Chapter 10
Flipping the College Classroom:
Participatory Learning, Technology, and Design

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ABSTRACT

"Flipping the classroom" is a pedagogical strategy that replaces the standard lecture-in-class format with opportunities for students to review, discuss, and investigate course content with the instructor in class. There are many ways that a classroom can be flipped, but the underlying premise is that students review lecture materials outside of class and then come to class prepared to participate in instructor-guided learning activities. This chapter provides an introduction to participatory learning and technologies, along with instructional design strategies for flipping the college classroom.

ISSUES AND TRENDS WITH TECHNOLOGY IN EDUCATION

Traditional education fails millions of students: It is a problem of both the quality and scale of a system which is complex, hierarchical, and slow to change in relation to the rapidness of innovation occurring in the market economy (Laurillard, 2008). It is also a system marked by unequal access to knowledge and resources among students perpetuated by inequitable funding for public education (Darling-Hammond, 1995).

According to Laurillard (2008), interactive communications technologies can help address these problems and are needed to achieve educational reform. While educational reform should happen through the teaching community (Lauril-

lard, 2008), it can be achieved through the ideas and practices of "open teaching". As an essential part of the open education movement, open teaching advocates for the availability and use of learning design tools and environments among teaching communities to enable the development of new pedagogies afforded by digital technologies, access to open educational resources becoming available, and achievement of high quality teaching on a large scale (Laurillard, 2008, p. 320).

Learning Management Systems (LMS) and Virtual Learning Environments (VLE) have been such tools and environments used in mainstream education, particularly in higher education, to open up learning opportunities to (more) students and in ways not bound to the time and space requirements of face-to-face courses. Yet, problems with

these tools, systems, and roles of their interpreters have manifested and in many ways challenged their qualification as "open".

Users of learning management systems and virtual learning environments have often been defined by one of three roles—administrator, instructor, or student—with limitations placed on what one can do in the system defined by this role (Lee, 2008). The assignment and restriction of participants in educational experiences to single roles is ultimately an issue of control fueled by financial concerns. Interdisciplinary approaches and resources are often restricted in educational institutions using learning management systems because users are recognized, and thus permitted or denied access to information pertaining only to the courses or departments to which they identified as belonging. In other words, Lee (2008) argued that:

When the student logs on they may well find their way barred, the gates closed, because the system only recognizes them as a student of one discipline. Educational resources then, even within the institution, are not "open." They are controlled, managed, restricted, and channeled. (p. 50)

Opening up education beyond institution walls to members of the public has been just as problematic, in terms of granting access to (potential) learners, as the licensing agreements institutions hold with the software developers of the VLEs have restricted them to limiting access to only paying customers (i.e. registered students). As "gatekeepers", administrators, developers, designers, instructors, and other authority figures have controlled who has access to what information and who is denied. This control has directly determined what has been "produced, promoted, or performed" (Hanappe, 2005, p. 213) by users. As Geser (2007) noted:

At present, there exists little experience in how to effectively support communities of practice through educational repositories. Educational

initiatives, particularly larger national ones, still follow a top-down strategy that tries to deliver a "critical mass" of learning objects to teacher-centered education. What is often not understood is that this delivery mode reinforces the still dominant teacher-centered paradigm of education and runs counter to the goal of innovating teaching and learning practices. In order to see innovative educational practices emerge and flourish teachers and students must be enabled to become creative and share resources that they find useful in certain learning contexts. (p. 4)

According to Hanappe (2005), "the promise of the digital networks as an open distribution medium is that anyone can now publish their work, bypassing gatekeepers and reaching the audience directly" (p. 213). As new forms of content creation and distribution emerge and allow free access to content on the Web, the generation of social capital and knowledge capital, more than financial capital, among users is becoming the focus of participation (Hanappe, 2005).

To address the issue of access to information, Lee (2008) suggested that institutions should not only look to the adoption of open source software as a way to avoid licensing restrictions on use or development of educational material, but that they must also be aligned both pedagogically and politically with the principles of openness in education to make an open platform successful. Such principles of openness in education can be summarized by Willinsky's (2006) "access principle," which holds that "a commitment to the value and quality of research carries with it a responsibility to extend the circulation of such work as far as possible and ideally to all who are interested in it and all who might profit by it" (p. xii).

Thus, the greatest affordance of the Web for educational use is "the profound and multifaceted increase in communication and interaction capability" (Anderson, 2004, p. 42). This increase in capability is "even more evident in Web 2.0 when compared to the set of linked information sources

138

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