Chapter 3.21
Innovative Technologies for Education and Learning:
Education and Knowledge-Oriented Applications of Blogs, Wikis, Podcasts, and More

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ABSTRACT

A number of new communications technologies have emerged in recent years that have been largely regarded and intended for personal and recreational use. However, these "conversational technologies" and "constructivist learning tools," coupled with the power and reach of the Internet, have made them viable choices for both educational learning and knowledge-oriented applications. The technologies given attention in this article include instant messaging (IM), Weblogs (blogs), wikis, and podcasts. A discussion of the technologies and 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

For many years, the mediums employed for education have remained fairly constant and traditional: tried and true methods such as the blackboard and chalk, whiteboards, flipcharts, and overhead projectors. The employment of computing technologies has resulted in the use of PowerPoint, e-mail, and Web-based course portals/enhancements such as Blackboard and WebCT.

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 in numerous studies, and there is a sizable body of work on Web and online learning, including the studies by Ahn, Han, and Han (2005), Liu and Chen

(2005), Beck, Kung, Park, and Yang (2004), and numerous others.

In particular, some of these technologies have been recognized as useful in the classroom, and have been engaged in innovative ways. The technologies of particular interest are those that are referred to as "conversational technologies," which allow for the creation and sharing of information (KPMG, 2003; Wagner, 2004). 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 better termed "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 & Wilder, 2006).

The purpose of this article is to examine these technologies and explore both the evolution of their use from personal applications to that of educational tools, and also to examine the key educational applications for which these are being used. Relevant research and applications are examined and analyzed. The future of these technologies for educational and professional use, together with viable research areas, is examined as well.

CONVERSATIONAL TECHNOLOGIES AND CONSTRUCTIVIST LEARNING TOOLS

The notion of conversational technologies is not a new one, as it encompasses many types of systems that have been widely used for some time, including e-mail, video conferencing, and discussion forums.

The term "conversational technology" is derived from the work of Locke et al. (2000) relating to conversational exchanges and his Cluetrain Manifesto. One of the key concepts here is that "markets are conversations" and that knowledge is created and shared using question and answer dialog. Specific theses that relate to this form of "conversational knowledge management" suggest that aggregation and abstraction of information helps to create information. Other characteristics of conversational knowledge management include the fact that it is fast, stored in different locations, and does not require sophisticated technologies in order to be accomplished (Wagner, 2004).

Conversational technologies encompass a wide range of systems and software, many of which are familiar, including e-mail, instant messaging, Web pages, discussion forums, video and audio content/streaming, wikis, and Weblogs. While there are specific aspects that are of interest in terms of the more mature technologies, the ones that will be given attention in this article are the issues, impacts, and applications relating to IM, blogs, wikis, and podcasts. These are technologies that are newer, have a growing base of users, and are starting to become recognized as viable tools for education.

The term "constructivist learning tool" has also become associated with these, particularly blogs and wikis, in that they have a key characteristic of allowing users to develop and maintain their own content. Some of the characteristics of con-

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