) to enhance the education experience.

SHAREABLE GEOGRAPHY LEARNING AND TEACHING

The DialogPLUS project was originally set up in the expectation that the four collaborating institutions would develop and share innovative approaches in the learning and teaching of geography (Martin & Treves, 2007). The first phase

of the project saw the geography teaching staff at each institution comparing common areas within their existing curricula and identifying elements that could potentially be shared and reused. This was undertaken in a face-to-face project meeting, facilitated by spreadsheet-based summaries of the characteristics of potential materials from each institution. To enable a meaningful curriculum mapping and avoid the distraction of the learning object debate, it was decided the project team would equate a discrete and self-contained learning activity with a “learning nugget,” as discussed more fully in the Preface of this book and in Davis and Fill (2007). Readers who are interested in the origins of and controversy surrounding learning objects should refer to the work of Downes (2000), Wiley (2000), and Friesen (2003).

For the purposes of the current chapter, a DialogPLUS learning nugget in its simplest form must consist of the three core components: a learning objective, activity instructions, and supporting resources. Some nuggets might also include an assessment element, which can be either formative or summative. The cross-curricular mapping exercise provided the teaching staff with an opportunity to revisit and, if necessary, redesign their teaching practice and resources. The process was greatly assisted by the adoption of the DialogPLUS Toolkit, which was developed by project collaborators from education and computer sciences in order to support the design of learning nuggets. The toolkit maintained a nugget database, which embeds schema and metadata comparable with the emerging learning technology standards proposed by the IMS Global Learning Consortium (Bailey et al., 2006). Through the Toolkit, existing and new learning nuggets were arranged in terms of the three core and an optional assessment com-

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