

Chapter I

Developing E-Learning in Geography

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ABSTRACT

Technologies offer a range of tantalizing potentials for education—in terms of providing access to media-rich context and for students to visualize and interact with learning materials, as well as a variety of mechanisms for students to communicate and collaborate with their peers and tutors. This book describes the findings of an interdisciplinary research project, which provides a contextualized case study of a concerted attempt to integrate e-learning in one discipline, geography, across an international context. This chapter outlines the learning philosophies and learning strategies that inform the development of e-learning materials, focusing on a particular discipline context. The chapter authors come from a range of disciplines: geography, education, and computer science. Out of this inter-disciplinary collaboration has come new understanding of the range of approaches to learning (by the geographers) and new understanding of the enthusiasm of subject specialists (by the non-geographers). We will also report on understanding developed through working with colleagues in another country. In particular

we have gained valuable insights into the challenges associated with carrying out interdisciplinary research in this area, as well as working in an international context. At the heart of the work reported here is the notion of creation and use of learning materials for geography. We set down some definitions of learning materials to begin with. We critique the widely used “learning object” concept as being computationally convenient, but restrictive, and argue for a more specialized term that better describes the discipline context. Some definitions demand that a learning object stands alone without reference to external resources. Geography teachers usually want their learners to engage with Web-based materials. Geographers want their students to tap into a wide variety of digital resources out there in cyberspace that inform them about the world. They wish to guide the students through the resources and their uses, empowering them to make their own explorations in the future. To import materials and hermetically seal them within learning objects potentially sterilizes them and presents an oversimplified view of the world. This argument leads to the definition of a learning material unit (“nugget” was the shorthand we debated and developed in the JISC-funded DialogPLUS project, part of the Digital Libraries in the Classroom program) as materials for student use with one or more activities designed to develop understanding, combined with student evaluation of the knowledge gained (tests, exercises, reflections). Nuggets connect to external digital resources held in libraries, repositories, or Web sites. This chapter also illustrates how e-learning has developed over time within a master’s program, initially in one university but now involving collaboration between three. We conclude by drawing lessons for developing e-learning in geography.

INTRODUCTION

The aim of this chapter is to review the learning philosophies and strategies that geographers need to be aware of when preparing e-learning materials. Our review is informed by collaborations between geographers, educationalists, and computer scientists in the course of the DialogPLUS transnational project, supported by the Joint Information Systems Committee (JISC) of the UK Higher Education Funding Councils and the National Science Foundation (NSF) in the United States, involving four institutions, Pennsylvania State University, the University of Leeds, University of California at Santa Barbara, and the University of Southampton. More details of this project are described in the Preface to the book.

In the chapter we present our perspectives on the issues, controversies, and problems as they relate to e-learning in geography. We compare and contrast the different approaches to e-learning

as exemplified in the contributions and main themes of the book. We discuss solutions and make recommendations in dealing with the issues, controversies, and problems presented.

We begin with a definition of e-learning, which is expanded to explore the variety of forms and settings that it can take. Then we review the value of e-learning to the teacher and student. All this draws on the collective experience of DialogPLUS project participants. In the second part of the chapter we outline learning philosophies and strategies of which geographers developing e-learning should have some knowledge, even if they decide to retain a large part of the approach that has served them well in the classroom. In the third part of the chapter we discuss and critique the nature of the learning object, which has been a focus of thinking in e-learning development. We then report on our use of the more general concept of the learning nugget, which has been developed and tested out in the international collaborative project, DialogPLUS, in which most

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