

# Use of Wiki in the High School Classroom

Literature Review

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Dan McDowell

[danmcdowell@cox.net](mailto:danmcdowell@cox.net)

## Introduction

Computers and the Internet have expanded the educational strategies available to teachers. While many curricular areas have been enriched, the different opportunities to enhance communication between sets of individuals hold a large magnitude of untapped potential. From K-12 to higher education, people have been using the Internet to exchange ideas, collaborate, and socialize both synchronously and asynchronously. The many different tools used for this communication have been defined as social software (Boyd, 2003). Examples of social software include e-mail, instant messaging, bulletin boards, listservs, weblogs or blogs, and Wikis (Arnold, 2003; Godwin-Jones, 2003).

As schools continue to purchase more technology, the importance of identifying and implementing effective and relevant learning opportunities that reflect real world situations has never been greater. The purpose of this review is to examine the current educational usefulness of second-generation social software, blogs and Wikis, in the K-12 classroom and identify its strengths.

This review will compare the two major technologies within the social software category. This comparison is vital because weblogs have been used extensively in education, while

integration of Wiki technology into the K-12 setting is either non-existent or very limited. An examination and comparison of the two major technologies within this category is also vital, for while blogs have been utilized extensively in education, integration of Wiki technology into the K-12 setting is either non-existent or very limited. In a world that is becoming increasingly digitally collaborative, it will be very valuable to provide K-12 students the chance to become proficient in the technology and skills related to successfully using the technology has great value.

### **Definition and Examples of Social Software**

Social software is software that supports communication between two or more people (Shirkey, 2003). The technological range of this software genre is vast, from e-mail and chat to group navigation of 3D worlds in educational and entertainment settings. Boyd (2003) outlined three premises that define social software. The first premise, “support for conversational interaction between individuals or groups,” holds that users have the opportunity to interact with others in both asynchronous and synchronous settings. The next one, “support for social feedback,” allows users to express their opinion about the contributions made to the discussion. The final premise, “support for social networks,” is the connection established by the software to other users, thus creating a system where large numbers of people can find and become part of the immediate online community. One or more of these premises must be present in order for the software to fit this genre. These core ideas characterize a new form of communication and community-building that eliminates the need for geographic proximity and face-to-face meetings.

In the first ten years of regular Internet use by the general public, a number of social software tools were developed. Godwin-Jones (2003) defines e-mail, discussion forums, chat rooms, and instant messaging as first generation web tools. The technology that powers these formats has evolved, but the underlying concepts remain the same. While the discussion forums have a semi-permanent presence on the Internet, the other technologies are mostly only available to the participants. The emerging second-generation collaborative tools, weblogs and Wiki, are both web-based, making them more public in nature (Godwin-Jones, 2003). By using templates and online forms, these tools have overcome a major obstacle that has prohibited individuals that were not technologically savvy from creating web pages in the past. In effect, these tools may “further democratize the Internet” (Ferdig & Trammell, 2004). By not limiting web content to those who can master html or a web editing application, the number of potential web page publishers increases substantially. It is only natural that students, who are learning about the world, take an active role in web publishing. Lastly, this changes the social structure of communication by making it about the individual’s goals. It essentially works from the “bottom up,” very much like a grassroots movement (Boyd, 2003).

According to the Winer (2003), the technical definition of a weblog, or blog, is “a hierarchy of text, images, media objects and data, arranged chronologically, that can be viewed in an HTML browser.” The content of blogs varies with the user. Some uses including recording of personal thoughts and events, political commentary, recipes, reflections on school or current events, and research (Oravec, 2002). To accentuate posts, users may add images and hyperlinks. Furthermore, politicians, celebrities, journalists, scientists, and other professionals have taken to

blogging, thus providing real time information on numerous topics not available in the mainstream media outlets. Many blogs are completely maintained by the author, however some do allow other users to comment on individual posts and others allow registered guests to also add posts. If using one of the many freely available templates, no web page design knowledge is necessary (Godwin-Jones, 2003).

Where blogs are more personal in design, WikiWikiWebs, or Wikis, are collaborative (Godwin-Jones, 2003). The basic concept of Wiki software is that any registered user can edit a page using a link found at the bottom of every page. Users can also link keywords words, WikiWords, within a document to existing or new documents, allowing for a natural growth of the Wiki. When used elsewhere in the Wiki, these WikiWords will automatically be linked to the appropriate pages. Godwin-Jones (2003) believes “the goal of the Wiki sites is to become a share repository of knowledge, with the knowledge base growing over time.” Currently, groups needing to edit a single document use Wikis. One of the largest Wiki on the Internet is the Wikipedia, an encyclopedia written by hundreds of different authors. If a reader finds fault with an entry, he or she can either edit it or start a discussion on the topic (Chawner & Gorman, 2002). As with blogs, no html programming is necessary. Once the “edit this page” link is click, a form with the existing text appears to be edited.

