

Chapter 1.12

The Power and Promise of Web 2.0 Tools

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ABSTRACT

The key idea that sets constructivism apart from other theories of cognition was launched about 60 years ago by Jean Piaget. It was the idea that what is called knowledge does not and cannot have the purpose of producing representations of an independent reality, but instead has an adaptive function (Von Glasersfeld, 1996, p.3). In this chapter, a variety of Web 2.0 applications and their affordances are presented and discussed in relation to constructivism in higher education. The aim is to explain how these applications can be used in higher education to promote interactive and engaging learning environments. Recommendations for harnessing the potential of these tools along with practical examples will assist facilitators of higher education with creative means to design their courses and thus promote Learning 2.0.

WHAT IS WEB 2.0?

The Internet has presented great opportunity for global human participation by transcending geographical, cultural, religious, social classification, and political barriers. As the proliferation of learning with technology increases, there is also amplification in the array of technological possibilities for a variety of asynchronous and synchronous interactions. Therefore, it becomes necessary to provide insight into the effective use of these technologies and the facilitation of e-learning. According to Schrum and Hong (2002) the goals of teaching with technology should include facilitating higher-level, thinking skills, such as analysis, synthesis, and evaluation. Alexander describes this phenomenon:

Web 2.0 is defined as a way of creating webpages focusing on microcontent and social connections between people. It also exemplifies that digital content can be copied, moved, altered, remixed, and linked, based on the needs, interests, and abilities of users—quite against the grain of both traditional and recently expanded copyright (Alexander, 2008, p.151).

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There are many creative Web 2.0 applications, tools, and services available online (See Appendix A for a list of digital resources and links). These tools or web-based learning objects have the potential to engage and involve the learner with technology as opposed to having a student learn from a computer module or digital lecture. There are many Web 2.0 tools that can be found at different sites on the web. For the purpose of this chapter, we will discuss blogs, wikis, widgets, nings, plugins, social networking (MySpace and Facebook), and virtual environments (Second Life). What issues will Web 2.0 solve? What are the potential learning outcomes from using Web 2.0? It is the promises of positive educational outcomes that web-based tools can potentially produce through quality interaction at a meta-level that are intriguing many educators and trainers.

This chapter has implications for instructors, students, instructional designers, and administrators involved with e-learning in higher education. This chapter also provides a synthesis of e-learning issues and an overview of Web 2.0 tools for promoting a constructivist environment.

The 5th edition of *The Principles of Instructional Design* (Gagne, Wager, Golas, Keller, 2005), states a very important instructional design question which is often overlooked. The question is “For what problem is instruction the solution?” (p.23). This question is especially relevant considering the numerous challenges and limitless potential of Web 2.0 tools. By using Web 2.0 tools the theory of constructivism can be applied to reach new levels of digital creation and e-learning.

Constructivism is the process of linking new understanding to old, modifying and enriching existing knowledge, and enhancing depth of comprehension about a topic. McFedries refers to Web 2.0 as functioning as a platform (p.68) because of the ability to delete, edit, and add content and work collaboratively with others in a synchronous approach.

“Constructivism affords a knowledge building process that engages active learners with the physical and social world” (Twomey-Fosnot, 1996, p.30). These interactive online tools include portals, blogs and video blogs, widgets, plugins, wikis, conferencing, games, survey instruments and games. Using these Web 2.0 tools in an educational setting builds on Vygotsky’s (1978) view of interactive learning within the zone of proximal development (ZPD) and how the social process is crucial to the development of thought and behavior patterns. The application and integration of quality educational content is an important part of the constructivist framework. This is the adaptive function of constructivism alluded to by Von Glasersfeld (1996).

When interactive technology is applied in accordance with constructivist principles, it has been called “learning 2.0” (Brown & Adler, 2008). Learning 2.0 is about actively using technology. The multiliteracies of education (e.g., critical thinking, creating content, collaboration) are fostered due to the constructivist nature and exchange of knowledge that is part of the Web 2.0 phenomenon (Alexander, 2008). Learners taking the initiative to create content and learning by being engaged and involved is at the heart of constructivist practice. Brown and Adler (2008) acknowledge the impact of Web 2.0 and how it can add a new dimension to communication and participation:

The latest evolution of the Internet, the so-called Web 2.0, has blurred the line between producers and consumers of content and has shifted attention from access to information toward access to other people. New kinds of online resources—such as social networking sites, blogs, wikis, and virtual communities—have allowed people with common interests to meet, share ideas, and collaborate in innovative ways. Indeed, the Web 2.0 is creating a new kind of participatory medium that is ideal for supporting multiple modes of learning. (p.18)

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