Chapter 13
Impact of Web 2.0 on Higher Education

Nada Dabbagh
George Mason University, USA

Rick Reo
George Mason University, USA

ABSTRACT

The chapter addresses the impact of Web 2.0 on higher education institutions. Using Christensen's theory of disruptive innovations, the authors ask whether Web 2.0 is a sustaining innovation that is creating incremental changes in higher education practices as older technologies have, or if Web 2.0 is a disruptive innovation that is slowly easing its way to meet the needs of specialized audiences but ultimately may drive out the conventional education model or turn it on its head. To tackle this question, the authors briefly review the current state of Web 2.0 in higher education, discuss related issues and controversies, and then focus on the impact of Web 2.0 on human, social, and organizational aspects of higher education institutions.

OVERVIEW OF WEB 2.0

Web 2.0 is as much a concept as it is a technology. As a concept, Web 2.0 characterizes themes such as openness, personalization, customization, collaboration, social networking, social presence, user-generated content, the people's Web, read/write Web, and collective wisdom (Alexander, 2006; Jones, 2008; Lindstrom, 2007; Norton &

Hathaway, 2008; O'Reilly, 2005; Sessums, 2006). As a technology, Web 2.0 represents a qualitative shift in how information is created, delivered, and accessed on the web. For example, a wiki is an extremely flexible Web 2.0 technology that enables anyone with an Internet connection and a web browser to create, access, and edit a website, and to determine the degree of control that users can have over the content of this website (Rosen & Nelson, 2008). Web 2.0 as a technology is interchangeable with terms like social software

and social media which are broadly defined as technologies that extend and enhance human communication capabilities (Anderson, 2005; Rollette, Lux, Strohmaier, Dösing, & Tochterman, 2007). Web 2.0 technologies support social interaction and collaboration through various processes and strategies such as the ability to express individual identity, gain awareness of the presence of others, establish meaningful relationships, form purposeful or goal-oriented groups, and share experiences and resources publicly (Dabbagh & Reo, 2011).

Examples of Web 2.0 technologies include experience- and resource-sharing tools such as Delicious, WordPress, and Twitter that enable online/social bookmarking, blogging, and microblogging respectively; wiki software such as PBworks that enables the creation of collaborative workspaces; media sharing tools such as Flickr and YouTube that enable social tagging (Peterson, 2006; VanderWal, 2005); and social networking applications such as Facebook and LinkedIn that enable sociosemantic networking (Seldow, 2007). The proliferation of Web 2.0 technologies is affording the creation of networked learning experiences that foster the characteristics of Web 2.0 as a concept resulting in new social behaviors and pedagogical practices (Alexander, 2006; Cormier, 2008; Carroll, 2008).

The question we address in this chapter is how significant of an impact Web 2.0 will have on higher education institutions. More specifically, is Web 2.0 a *sustaining innovation* (Christensen, Horn, & Johnson, 2008) that is creating incremental changes in higher education practices as older technologies have, or, is Web 2.0 a *disruptive innovation* (Christensen, Horn, & Johnson, 2008) that is slowly easing its way to meet the needs of specialized audiences but ultimately may drive out the conventional education model or turn it on its head? To tackle this question, we briefly review the current state of Web 2.0 in higher education, discuss related issues and controversies, and then focus on the impact of Web 2.0 on human, social,

and organizational aspects of higher education institutions.

CURRENT STATE OF WEB 2.0 IN HIGHER EDUCATION

Web 2.0 is having a pervasive impact on the university as a system as well as on its constituents, i.e., faculty, students, and administrators. For example, studies show that undergraduate students are simultaneously learning and using Web 2.0 technologies and that this state of affairs is affecting students' academic performance even though students are not deliberately or strategically using Web 2.0 technologies for learning (Smith, Salaway, & Borreson Caruso, 2009; Solomon & Schrum, 2009). Rather, such effects represent changes that stem from independent and grassroots activity of students and faculty and may also arise out of enterprise level administrative decisions to implement Web 2.0-enabled applications in specialized needs areas. Research also shows that faculty are increasingly using Web 2.0 technologies to support teaching and learning activities (EDUCAUSE Learning Initiative, 2007). For example, some faculty are using Skype (a Web 2.0-enabled communications tool) in the classroom to enable students to participate first hand in interviews with domain experts, while others are encouraging students to use blogging software (e.g., WordPress) as a platform for the development of e-portfolios which have become an important performance-based assessment tool in higher education (Rosen & Nelson, 2008). Some faculty are also using wiki software (e.g., PBworks) to engage students in collaborative projects that support the creation, editing, and management of content and enable peer and expert feedback (Hazari, North, & Moreland, 2009). Furthermore, the use of online bookmarking technology (e.g., Delicious) is gaining ground as a tool that can help students organize and categorize course information in meaningful ways using tags (keywords or descriptors), and

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