

Chapter XV

Online Learning Activities in Second Year Environmental Geography

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ABSTRACT

This chapter discusses the design, technical development, delivery, and evaluation of two online learning activities in environmental geography. A “blended” approach was adopted in order to best integrate the new materials within the existing unit. The primary aim of these online activities was to provide students with opportunities to develop and demonstrate valuable practical skills, while increasing their understanding of environmental management. A purpose-built system was created in order to overcome initial technological challenges. The online activities have already been delivered successfully to a large number of students over two academic years. Evaluation and staff reflection highlight the benefits and limitations of the new activities, and the chapter concludes with recommendations for others wishing to adopt a similar approach.

INTRODUCTION

In the academic year 2003-2004, staff in the School of Geography at the University of Southampton created two online learning activities for students on a level two unit entitled *Physical*

Geography in Environmental Management. The activities introduced the concepts of managing and querying environmental data, using and developing environmental indicators, analysis, reflection, and decision support. As they worked through the learning activities, the students had

access to a wide range of Web-based resources plus repurposed data from the Environment Agency's River Habitat Survey (Environment Agency, 1998). Their responses to both formative and summative assessments were captured online. Some elements were computer assessed and others marked by the unit tutors. The staff and students were all campus based. These online activities complemented lectures and other face-to-face sessions on a unit that has been taught, in one guise or another, for 20 years at the University of Southampton.

This chapter describes the development and implementation of these online learning activities in terms of the pedagogic opportunities and technical challenges encountered and overcome. It reviews the learning outcomes achieved by the students and discusses their evaluation of the resources. Tutors' reflections on the impact of this innovation are included. The chapter concludes with recommendations, both specific to this unit and for those working in the wider field of technology-supported learning.

The innovations and evaluation were undertaken under the auspices of the *Digital Libraries in Support of Innovative Approaches to Learning and Teaching in Geography* project (DialogPLUS, 2004).

BACKGROUND

Overview of the Unit as Traditionally Taught

Physical Geography in Environmental Management is primarily lecture based; however, the unit is pioneering in many respects. Since its inception, it has been a test-bed for new pedagogic approaches within the School of Geography. The unit is taken by postgraduates and undergraduates, as well as geography specialists and non-geographers. This varied mix of students makes it ideally suited for evolving new and innovative

approaches. Indeed, the unit was an early adopter of the MicroCosm® open hypermedia system (Clark, Ball, & Sadler, 1995); the first in the School to use PowerPoint and subsequently Web-based resources; and the School's own virtual learning environment (VLE) was initially developed to house its resources.

The associated practical elements have developed from paper-based, via early computer techniques to support learning, to the first stages of Web-enabled education. Early attempts at e-learning focussed primarily on the delivery of resources across the Web and the use of simple computer models, rather than engaging students with any meaningful interaction, other than choice of options and parameters for modeling. The opportunity, within the DialogPLUS project, to address this perceived need for engagement, coupled with increasing numbers of students, provided the impetus for further change.

The Pedagogic Approach

A learning environment is a place where people can draw upon resources to make sense out of things and construct meaningful solutions to problems. (Wilson, 1996, p. 3)

For more than 20 years, tutors on this unit have adopted a constructivist perspective, progressively evolving an approach that embeds learning in "realistic and relevant contexts" (Honebein, 1996, p. 11). Practical elements give the students opportunities to learn in different ways, developing a variety of skills. The previous practicals involved electronic resources developed in MicroCosm® (see www.vmsi-microcosm.com). Advances in technology, primarily Web-based delivery, offered the potential for more experiential student learning, without a major change of rationale. This remains the activity-based enhancement of student learning in an alternative environment to lectures.

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