An Introduction and Guide to Enhancing Online Instruction with Web 2.0 Tools

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Abstract

With online course development on the rise (Allen & Seaman, 2011) the challenge for instructors is to enhance and ensure learning through this modality (Brinkerhoff & Koroghlanian, 2007). When direct contact with students in a traditional face-to-face classroom is not feasible, instructors must be innovative in content delivery and provide for students a sense of instructor presence. It has been suggested that the online instructor is the critical factor for a successful learning experience (Brabazon, 2001; McKenzie, Mims, Bennett, & Waugh, 2000; Beaudin, 1999). Indicators of instructor presence include behaviors such as communicating, sharing information, and maintaining a sense of community within the course (Palloff & Pratt, 2003). These indicators have been directly related to student perception of success in meeting learning outcomes (Kupczynsk, Ice, Wiesenmayer, & McCluskey, 2010).

Web 2.0 tools offer ways to personalize classes and demonstrate instructional presence. Some of the more widely recognized tools include blogs, wikis, RSS feeds, video and photo sharing, avatars, microblogging, social bookmarking, and social media. This generation of free, easily accessible Web-based tools allows users to access as well as create and contribute information to sites. In an online classroom setting, Web 2.0 tools enable instructors to interact with students in a variety of innovative ways. Rather than passively viewing information, students collaborate and learn as a classroom community. The purpose of this paper is to help novice online instructors understand

exactly what Web 2.0 tools are, as well as why, and how they can be used in the online classroom. Suggestions for specific Web 2.0 tools that work well across disciplines are provided.

Introduction

Online instruction in higher education continues to grow in popularity (Allen & Seaman, 2011) and so does the demand for effective teaching strategies using this mode of delivery (Durrington, Berryhill & Swafford, 2006; Tabatabaei, Schrottner, & Reichgelt, 2006). According to the report, *Going the Distance: Online Education in the United States, 2011* (Allen & Seaman, 2011), the number of students taking at least one online course now surpasses 6 million which indicates one-third of all students are taking at least one class online. Other key findings from the report include a 10% growth rate for online enrollments which exceeds the 2% growth in higher education overall, a growth in fully online programs, and a declaration by 65% of higher education institutions that online learning is a critical part of their long-term strategy for growth.

With the rapid increase in new courses, and adaptation of existing courses for online delivery, comes the challenge of finding ways to demonstrate instructor presence and subsequently establish a classroom community. Indicators of instructor presence include behaviors such as communicating with students on a regular basis, sharing information and feedback related to course content, relating to individual students' interests (such as suggesting a specific book, article, or website), and maintaining a sense of community within the course (Palloff & Pratt, 2003). Classroom communities, first studied in the context of traditional settings, were defined by Alexander (1997), as a group of learners who collectively share concern for the welfare of others as well as self. Indicators of classroom communities include a sense of trust, an obligation to the group, and a belief that that the

mutual goals can best be met through cooperation (Doney & Cannon, 1997; Gibbs, 1995; Moorman, Zaltman &Deshpande, 1993; Preece, 2000).

In the context of online classrooms, community has been defined as the connections among students and between students and instructors that lead to increased learning (Young & Bruce, 2011). While some research has shown an absence of behaviors that indicate a strong classroom community (Hara & Kling, 2000; Northrup, 2002; Rovai, Wighting, & Liu, 2005), other studies have found that online communities create an environment of shared activities that result in increased learning and success in online courses (Ascough, 2007; Cho, Gay, Davidson, & Ingraffea, 2007; Pate, Smaldino, Mayall, & Luetkehans, 2009).

The human regard and concern for the group exists in the communities of online classes as well as traditional classroom settings (Rovai, 2002). However, the approach to establishing and maintaining such a community differs. In traditional classrooms, students can see and speak to instructors and classmates face-to-face. Classroom communities are built when students work with an adjacent partner or the room is arranged to facilitate small group work. In these settings, students complete assignments such a problem-solving activity or collaborating on a presentation. While physical proximity cannot be use to replicate these exact behaviors in an online class, technology does offer useful alternatives and new possibilities. Web-based tools enable instructors to demonstrate their presence and allow students to communicate easily without sharing the same physical space. The exploration and application of Web 2.0 tools removes the barriers typically associated with online classes. The result is a thriving online classroom that enables instructors to be innovators (Grosseck & Holotescu, 2010).

What are Web 2.0 Tools?

Web 2.0 tools are a group of web-based technologies that expand communication capabilities and options (Anderson, 2007). The term, first used by O'Reilly in 2005, refers to web-based technology that supports communication and sharing as opposed to passively viewing information online (Lemke, Coughlin, Garcia, Reifsneider & Baas, 2009; Solomon & Schrum, 2007; 2010). Interaction with Web 2.0 tools helps create what Rheingold (2010) calls virtual communities and has transformed the internet into a network of global learning communities (Yuen, Yaoyuneyong, Yuen, 2011).

