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Web 2.0 and Social Constructivism

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The emergence of Web 2.0 and its related technologies has the potential to dramatically alter current educational practices. Because users now have the ability to rapidly create content and to engage in social interactions through the World Wide Web, we argue that Web 2.0 supports socially mediated, constructivist learning environments in ways that are becoming seamless. In this chapter, we describe the tenets of social constructivism and then discuss three technologies associated with Web 2.0 and explore how teachers and students could utilize them to promote constructivist learning.

In 2003, the O'Reilly media group developed the term *Web 2.0* to describe the gradual changes that occurred over the previous few years in the way content for the Web could be created and consumed (O'Reilly, 2005). *Web 2.0* does not refer to a specific program or application, but rather to a group of emerging technologies that allow for significant social interaction through the Web, permitting users to create content either individually or collectively.

Because of the ease of collaborative knowledge building through Web 2.0, it may represent an important development in working toward constructivist teaching and learning practices. At the heart of constructivism is the notion that knowledge is not a thing that can be easily conveyed from one person to another in the manner that a coin can be exchanged. Educators can use tools of Web 2.0 to promote the types of social constructivist learning promoted by Vygotsky (1978) and others. Vygotsky wrote about the importance of and the relationship between learning and the social world of the learner. He argued that the social environment significantly affects what and how students learn (Dimitriadis & Kamberelis, 2006; Vygotsky, 1978). When discussing the work of Dewey, Prawat (2000) explores Dewey's version of social constructivism that emphasizes the importance of public learning. Additionally, Prawat discusses the idea that learning or change can occur from the conflict between divergent ideas.

The ideas that we propose in the following pages build upon what other art educators argue for in previously published literature related to using the Web in Art Education. Coleman (2005) explores various facets of Web art and raises many issues relating to how the aesthetics of Web art call for new ways of understanding

and interpreting these works of image and text. Keifer-Boyd (n.d.) approaches the Web as a means of creating cyberfeminist art and pedagogy. Through her Cyber-House project, she pushes notions of gaming and art as a pedagogical tool. Additionally, Sweeny (2004) analyzes how contemporary digital technologies change societies. He raises questions about how art education can address challenges posed by the digital visual culture world that involves simulation, unique forms of interaction, and new forms of visuality.

The inherent nature of Web 2.0 makes it ideal as a vehicle to promote teaching and learning from a social constructivism paradigm. Because the information available through the technologies of Web 2.0 is always changing and emerging, conflicts are inevitable. Additionally, because of the ease with which users can work collaboratively to share and build knowledge, these technologies can facilitate the type of learning that Vygotsky promoted.

DELICIOUS

delicious is a social bookmarking site that allows a user to "tag" websites, add descriptors, categorize them, and save them for future use (Johnson, 2007). Unlike bookmarking sites through a browser, sites that are marked with delicious are available to the user at any computer with Internet access. By default, delicious accounts and any sites tagged through delicious are public. However, if a user wishes to create a private account that is possible by changing the settings. Thus, a teacher may choose to exercise various degrees of control over what students do and what is available to the public. There are many possibilities for using delicious as a resource for teaching art at the classroom, district, and university levels. Through delicious, classroom teachers can share links with students to start research (Anonymous, 2005). Students can use delicious to collect resources for group projects and for documentation of their own research process. For example, AP art students could each have a delicious page that focused on the media they were most interested in, artists that they study both in and out of class, and social and cultural issues related to those artists' work. Students could make notes in delicious about how images, issues, and ideas were connected in order to be able to form complex thoughts about the artist and her/his work. In this case, delicious could be a tool to help students understand their artmaking process and see the relationships between and among disparate ideas. This sort of research would prepare students for speaking thoughtfully about their own artwork. Though students can make notes about their artmaking process in a variety of traditional ways, including through a sketchbook, using delicious allows students to add ideas whenever and wherever they have Internet access, access other students' ideas, and easily connect relevant websites to their ideas.

