Chapter 1.60
Interactivity in Web-Based Learning

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ABSTRACT

This chapter discusses one of the main features of ICT—interactivity. Drawing from many years of Web-based course design and delivery at the University of Hong Kong, it is argued that enhanced interactivity is the single most important reason why teachers should practice Web-based teaching. The notion of conversational learning community (CLC) as a kind of constructivist learning environment is introduced. It is shown that instructional interactivity, defined as active communication in a conversational learning community between instructor(s), learners, course materials, and links to remote experts and resources, is a central aspect of the learning situation. A practical implementation of the CLC model is presented through describing the interactive features of a Web-based course using WebCT. It is concluded that Web-based teaching actually enhances interactivity both within and beyond the classroom setting.

INTRODUCTION

At the beginning of the 21st century, we are faced with an age of rapid technological development in information and communication. Issues of educational reform never have been more urgent than now. One of the major challenges is how to design our educational system, in general, and our methods of instruction, in particular, in order to produce graduates who are better prepared to take up jobs in a knowledge-based environment characterized by a pervasive use of information communications technology (ICT). ICTs, especially modern digital ones, include various types of computers; digital cameras; local area networking; the Internet and the World Wide Web; CD-ROMs and DVDs; and applications such as word processors, spreadsheets, tutorials, simulations, e-mails, digital libraries, computer-mediated conferencing, videoconferencing, and

virtual reality (Blurton, 1999). Four main features of these modern digital ICTs make them stand out as very useful educational tools: integration of multimedia, flexibility of use, connectivity, and interactivity (Blurton, 1999).

The main focus of this chapter is an examination of just one of these features: interactivity. While interactivity has been a subject of considerable attention in the search for newer and more active methods of teaching and learning (Allen, 2003; Parker, 1999; Simms, 1999, 2000), there still remains a lot to be discussed as to how it can be enhanced in learning situations involving a mixture of Web-based course administration and face-to-face classroom instruction. It is quite clear that the introduction of ICTs into distance learning curricula is crucial in enhancing interactivity, given the situation where teacher and student are separated by distance. It is shown here, based on experiences with courses designed for both distance learners and traditional face-to-face classroom students, where there is unity of time and unity of venue, that the use of the Web, one of the new digital ICTs enumerated previously, along with other accessories and software that together give us what is termed Web-based teaching in a course, plays a crucial role in enhancing interactivity. This chapter is organized as follows. The section that follows defines interactivity and shows the important role that it plays in constructive/active learning theories. In the third section, the main features of a course designed to achieve interactivity are described, and it is shown how interaction was achieved. The fourth section of the chapter points to certain challenges that should be overcome in order to create more opportunities for enhancing interactivity in Web-based teaching in the future.

INTERACTIVITY AND ITS ROLE IN CONSTRUCTIVE LEARNING THEORIES

What is Interactivity?

Studies that focus on interactivity include Daniel and Marquis (1983), Moore (1992), Wagner (1994), Markwood and Johnstone (1994), Laurillard (1993), Barnard (1995), Moore and Kearsley (1996), Parker (1999), Simms (1999, 2000), Bodomo, Luke, and Anttila (2003), and Allen (2003). The key concepts that run through most of these studies include active learning, two-way communication, critical conversation, transactional distance learning (Moore, 1993), and so forth. All these contrast sharply with what would take place in traditional passive/digestive lecture-type instruction.

Moore (1992) offers three types of interactivity, while Markwood and Johnstone (1994) provide four types of interactivity. In Moore's (1992) typology, we have learner-content, learner-instructor, and learner-learner interactivity. Learner-content interactivity is illustrated by a student reading a book or a printed study guide (Parker, 1999). The interactivity or otherwise of the content is very much a function of how the material is structured and accessed. This point is crucial in deciding how best to place course notes on the Web. Instructor-learner interaction is the core of the teaching process. The success of the course design will depend largely on whether the conversation between teacher and learner is such that the learner can increase self-direction and construct new knowledge or not. Learner-learner interaction involves students working together to discuss, debate, and attempt to solve problems that arise in their study of the course materials. Moore (1992) provides practitioners with a very useful framework to discuss how interactivity is achieved in teaching. Indeed, his