Strategies for Enhancing and Evaluating Interactivity in Web-Based Learning and Teaching

Adams Bodomo, University of Hong Kong, Hong Kong

ABSTRACT

Interactivity is often discussed in constructivist approaches to education, which enable the student to evolve, understand, or construct new ideas from existing concepts. Constructivist approaches rely on active participation in the learning situation. Interaction and participation are crucial ingredients in the learning process. But interactivity, as a specific learning concept that underlies the general notions of interaction and participation, is not easily tracked and evaluated. This paper examines how to evaluate interactivity. It outlines a number of criteria and student activities to evaluate success in interactive web-based teaching. These theoretical issues are illustrated in the context of two linguistics courses that involve both web-based course delivery and face-to-face course delivery. Measures taken to achieve interactivity in these courses are discussed before proposing qualitative and quantitative criteria for evaluating interactivity. Teachers in higher education can encourage students to have a more positive attitude through effective ways of increasing interaction, such as structuring the learning environment in such a way achieve a ‘conversational learning community’, a learning model that promotes informal, relaxed, and interactive communities of learners and teachers.

Keywords: Conversational Learning Community (CLC), Evaluation, Interactivity, Learning, Teaching, Web-Based Education, Web-Based Instruction

INTRODUCTION

The main research theme of this paper is an examination of the concept of interactivity in web-based course design to supplement and possibly enhance face-to-face classroom teaching and how it can be evaluated. In many ways then the teaching and learning environment discussed in this paper involves a hybrid or blended course delivery system (Graham, 2006; Olapiriyakul & Scher, 2006; Kennedy & Hinkley, 2009) but one must stress right from the beginning that the paper sets out to discuss mainly the web-based aspects of this course delivery system. So the main research questions from the onset are: how can we enhance interactivity in a web-based course design and management system and how can we evaluate whether or not a course is interactive? What are some of the criteria for evaluating interactivity? This paper sets out to address these research questions and thus aims at making substantial contributions in terms of proposing new ways of enhancing and evaluating interactivity. While interactivity has been a subject of con-
sizable attention in the search for newer and more active methods of teaching and learning (Bodomo, 2006, 2008; Brogan, 1999; Parker, 1999; Sims, 1999, 2000), there still remains a lot to be discussed as to how it can be enhanced and evaluated in learning situations involving a mixture of web-based course administration and face-to-face classroom instruction (Bodomo, Luke & Anttila, 2003). It is shown here, based on courses designed mainly for traditional face-to-face classroom students where there is unity of time and unity of venue, that the use of the web, 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. The paper is organized as follows. The present section gives a broad background discussion of interactivity. We define interactivity and show the important role it plays in constructive/active learning theories. In section two we describe measures taken to achieve interactivity in two courses that form part of a Teaching Development Project. Section three of the paper constitutes an enumeration and a discussion of a number of qualitative and quantitative criteria for measuring and evaluating interactivity.

**Interactivity and Its Role in Constructive Learning Theories**

**What is Interactivity?**

Studies that focus on the term interactivity and its derivatives include Daniel and Marquis (1983), Moore (1992), Wagner (1994), Markwood and Johnstone (1994), Laurillard (1993, 1994), Barnard (1995), Parker (1999), Brogan (1999), Sims (1999) (2000), and Bodomo (2006, 2008). The key concepts that run through most of these studies include ‘active learning’, ‘two-way communication’, ‘critical conversation’, and ‘transactional distance learning’ (Moore, 1991, 1998), etc. All these contrast sharply with what would take place in traditional passive/lecture type instruction as described in Freire (1970). Parker (1999) indicates that ‘interaction can be defined as active learning and can be as simple as pushing the ‘play’ button on the VCR.’ An interesting aspect of understanding the nature of interactivity is an enumeration, within the literature, of different types of interactivity.

Moore (1992) offers three types while Markwood and Johnstone (1994) provides four types of interactivity. In Moore’s 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. 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 us with a very useful framework to discuss how interactivity was achieved in our teaching. Indeed, his notion of transactional distance theory (Moore, 1991, 1992, 1993) has contributed immensely in defining relations between participants, not only in a distance learning situation, but also in traditional face-to-face classroom learning situations.

Markwood and Johnstone (1994) describe interaction as the ‘silent, critical, creative conversation within the learner’s mind that is spurred and supported by the learning environment’. The study outlines four different types of interaction that trigger what it calls critical conversation. The first is interaction with media where individual students scrutinize textbooks, videotapes or any other course material. In our case, this involves major textbooks supplemented by a number of other book sections and course notes. The second is interaction with resources. Here, individual students or groups may collaborate with tools such as those used by professionals, including word processors,
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