At the district level, art teachers could collaborate to share links for lesson plans, resources, museums, and blogs that relate to their teaching practice

and interests. Teachers in a district could collaborate to create one page that contained links they all utilize. This may be a useful tool especially for elementary art teachers who are often the only art teacher in their school(s). Additionally, through delicious, art supervisors could easily share links with all the teachers in the district or with a group of teachers who teach particular courses.

At the university level, art education students could use delicious in their courses to share links related to readings, lesson plan ideas, or other Web resources tied to course materials. For example, beginning level art education students might create a delicious page of lesson plan ideas. The following year, these same students might add to the delicious page by gathering links to blogs written by art teachers. During a methods or practicum course, these students may find it useful to collect links to tools for classroom management. In their final year of college, art education students could use delicious to tag links to job fair announcements, tips on resume building and interview skills. Thus, through delicious, teachers and students at all levels can find and save useful websites that may relate to their artmaking or research about art and artists. Though delicious itself is not inherently constructivist, it can be used in ways to promote constructivist teaching and learning. For instance, through reviewing the tags of others, a user can learn from someone else and build a network of other delicious users who are interested in similar topics. Therefore, delicious can be the beginning of relationships that may lead to constructivist knowledge building.

BLOGS

Blogs, also known as "web logs," are a type of website that is updated frequently and that allows individuals to publish their ideas in a public forum. Blogs are increasingly popular and they have become a larger cultural form of communication. Unlike traditional print media, blogs are usually written in a conversational tone, allow for readers to comment on the content, and promote asynchronous dialogue between the author and commenters. The software required to create a blog is both user-friendly and often available at no cost. Blog authors are not inherently "experts" on their topics, which is both frustrating and enchanting. The writer benefits tremendously, not only from the careful preparation and organization of her content, but also from the apprehension of publishing and inviting commentary from the digital community. It is this act of reflection and preparation of content that is so beneficial (Moulton, 2008). Readers can easily comment on or question the information provided, thus beginning a dialogue. Blog readers, in turn, find not only factual information on topics of interest, but entries that are slanted or expressed in a manner that is appealing to them individually.

Anyone has the opportunity to publish and have her/his opinion heard, and readers have the opportunity to agree or disagree. The very fact that the information provided might be incomplete or one of several perspectives necessitates

further examination and evaluation of the validity and relevancy. The existence of so many voices should encourage students to find more than one perspective—perhaps even conflicting ones—triangulate information, and begin to compare and evaluate new knowledge (November, 2008). Art students in the 21st century need to develop critical thinking skills that include accessing, analyzing, evaluating, applying, and ultimately creating new media content. The types of social interactions possible through blogs range from none, in blogs that function mainly as bulletin boards, to significant, in blogs that have lively exchanges between the blogger and the commenters. We believe that blogs may contribute to socially constructing new knowledge, but it is up to the blogger and the commenters to make this type of interaction happen.

There are various genres or types of blogs that educators and students can use (Brooks, Nichols, & Priebe, 2004). For instance, a video blog might contain short clips demonstrating techniques, step-by-step instructions, or student presentations. An audioblog might feature student podcasts from a museum or gallery opening, excerpts from an interview with a local artist, or an evaluation of student work. A sketchblog would allow students to document the process of creating a work of art. Typically a blog centers on writing, but art students may be drawn to the personal and expressive dimensions offered by a blog (Brooks, Nichols, & Priebe, 2004). Blogs are useful tools for both art students and art teachers for a variety of purposes.

Blogs may promote conversation and learning that can be constructivist. Through making a comment, a user may be able to have a direct conversation with a blog author. When this type of dialogue occurs, new knowledge can be constructed through the social interactions of the commenter and the original blogger. However, the comments on a blog are typically subsumed under the authorship of the blogger. The dialogue produced offers tremendous potential for critique, as teaching students to constructively discuss art and artmaking is a challenging, yet important endeavor. Asynchronous commentary about a work of art promotes deep and thoughtful consideration on the part of a student, something not always possible when looking at 25-30 student artworks in the 45- or 90-minute timeframe of the public school class period. Many adolescents feel uncomfortable in a formal critique environment and although they might have good ideas, they might not stumble upon something useful or profound until after class is over. Thus, using a blog with a class as a form of ongoing critique could be a way to introduce continuing dialogue about artmaking. Through a blog, students could contribute comments about other students' works of art. The artist could respond to the comments and carry on a conversation with peers and the teacher about the work of art. Through these types of interactions, students could work together to build a deeper understanding of their own artmaking process, the