In an online, instructional setting, instructors and students collaborate and interact with one another in a variety of ways using Web 2.0 tools. Widely used tools such as blogs, wikis, RSS feeds, video and photo sharing, avatars, microblogging, social bookmarking, and social networking promote personal, interactive, and collaborative communication. Most tools are asynchronous and do not require the users to be online at a scheduled time which adds to the flexibility of use in online instruction. Generally, no software download is required and many tools are available at no cost.

As the number of Web 2.0 tools increases, the technical skills needed to use such tools decreases (Ferris & Wilder 2006; Lamb 2004) enabling users to concentrate more on the purpose of the tool (i.e. collaboration and exchange of information) rather than learning how to use the tool. Wheeler, Kelly and Gale (2005) use the term "transparent technology" when referring to tools that are easy to use. Students spend less time learning how to use the tool and can put it into practice almost immediately. The once static process of consuming information online has been transformed into a participatory, interactive experience (O'Bannon & Britt, 2012).

Why use Web 2.0 Tools?

Web 2.0 tools make it possible for instructors to demonstrate online presence, a factor linked to better learning outcomes as perceived by students. Kupczynsk, Ice, Wiesenmayer & McCluskey (2010) found that instructor feedback followed by the ability to engage students in discussions on relevant issues were the two primary examples of instructor presence that students perceived as relevant to their success in online classes.

Lehman and Conceicao (2011) suggest instructors demonstrate to students that they are real and present by communicating regularly and in interesting ways with the class and through feedback provided on assignments and in discussions. Many Web 2.0 tools, such as those that enable instructors to create personal video messages or voice-record through avatars, enhance the ability to communicate with students.

The benefits of using Web 2.0 tools in online instruction extend beyond the academic setting. When Web 2.0 tools are used firsthand for academic purposes, the likelihood that students will find an application in their own discipline increases (Gonzalez & St. Louis, 2008). It has been suggested that Web 2.0 applications can also facilitate and enhance lifelong learning through collaboration on a global scale (Klamma, Chatti, Duval, Hummel, Hvannberg, Kravcik, Law, Naeve, & Scott, 2007). Expanding students' understanding of the potential of Web 2.0 tools is important because even though college students use some Web 2.0 applications regularly in their personal lives, they may not know how to use them for gaining new knowledge or developing new skills (Yoo & Huang, 2011).

How should Web 2.0 Tools be used?

Because there are such a wide variety of Web 2.0 tools, they can be incorporated into online classes in any field or discipline. Grosseck (2009) warns that without careful attention and a specific purpose, the addition of Web 2.0 tools can have a vague significance in a class rather than the powerful impact intended. With this in mind, it is important to determine the best use of Web-based tools.

In one online graduate class, for example, students communicated regularly through the threaded discussion option offered in the delivery platform. After several weeks, Voicethreads were introduced as an alternative. The instructor uploaded a photograph of an early 20th century classroom and voice recorded a relevant question to begin a discussion on the evolution of instructional strategies. The students responded by leaving a voice recording and listened to each other's comments by clicking on a classmate's picture. The discussion continued on the second slide which featured a high-tech classroom. In a follow up survey comparing threaded discussions with Voicethreads, student responses showed they liked the familiarity of threaded discussions but enjoyed the personal touch that looking at classmates' photographs and hearing their voices offered. The rated the tool as easy to use and added comments describing how they plan to use Voicethreads in their own K-6 classroom.

As an alternative to other presentation formats, online students in a Secondary Education class used Museum Box to design a teaching unit on a specific historical period or event. Information included photographs, timelines, maps, images of newspaper clippings and text files. Students then viewed each other's projects and left comments for their classmates.

To introduce microblogging to undergraduates in an Adolescent Literature course, students were required to follow a professional organization on Twitter. Unprompted, students began sharing other Twitter accounts that they thought may be of interest to fellow classmates. Students began following favorite authors and other literature-related groups. These are just three examples of how Web 2.0 tools were included in teacher preparation courses. These and other tools can just as easily be integrated into any program of study or profession.

Appendix A provides a list of suggested Web 2.0 tools that can be used in various disciplines. Each Web 2.0 application is listed along with the corresponding URL, category, brief description and a suggestion for use.

Careful consideration should be given when deciding which tools to implement and their intended purposes. The following four suggestions are provided as a guideline for how to implement Web 2.0 tools to achieve the greatest benefit.

1. Become familiar with the many choices of Web 2.0 tools. An internet search of "free Web 2.0 tools" will produce a list of dozens of sites (such as http://www.go2web20.net/) that provide links to hundreds of available tools. Instructors can explore tools and consider how they might be integrated into a course.

