

## Chapter 5.4

# Student and Faculty Use and Perceptions of Web 2.0 Technologies in Higher Education

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### ABSTRACT

In this chapter, the authors provide evidence for the potential of Web 2.0 applications in higher education through a review of relevant literature on educational technology and social networking. Additionally, the authors report the results and implications of a study exploring student and faculty awareness of the potential of Web 2.0 technologies to support and supplement classroom instruction in higher education. Also, using the decomposed theory of planned behavior as the theoretical foundation, the authors discuss factors that influence student and faculty decisions to adopt Web 2.0 technologies. The chapter concludes with a list of recommenda-

tions for classroom use of Web 2.0 applications, as well as implications for policy changes and future research.

### INTRODUCTION

The use of Internet technologies such as websites, newsgroups, and e-mail have had a significant impact on the way courses are delivered and designed in higher education (Barnett, Keating, Harwood, & Saam, 2004). Recently a new wave of Internet technologies, named Web 2.0 technologies (O'Reilly, 2005; Murugesan, 2007), has emerged with the potential to further enhance teaching and learning in many colleges and universities. With the use of Web 2.0 technologies, students are able

DOI: 10.4018/978-1-60566-384-5.ch033

to access the web for more than just static course information; they are now able to access and create collective knowledge through social interactions with their peers and faculty (Maloney, 2007). Web 2.0 technologies also enable students to connect multiple pieces of information and in doing so create new information that is shared with others (Maloney, 2007).

Web 2.0 technologies have many theoretical affordances to improve teaching and learning (Ferdig, 2007). These affordances include the ability to support scaffolding and active learner participation, provide opportunities for student publication, feedback, and reflection, and the potential for development of a community of learners (Ferdig, 2007). Additionally, while students today are embracing emerging technologies such as cell phones, text messaging, YouTube, wikis, social networks, and other Web 2.0 applications, we also know that many faculty still have not made the switch to these emerging technologies; they prefer course websites and e-mail as their predominant means of connecting with their students (Ajjan & Hartshorne, 2008).

In this chapter, the results and implications of a study exploring student and faculty awareness of the potential of Web 2.0 technologies to supplement classroom learning are discussed. Also, using the decomposed theory of planned behavior (DTPB) as the theoretical foundation (Taylor & Todd, 1995), factors that influence student and faculty decisions to adopt such technologies are examined. This chapter extends the existing literature by providing new insights on factors that influence student and faculty adoption of Web 2.0 technologies. Understanding these factors will be useful in formulating effective strategies and recommendations to increase the likelihood of adoption and effective use of Web 2.0 technologies.

## **BACKGROUND**

### **Why Use Web 2.0 in Higher Education?**

Web 2.0 provides online users with interactive services and control over their own data and information (Madden & Fox, 2006; Maloney, 2007). Examples of Web 2.0 technologies include wikis, blogs, instant messaging, internet telephony, social bookmarking, and social networking sites. These new technologies change the way documents are created, used, shared, and distributed and make sharing content among participants much easier than in the past (Dearstyne, 2007). In the study addressed in this chapter, there was a focus on the following four types of Web 2.0 collaboration tools: wikis, blogs, social bookmarks, and social networking.

Although many Web 2.0 applications are not designed specifically for educational purposes, Web 2.0 tools have a number of affordances that make them useful in teaching and learning environments and are rooted in strong pedagogical underpinnings of constructivism (Ferdig, 2007). There are at least four important theoretical considerations that indicate social software will be useful tools for teaching and learning. First, social networking tools provide opportunities to scaffold student learning in the student's Zone of Proximal Development (Brown & Ferrara, 1985; Vygotsky, 1978). The Zone of Proximal Development is the distance between what a student could learn on their own and what they could learn with the assistance of a more knowledgeable other (Vygotsky, 1978). Web 2.0 technologies not only allow more direct interaction between teacher, student, and content, but it also opens up the role of more knowledgeable other to other students, parents, and even the computer (Scardamalia & Bereiter, 1991).

A second theoretical consideration for the use of Web 2.0 technologies comes from the notion of learning as active participation in a shared

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