### **Social Software and Constructivism**

Many educational studies in the last ten years have focused on the constructivist theory of education. According to Lowery (1997), this theory is based upon learners constructing their own knowledge by utilizing prior knowledge to examine the relationships between the

information. In order for optimized learning to take place, students must actively participate in their education and make sense of the information that they are trying to master. This hands-on approach breaks with the traditional learning model of an instructor-centered classroom and puts the learner in control (Pierce & Kalkman, 2003). Allowing students to explore and make their own decisions lets them construct their own understanding of the content.

While the research connecting social software and constructivism is lacking, blogs and Wikis both fit the constructivist theory. Ferdig and Trammell (2004) explain that blogging is a form of knowledge construction because the learners process information over time. They have the opportunity to allow ideas evolve, edit past entries, and seek feedback. Teachers can also trace the growth of students through their participation.

### **Social Software in the Classroom**

Social software puts the learner at the center of his/her educational experience. By getting the student invested in the educational process, they become stakeholders and their motivation will increase (Pierce & Kalkman, 2003; Ferdig & Trammell). Students can point family, friends, and other classmates to their published work, increasing their accountability and desire to produce a quality product. Oravec (2002) contends that social software, specifically blogging, also gives a voice to all students, regardless of their performance in face-to-face meetings. This reinforces the idea that blogging could democratize the Internet, by allowing those who would not ordinarily, play an active role in the class. In addition, social software provides opportunities to continue the discussion and collaboration outside of the regulate classroom seat time. Ferdig and Trammell (2004) assert that “blogs represent the potential to promote interactivity, provide

opportunities for active learning, increase student and teacher relationships, increase higher-order thinking skills, and improve flexibility in teacher and learning.”

Teachers around the country have begun to utilize blogs with their students. Weiler (2003) explains his use of blogs as a publication tool. Instead of having students bring hardcopies of their creative stories, they use a personal blog. Classmates read the stories and make suggestions and comments. In addition to saving paper, the instructor can assign peer reviews to be done outside of the classroom and use that dedicated time differently. Additionally, collaborations can span great geographic distances. Ferdig and Trammell (2004) also assert that blogs can be used to develop subject matter proficiency and critical thinking skills. By providing students with a focus for their blog, they can search, review, and filter relevant links. This process will expose them to a large amount of information and make them examine the resources carefully. Last, blogs can be used as the task of a WebQuest (Dodge, personal communication, March 8, 2004). The compilation WebQuest design pattern fits the use of a blog by having students “assemble and organize a body of knowledge in a form that would be useful to someone else” (Dodge, 2004). With the ability to modify the date stamp, a blog even more ideally suits the simulated diary design pattern where students write as if they were experiencing historical events first-hand.

There has been no formal research completed on the integration of Wikis in the classroom. However, the characteristics of a Wiki strongly support a collaborative, constructivist approach. Chawner and Gorman (2002) highlight the functions of a Wiki that logically lend themselves to education. First, they act “like an enhanced online electronic whiteboard,” providing users access

to change or add information. An instructor can view previous versions, allowing him/her to evaluate growth. The shared responsibility of contributing to a Wiki can help teach students necessary skills to interact within a group successfully (Goodwin-Jones, 2003). As with blogs, including Wikis as a WebQuest task can be effective (Dodge, personal communication, March 8, 2004). The compilation design pattern fits a Wiki even more seamlessly. By allowing multiple users access to a document, projects could include the creation of a local class resource similar to Wikipedia, the writing of a collaborative story, or any other comprehensive listing of information. Another use of a Wiki within a classroom has students creating a decision tree where students are given a scenario based on a curricular topic and asked to determine what happens next (Dodge, personal communication, March 8, 2004). The Wiki software would provide the technology that allows students to have multiple decision points and places to examine the consequences of specific actions. The most applicable subjects are social studies, English, and science. Wikis and blogs are not the immediate answer to the problems of the education system, however, when properly structured, they will become a valuable tool.

### **Conclusion**

There is little doubt that social software has begun to redefine how, when, and where people interact. The number of potential collaborative opportunities has enlarged exponentially. Networks of users have grown into virtual communities, defined by written and unwritten laws that define behavior (Shirkey, 2003). At the forefront of this movement are blogs and Wikis. Many individuals and groups have adopted these technologies to further personal, social, and political agendas. Within the field of education, blogs and Wikis are just becoming recognized as

valid tools to be used with students. The greatest potential for blogs revolves around their use as a personal space to express opinions, impart knowledge, and share creative works. While similar to blogs, the strength of Wikis lie in its collaborative nature. Wikis open the door to a level of group interaction not easily achieved in a traditional or digital setting. Further research on blogs and new research on Wikis must be completed in order provide a solid pedagogical background and proven strategies for educators.

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