2. Plan in advance which tools will be incorporated into the class and decide how they will be used. Think of ways to modify existing assignments so that Web 2.0 tools can be used to increase instructor presence and strengthen the class community rather than develop an additional assignment in order to use them. Instructors should use caution when deciding how many new tools will be introduced in a single class. Tools that are less familiar to students should be used

sparingly. For example, an instructor may choose to incorporate only one new tool along with a tool that is already familiar to students.

3. Make students aware of all Web 2.0 tools that will be used early in the term, preferably when they first log on to a new class. Provide information about the tool, including the URL, in the syllabus along with other essential information such as textbook requirements. Ideally, a tutorial will be available for students to learn about the tool. Also, include relevant information in an announcement so students can plan to become familiar with the tool in advance of using it in class. Be available to answer questions or address concerns. Assignments that require tools should be due later in the term after students have had an opportunity to become familiar with them. Using the tool should be a positive experience for the students.

4. Collect feedback from students on their experience using the Web 2.0 tools in the class. Determine the ease of use, perceived relevance to the assignment, and how tools contributed to students' learning outcomes. Have students reflect on how they might use the tool in their own discipline or personal life.

Summary

Online instruction is growing at a rapid rate increasing the need for effective instructional strategies (Allen & Seaman, 2011; Durrington, Berryhill & Swafford, 2006; Tabatabaei, Schrottner, & Reichgelt, 2006). Because there is little or no face-to-face interaction, it is important for online instructors to establish their presence in the course. This can be accomplished by communicating with students on a regular basis, sharing course content, and building a sense of community within the class (Palloff & Pratt, 2003). Web 2.0 tools promote instructor presence through a wide array of collaborative learning experiences (Solomon & Schrum, 2007; 2010). Because Web 2.0 allows users to interact with one another or within the group rather than passively consuming information,

these tools are an ideal match for online instruction.

The broad categories of widely used Web 2.0 tools such as social networking, blogs, wikis, video sharing, avatars, photo/slide sharing, microblogging, social bookmarking, and social networking offer many options for online classes. Thousands of free tools are available with specific uses and purposes for online instruction. Selecting the right tool and implementing it in a useful way can transform an online classroom into an active, engaging learning community. Students will respond enthusiastically to experiences that are relevant to their own lives and web 2.0 tools provide limitless opportunities for creative interaction and learning.

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Appendix A. Examples of Web 2.0 Tools

Name of Web 2.0 Tool/URL	Category	Description and Use	Alternative to:
Delicious delicious.com/	Social bookmarking	Used to discover, store, share bookmarks. Instead of saving favorite sites to a web browser, they are saved to the web and can easily be shared with students.	Sites saved to "favorites" on computer
Flikr www.flickr.com/	Photo sharing tool	Upload photos through the web, mobile device, email, or photo application. Share stories and photos with comments and notes. Add tags, locations, and people.	Saving photos to personal computer
Museum Box http://museumbox.e2bn.org/	Presentation tool	Events, artifacts, people, and historical periods are presented in a virtual box and may be in the form of videos, photos, images, or text files. Students can view each other's projects and leave comments.	Poster board presentation
Prezi http://prezi.com/	Slideshow	Users can pan and zoom, import media, or make the presentation available online or offline. Students and instructors can collaborate from remote sites.	Power Point
Screen-O-Matic http://www.screencast-o-matic.com	Presentation tool	Users can create and share recorded screen sessions or screencasts online. Videos can be created, embellished with moment-specific notes and embedded on the web for sharing.	Videotaped lectures
Schoology http://www.schoology.com/home	Social media tool	Has a secure format, students and instructors can host discussion, and it can be used for one-on-one remediation.	Facebook
Twitter https://twitter.com/	Microblogging	Online social networking/microblogging service that enables users to send and read text-based posts of up to 140 characters, known as "tweets". Students can follow professional organizations and people relevant to their field of study. Classmates can communicate with each other through tweets.	e-mail, Facebook updates, blogging
Voicethread http://voicethread.com/	Presentation tool with feedback option	Tool for having conversations about media such as pictures, photos, or a power point. Comments can be recorded using a microphone, by leaving a voicemail message, or by keyboard.	Threaded discussion
Voki http://www.voki.com/	Computer-generated character	Adds more human element to online classes. Simple to use and adds interest to lessons or announcements.	Video podcast
Wallwisher http://wallwisher.com/	Posting comments	Allows people to express their thoughts on a common topic easily. Ideal for	Threaded Discussion,

| | | sharing ideas, perspectives, information, or any situation that necessitates input from individuals in a group. Can be used for making lists or personal note taking. | Bulletin board |