Chapter XVII
Employing Interactive Technologies for Education and Learning:
Learning-Oriented Applications of Blogs, Wikis, Podcasts, and More

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ABSTRACT

A number of new communications technologies have emerged in recent years which were originally used primarily for personal and recreational purposes. The emphasis of these is on social networking and communications. However, these "conversational, constructivist Web 2.0 learning tools", coupled with the power and reach of the Internet, have been identified and employed effectively for both educational learning and knowledge-oriented applications. In particular, the technologies given attention in this paper include Instant Messaging (IM), weblogs (blogs), wikis, and podcasts. A discussion of these technologies and their uses, underlying educational and cognitive psychology theories, and also applications for education and the management of knowledge, are examined in detail. The implications for education, as well as areas for future research are also explored.

INTRODUCTION

In any current discussion of educational methods and techniques, the influence of technology is ever present. While the impact and perseverance of mainstream methods have still maintained their hold on many in the educational realm, it is without a doubt that technology is now an important component of the teaching and learning in the 21st century. The concept of "teaching with technol-

ogy" is now an accepted part of the educational literature (Goffe and Sosin, 2005).

While for many years the mediums employed for education have remained fairly constant and traditional, including tried and true methods such as the blackboard and chalk, whiteboards, flip-charts, and overhead projectors, the employment of computing technologies has resulted in the usage use of PowerPoint, e-mail, and web-based course portals/enhancements such as Blackboard and WebCT. These have remained in widespread use in education for a wide variety of courses and programs.

In connection with this, there have been numerous studies done, and papers written, about the use of technology in the classroom, together with work on the related areas of e-learning, web-based learning, and online learning. The usage of computing technologies in education has been examined widely, and there is a sizable body of work on web and online learning, including the studies by Ahn et al. (2005), Liu and Chen (2005), and Beck et al. (2004) and numerous others.

In particular, some of the relatively newer technologies have been recognized as being particularly useful in the classroom, and have been engaged in innovative ways. These technologies of particular interest , are referred to as "conversational technologies," which allow for more effective creation and sharing of information (Wagner, 2004; KPMG, 2003). Another term often used to describe these technologies is the concept of "constructivist learning tools," which encourage, and are focused on, users creating, or constructing, their own content (Seitzinger, 2006).

The interest in employing these kinds of technologies stems not only from the unique pedagogical benefits gained, but also from the basic need to stay in tune with the focus and strengths of today's students. Prensky (2001) suggests that the students being taught today are "no longer the people our educational system was designed to teach" and that while the students of today can be termed "digital natives", many educators could be regarded as newcomers and relative novices, perhaps termed as "digital immigrants." Yet another way to look at this is to view earlier educational approaches as "print-based" while those of the current environment can be called "digitally-based, secondly-oral" (Ferris and Wilder, 2006).

Another key benefit of these kinds of technologies is that they can help to support what is called "collective cognition." This concerns thought processes and insights which are the product of the combined efforts of two or more people, and which did not arise from the ideas of one individual alone (Stahl, 2006; Giere, 2002). A way of viewing this is that this kind of work is designed to solve problems which are "beyond the capabilities of any individual member (Lund and Smordal, 2006; Hutchins, 1995). This concept is related to "communities of practice" (Lave and Wenger, 1991), and also a more unstructured, but insight and activity oriented, "collectivities of practice" (Lindkvist, 2005)

Another term which has become widely used to describe these kinds of technologies, which as its distinguishing characteristic emphasizes sharing, collaboration, and participation, is Web 2.0. This class of technologies emphasizes participation rather than static information presentation, and encourages ease in social networking. Users can get involved in contributing and commenting on the material presented, instead of passively reading and receiving information (O'Reilly, 2005). The scope of Web 2.0 include the technologies focused on in this paper, (blogs, wikis, and podcasts), as well as some of the popular online networking sites such as Flickr (picture sharing), MySpace, del.icio.us, and YouTube (Millard and Ross, 2006; Huang and Behara, 2007). A newer component of Web 2.0 is the web based service known as a mashup, which is a website application which integrates information from various sources to create an "integrated" resource on a topic, such as Craigslist or Google Maps (Dearstyne, 2007).