Identifying the Strengths and Concerns of OpenCourseware Design: An Exploratory Study

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ABSTRACT

This qualitative, exploratory study investigated the design strengths and concerns of OpenCourseware (OCW) for higher education based on user experience, using the translated Chinese website of the Massachusetts Institute of Technology OCW as a venue for exploration (http://www.myoops.org/twocw/mit/index.htm). Forty-two college students, professors, and e-learning experts in Taiwan were recruited to assess the usefulness of the OCW for learning and teaching on this website. Semi-structured, hour-long interviews were conducted. Fourteen factors—including nine strengths and five concerns—that influence the degree of effectiveness of the design and implementation of OCW were identified and discussed with reference to three major design aspects (technological, curricular, and pedagogical). The implications for better design and use of OCW as an open educational resource (OER) were discussed.

Keywords: Higher Education, Instructional Design, OpenCourseware (OCW), Open Educational Resource (OER), Teaching Innovation

INTRODUCTION

Perhaps the most important effect of the Internet on education so far has been the Open Educational Resources (OER) movement, which has provided free access to a wide range of courses and educational materials (Brown & Adler, 2008; Johnstone, 2005). This movement began in 2002 when the Massachusetts Institute of Technology (MIT) initiated its OpenCourseware (OCW) initiative (Abelson, 2007). Since then, the success of the initiative has motivated many institutions to develop their own OCW (Atkins, Brown, & Hammond, 2007). The importance of OCW for social and educational progress is evident mainly because of its potential value for democratizing knowledge and free education for more people. Yet, while OCW provides individuals with convenient access to information and knowledge, the realization of its full potential for advancing education and knowledge remains to be studied. The extent to which the design of OCW may promote or inhibit its effective educational use by people

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from different cultural backgrounds is especially unclear.

To address this question, this investigation examines the effectiveness of OCW as an learning and teaching tool in higher education from the experience of Taiwanese users, using the translated Chinese website of the Massachusetts Institute of Technology (MIT) OCW as a case for study (http://www.myoops.org/twocw/mit/index.htm). In the following pages, we first consider two different design perspectives (conventional vs. contemporary) and then review the development and use of MIT’s OCW. Next, we introduce the method employed in this study. Finally, we present our findings and discuss related implications for OCW design.

LITERATURE REVIEW

Design of OCW

There are at least three important design aspects to be considered for the development of OCW, including curriculum, pedagogy, and technology designs. Curriculum design concerns planning the content to be taught or learned, and the assessment of the effectiveness of this planning. One traditional view is that a curriculum is a body of specified knowledge to be transmitted (Skilbeck, 1984), involving prescribing what content is important for learners. Such a curriculum design favors well-structured content with the goal of helping learners master specified knowledge or skills. An alternative view is that a curriculum is a dynamic system of knowledge that emerges from self-directed and self-organized learning (Hong & Sullivan, 2009). Related views include, for example, curriculum as process (Stenhouse, 1975), as conversation (Applebee, 1996), or as inquiry (Short & Burke, 2001). From these views, the content to be learned or acquired is less pre-determined or well-structured; rather, they are treated as flexible and adaptive and are co-developed by learners during the process of learning (Zhang, Hong, Scardamalia, Teo, & Morley, 2011).

In terms of pedagogical design, its perspectives can be categorized as knowledge transmission or knowledge construction (Entwistle, Skinner, Entwistle & Orr, 2000; Samuelowicz & Bain, 2001). The former is characterized by teacher-centered, content-driven instruction that emphasizes the passive reception of knowledge by students. Examples of such instructional models include task-driven instructional design (i.e., focusing on design tasks, see Dick & Cary, 1990), Criterion-Referenced Instruction (i.e., focusing on referring to pre-determined instructional criteria for teaching, see Mager, 1975), and Component Display Theory (i.e., focusing on dividing learning and instruction into fixed components, see Merrill, 1983). The other perspective is characterized by learning-driven, student-centered, and constructivist-oriented instruction that encourages students to make sense of the world actively via personal experience. Examples of such design include inquiry-based learning (White, Shimoda, & Frederiksen, 1999), problem-based learning (The Cognition and Technology Group at Vanderbilt, 1990; Hmelo-Silver, 2004), and case-based learning (Schank, Berman & Macpherson, 1999).

Regarding technological design, two commonly discussed design perspectives are Web1.0 and Web2.0. While a precise definition is elusive, Web1.0 design is generally concerned with one-way publishing or knowledge delivery. From this perspective, content is mainly published or broadcasted by the OCW owner. In contrast, Web2.0 design treats users not merely as knowledge consumers but creators who can also comment on, modify, contribute to or enrich the content, and/or even produce new content. Table 1 presents some key characteristics of the three design perspectives.

Use of OCW: MIT as an Example

In 1999, MIT’s provost Robert A. Brown requested that the “Education Technology Committee” of the school consider positioning MIT as a leading provider of distance-learning and e-learning. In the following year the Committee presented ideas associated with the “Open
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