meaning of their artworks, and the art of others. However, it is important to note that the teacher needs to actively monitor student blogging. Just as in face-to-face critique settings, teachers may need to step in if student comments are inappropriate. To facilitate students learning about appropriate uses of the blog, we suggest that teachers begin with some type of student contract that explains how the blogs can be used (Richardson, 2006).

Additionally, student use of blogs might supplant the use of textbooks. Because textbooks are static objects, they may be outdated or incomplete a short time after publication. The art world changes rapidly and blogs can accommodate these changes. If students need additional details about an entry or if doubts arise regarding information found in a blog, students may interact with the author and find new information. Though this could also be possible by contacting a book publisher or author, we think it is more likely to occur through a blog than through traditional media publishing channels. Through blogs, students have the chance to control and contribute to their own learning, direct, and even shape the content and curriculum in the art classroom (November, 2008).

Teachers may find it useful to read blogs to keep up with current events in the art world, monitor developing educational trends, share practices and resources, and conduct discussions about theory and shared interests. To make reading blogs manageable, teachers can use feed readers or aggregators that hand pick information and condense it onto a personalized, content-rich resource (Moulton, 2008). The content of blogs may change when the interests of the author change or in reaction to the readers and their comments. Widgets, including blogrolls, a list of other blogs identified as interesting or related, and embedded hyperlinks encourage the reader to explore further content and, perhaps later, to return with new information, perspectives or helpful links.

For teachers, a blog might act as a classroom organizational tool, a platform for critique, or a method for self-promotion and program advocacy. Blogs can be configured to be public or private and to allow students a variety of roles, including those of contributor, author, or merely viewer. Blogs may afford a developing artist the opportunity to have a virtual gallery or studio space. Ultimately, as Blood (2008) states, blogs have the power to transform both writers and readers from "audience" to "public" and from "consumer" to "creator."

SECOND LIFE

As technologies emerge, the use of technology, including the Web, in classrooms has become familiar to teachers and students. Delacruz (2004) suggested that although using technology in art class depends on school systems and art educators, many art educators know the importance of using the Web to access information. With an Internet connection, art educators and students can easily learn

Creating avatars (TOP) *and modeling objects* (BOTTOM) *in Second Life.*
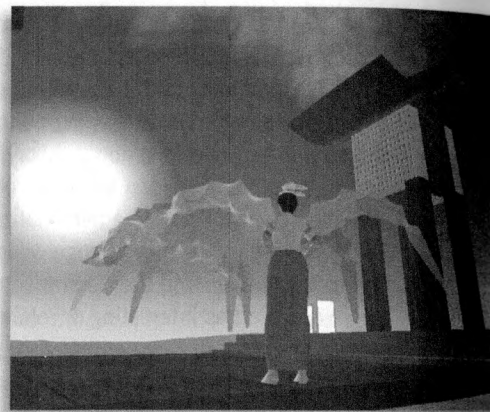
about art and share their images, audio, video, etc. with a worldwide audience. There are many possibilities for art educators to use Web 2.0 for their art lessons as references and tools for critique.

A newer development of the Web is the ocial virtual world, which allows people to communicate through the Internet. One popular example of a social virtual world is Second Life, which is a virtual three-dimensional online community created by users. Linden Lab created Second Life in 2003 and the company started educational programs for university courses shortly thereafter (Conklin, 2007). Second Life allows users to register for free and to create their avatars, which are graphical representations of people in Second Life. Avatars represent virtual identities of the users and, with their identities, they can navigate virtual places, and meet and communicate with other residents in Second Life (Hayes, 2006). Also, this social virtual world has the potential for community development

and educational purposes (Hayes, 2006). A version of Second Life specifically for teenagers is Teen Second Life.

