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701 E. Chocolate Avenue, Suite 200, Hershey PA 17033-1240, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com
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Chapter XVII

Multimedia Learning Designs: Using Authentic Learning Interactions in Medicine, Dentistry and Health Sciences

Mike Keppell, Hong Kong Institute of Education, Hong Kong
Jane Gunn, The University of Melbourne, Australia
Kelsey Hegarty, The University of Melbourne, Australia
Vivienne O'Connor, The University of Queensland, Australia
Ngaire Kerse, University of Auckland, New Zealand
Karen Kan, The University of Melbourne, Australia
Louise Brearley Messer, The University of Melbourne, Australia
Heather Bione, The University of Melbourne, Australia

Abstract

This chapter describes the learning design of two multimedia modules which complement a problem-based learning health sciences curriculum. The use of student-centred, authentic learning design frameworks guide academics and instructional designers in the creative pedagogical design of learning resources. The chapter describes the educational context, learning design of two multimedia modules and suggests a number of strategies for improving the design and development of multimedia resources.

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Introduction

This chapter examines the instructional design of two multimedia modules that utilize authentic learning interactions to teach medical, dental, and health science concepts. Interactive multimedia modules complement the broader goals of a problem-based learning curriculum and enrich the health science curriculum by addressing conceptually difficult content areas. It is essential that the learning design (Koschmann, Kelson, Feltovich, & Barrows, 1996) of self-directed learning modules "should be informed from its inception by some model of learning and instruction" (p. 83). The use of student-centered learning approaches is becoming increasingly popular in medicine, dentistry, and health science curricula as the teaching of problem-based learning and case-based learning assure a close match with real-world clinical cases. This chapter outlines the educational context and then examines two multimedia modules that utilize a case-based learning design. As educators, it is essential that we articulate our learning design for educational interventions from the earliest stages so that we are able to integrate the module into the educational setting and also provide a framework for evaluating the innovation (Koschmann, Kelson, Feltovich, & Barrows, 1996).

Educational Context

The medical course at the University of Melbourne had traditionally been taught using a discipline-based approach. Internal review mechanisms and student feedback in recent years had highlighted a number of deficiencies in the traditional course. In broad terms, these included insufficient integration between the basic and clinical sciences, insufficient attention to teaching communication skills, problem-solving skills, and social aspects of health, and an overload of biomedical detail that was duplicated in subjects originating from different departments. In an effort to remedy these deficiencies and also to incorporate current theories of medical education, a new medical curriculum was introduced in 1999. The pedagogical model for the new medical curriculum incorporates elements of problem-based learning (PBL) and self-directed learning (SDL) (Koschmann, Kelson, Feltovich, & Barrows, 1996). The primary focus of learning in semesters 2 through 5 is through medical problems (known as problems of the week), which are presented to students in small group tutorial settings. A key feature of the new curriculum is the horizontal integration across disciplines and the vertical integration of clinical situations with basic scientific material (Keppell, Kennedy, Elliott, & Harris, 2001).

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