Chapter XV

Exploring the Nardoo:
Designing Problem-Based Learning Experiences for Secondary School Students

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Abstract

This chapter examines how instructional designers work together in teams to solve problems. It examines the advantages and disadvantages of a team approach to instructional design. This case will explore how a team of instructional designers worked together to create Exploring the Nardoo*, a multi-award winning CD-ROM developed by the University of Wollongong's Educational Media Laboratory (emLab). The case describes key issues related to the design and development of the package from the perspective of a faculty-based multimedia unit, which was established with a strong emphasis on advancing research through innovations in design.*

Introduction

Instructional design is often a process by which an individual designer works closely with a subject matter expert to collect and adapt content for the development of instructional materials. Examples of the types of problems solo designers might face are included in cases (Ertmer & Quinn, 2003), descriptions of design paradigms (Visscher-Voerman, Gustafson, & Plomp, 1999), and instructional design books (Reigeluth, 1999). Research into the instructional design process is also available in works such as the early research by Perez and colleagues (Perez & Emery, 1995; Perez, Johnson, & Emery, 1995) and, more recently, Keppell (2000). Comparatively, little attention has been paid to questions about how teams of instructional designers work together. For example, what happens when instructional designers work in teams to solve problems, and what are the advantages and disadvantages of a team approach to instructional design?

This case will explore how a team of instructional designers worked together to create *Exploring the Nardoo*, a multi-award winning CD-ROM developed by the University of Wollongong's Educational Media Laboratory (emLab). The case describes key issues related to the design and development of the package from the perspective of a faculty-based multimedia unit, which was established with a strong emphasis on advancing research through innovations in design. The case is based on extensive primary research by the author, which was originally carried out to develop an online case for students in a postgraduate course at the University of Wollongong. The data collected and analysed to develop the case included interviews with four of the instructional designers on the team, archival documents and research papers.

This case offers a unique perspective of this well-known project by revealing the experiences of the designers, which provides a behind-the-scenes view of the negotiations and decisions made during the development of the project. The case sets these experiences within the real-life situation of the project, and describes the strategies the designers used to address the problems and how these led to the solutions chosen. The case also draws out principles that can be derived from these experiences and the "lessons learned" by these instructional designers. These will provide insights for other instructional designers grappling with similar issues or situations. The case also explores the "communities of practice" concept from a different perspective by considering the community of practice created by the project team and the influences of external communities of practice with which team members identify.

Background

The notion of "communities of practice" was first introduced by the work of Lave and Wenger on situated learning (Lave & Wenger, 1991). In their conceptualisation, a person builds expertise by gradually becoming a part of a community of practice. This process moves the person from legitimate peripheral participation to full participation. These ideas have sparked interest in how learning environments can be designed to provide "contexts in which learners ... can practice the kinds of activities that they will encounter outside of

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