The use of Second Life is growing in education (Conklin, 2007; Wong, 2006). For example, some educators in Second Life created the international spaceflight museum, made a model of the solar system, and built architectural forms from ancient Egypt. These creations make it possible to experience something that it is impossible to encounter in real life. In addition, Harvard's Berkman Center owns a private island in Second Life and routinely conducts conferences and courses in Second Life with avatars in attendance. Harvard law school professors Charles and Rebecca Nelson use the Berkman island as a new educational environment (Rymaszewski et al., 2007).

Depending on how educators use Teen Second Life, they can design new environments for students' learning that promote constructivist learning. Teen Second Life has great potential for educational purposes and specifically for art education because of the importance of visual imagery (Conklin, 2007; Hayes, 2006; Wong, 2006). Alvarez (2006) found that one person learned 3-D modeling and designing by using Second Life. She presented the possible uses of Second Life for 3-D design classes and traditional fine art classes for students to create virtual galleries for a critique. Additionally, Alvarez (2006) presented that the use of Second Life promotes communication among users to share their interests. Wong (2006) emphasized a benefit of Second Life is that it allows students to have real-time interaction so that they can engage in discussion with others.

In our opinion, some of the goals of education should be to provide students with an excellent education, for them to have a voice in this educational system, and then to help them contribute to society. As presented, Teen Second Life may be used to help students learn about their identity and to collaborate with others through experiencing a virtual 3-D society. Second Life might help connect subjects such as sociology, graphic design, and visual art and display (Alvarez, 2006).

CONCLUSION

In this chapter, we presented a variety of ways that Web 2.0 can enhance learning in art. However, it is important to note that there are significant criticisms of Web 2.0 and the basic idea that collaborative intelligence is a good thing. Critics, including Andrew Keen (2007), point out that blogs, YouTube, Wikipedia, social networking, and other Web 2.0 sites are completely unregulated. This means that incorrect and inaccurate information can coexist with other documented information. Wilson (2008) describes how the democratic principles espoused by some sites associated with Web 2.0 may not be followed. He offers the examples of Wikipedia and Digg and explores how the majority of the content is created and maintained by a small network of contributors. This is in contrast to the ideas

that the content of these sites represents a significant collective gathering of knowledge from many people. In addition, Keen (2007) makes the point that these technologies allow for a form of narcissism that is manifested in an almost infinite desire for attention to one's personal life. Examples of the manifestation of Keen's point can be found throughout the Web, including the social networking site HAMSTERster. The tagline for this community is, 'Your virtual hamster and gerbil community.' Through this site, the owners of hamsters and gerbils post images of their pets, record pertinent information about them including birthdates and favorite foods, and link to their hamster friends and family. As of this writing, there are more than 2,200 registered rodent users of the site. Additionally, Keen laments the change in who makes content and how it becomes a part of culture. The democratization of the Web, which many people herald, is something that Keen believes is harmful to culture. In regard to the idea of using the Web to bring more music to the world, he writes, "The new Internet was about self-made music, not Bob Dylan or the Brandenburg Concertos. Audience and author had become one, and we were transforming culture into cacophony" (Keen, 2007, p. 14). His concern is that creators and consumers of content have already merged and that this merger is causing culture to begin deteriorating.

Through the tools of Web 2.0, teachers and students have the chance to interact with others and learn in collaborative ways. Because these technologies encourage user-generated content, social interaction, and new ways of knowing, they are appropriate to incorporate in the 21st-century classroom. As our students will encounter these technologies in their lives, we need to teach them meaningful ways to use these technologies that can further their classroom learning. Though the ideas of constructivist teaching and learning have been espoused for many years, the reality of classrooms does not always reflect these ideas. Simply bringing these technologies into classrooms will not result in wholesale changes in teaching. To engage in meaningful reform, teachers and school districts will need to rethink the structure of the traditional curriculum and classroom dynamic to bring about other practices that foster constructivist teaching and learning. During the coming years, it is likely that more aspects of the Web will become freely available with socially based platforms such as social bookmarking, blogging, and immersive environments. Thus, incorporating aspects of Web 2.0 will become increasingly important as students and teachers learn to navigate the emerging Web.

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