Advancements in technologies over the past two decades have revolutionized the delivery of instruction through online learning environments. There is now an expectation that schools should prepare students for the “online revolution” that has also swept society (Kelly, McCain & Jukes). E-learning experiences prepare students to become lifelong learners while acquiring essential 21st century skills. Many researchers concur (Dede, 2004; Hood & Hayden, 2004; Schrum, 2004) that online experiences provide skills that help students lead productive lives in a global, digital, information-based society, but it has been difficult for many to accept, let alone keep up with, the rapidly evolving changes. Online course design, interactive content and activities, as well as other real-time (synchronous) and choice-time (asynchronous) learning opportunities are in demand and this trend is spreading to K-12 schools, with 72% of the nation's school districts planning to expand distance-learning opportunities.

The National Education Technology Plan released by the U. S. Department of Education in January 2005 highlights a number of success stories and state initiatives, including the development of virtual schools. The plan urges support for E-learning as one of seven recommended action steps, spotlighting programs such as the Florida Virtual School as exemplary models. According to the plan, all students should have the opportunity to take online courses and professional development should be provided for students and teachers to allow success in these endeavors (U.S. Department of Education, 2004). The National Technology Plan reported that about 25 percent of K-12 public schools offer some form of virtual instruction today and there is a move toward more digital content for curriculum in K-12 schools.

Background of Online Learning

Students who have access to educational opportunities offered through online environments are able to participate in virtual communities that expand their learning at times and in places beyond traditional campus classrooms (Hayden & Hood, 2005). Many feel that distance education provides learners with a sense of community (Dede, 1995; Witherspoon, 1997), and to build community, course designers must plan interactive, collaborative experiences and activities that bonds individuals. Designers must also understand and effectively utilize characteristics of electronic discourse that enhance communication as they build community (Hayden & Hood, 2005) among learners.

In support of the online communities, organizations such as The North American Council for Online Learning (NACOL), a non-profit organization seeking to increase educational opportunities through leadership and collegial support for K-12 teaching and learning, have emerged. According to NACOL (2007), “as a proven, practical method to enhance the critical learning experience, K-12 online learning is growing rapidly, 30% annually.” On September 12, 2007, NACOL announced their endorsement of National Standards of Quality for Online Courses. Bill Thomas, Director of Educational Technology for the Southern Regional Education Board (SREB), stated:

The use of the Web (online learning) to provide academic courses is extremely important to students everywhere. For online learning to expand and grow, students, parents and policy- and decision-makers need assurance that the online courses are of quality. If providers of online courses meet these standards, there is little doubt that online learning will grow rapidly. (NACOL, 2007)
Identifying Best Practices and Strategies

In order to evaluate the effectiveness of online learning in courses that used Web 2.0 tools, an anonymous survey titled, “Effective Strategies for Online Learning,” was sent to students who had completed at least one online course from either Polytechnic University in Wisconsin or California State University San Marcos. Of the 62 respondents, 60% had taken a course in Wisconsin and 40% had taken a course from San Marcos. The respondents were 79% female and 21% male, with 66% indicating they had advanced technology experiences prior to taking an online course, while 34% indicated introductory technology experience (limited to word processing and/or some Internet experiences). Of the respondents, previous online course usage varied, with approximately 48% indicating they had taken 1-2 online classes, while 40% had taken 3 to 6, and about 12% had taken 7 to 10 classes. Additionally, about 39% of respondents were over the age of 51, 30% were 41 to 50, 18% were 31 to 40 and 13% were 21 to 30 years of age. Only 1 respondent listed themselves as below the age 20.

In responding to questions about effective strategies for online learning, respondents emphasized the importance of community that is created in online courses, with 52% rating community as extremely important. They indicated that community is effectively built through instructor-student relationships as well as student-student relationships. These findings led to taking a closer look at two effective strategies for building online community: the role of the instructor and through discussions.

The first effective strategy in building community in online courses related to the role of the instructor. As one student pointed out, “The most important and influential component [of the course] was the instructor.” Due to the nature of online learning, participants felt there has to be a competent and engaged instructor in order to properly facilitate and encourage the online community. In addition, the respondents felt that the instructor’s ability to coach and facilitate the students was extremely important (51.7%). In order to make this interaction possible, 78.7% of respondents indicated that the instructor needed to provide timely communication and feedback. As pointed out by one student, “[T]he instructor and their level of communication with the group and the individuals is essential to feeling part of the online experience.” Another student felt that also having an empathetic instructor was absolutely essential: “Their concern, willingness to help and thoughts and actions were genuine and helped me continue on with my studies rather than quitting.”

The second effective strategy for building community was the use of discussions. “Strategies to encourage collaboration” received a vote as extremely important by 49.2% of the respondents. Respondents felt that discussions were very important to their learning and ability to master the material, and 42.6% felt that discussions should challenge beliefs and biases. Although asynchronous discussions were highly valued by respondents (Extremely Important by 44.3%), synchronous (real time) discussions seemed to be valued more by those who had experienced this format. As evidenced by comments at the conclusion of the survey, this difference can be attributed to experiences that validated the need for synchronous communication and it was evident that those who had not did not appreciate the value.

The importance of the instructor in online learning is clearly referenced within the North American Council for Learning (NACOL) Standards, which recognizes that “the course instruction should include activities that engage students in active learning.” NACOL standards are also addressed when “course design provides opportunities for appropriate instructor-student interaction, including timely and frequent feedback about student progress.” Through analyzing the survey findings, it becomes evident that, not only is the instructor’s role one of the most definitive areas of ensuring success for students in online learning, but that the course design must support quality online experiences that provide opportunities for interaction and collaboration among the learners in the class.
Matching Web 2.0 Tools to the Findings

Synchronous Chat

My experiences with online chat environments for my courses began with the use of Tapped In® “The online workplace of an international community of education professionals”. According to their Web site, this E-environment supports “K-12 teachers, librarians, administrators, and professional development staff, as well as university faculty, students, and researchers [who] gather here to learn, collaborate, share, and support one another” (www.tappedin.org). With “free” membership to Tapped In, comes a virtual office, online volunteer support, virtual tours and support documents. My students immediately see the value in using this tool to support their learning and they often continue use after the course. The virtual offices allow them to post documents and links as well as take advantage of weekly chats that support user groups focusing on topics such as Web 2.0 and other professional education topics. In fact, Tapped In has a new K-12 environment specifically designed students of the community educators. By completing a request, teachers can acquire a K-12 classroom and use it with their students both for class, and for virtual office hours.

Learning management systems (LMS) also support chat tools. WebCT® has a chat tool that can be added to a course. I have found that the sophistication of the tool is not as advanced as Tapped In, but has the advantage of being within the online course shell. An open source LMS that is becoming popular with both higher education and K12 schools is called Moodle®. This LMS offers a chat, but there are some indications from comments posted online that the tool is still being perfected. Another LMS called ANGEL® has the following definition for Virtual Offices in their system, “more than chat, learners meet and interact with instructors and fellow students in real-time in ANGEL’s Virtual Office. The instructor can work with learners one-on-one or allow a group to enter the ‘office’ for collaborative learning.” Another option for synchronous audio chats is Skype®. This software is free and can connect multiple people at different locations for an audio chat via the Web or through phone lines.

Building Community Using Web 2.0 Tools

NACOL Standard: The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment.

Having used Web 2.0 tools in courses for the past two years, I understand the power of these Web-based, drag and drop tools, that allow a focus on collaboration. They amplify the features of tools such as Tapped In that first investigated the collaborative nature of the Web. Web 2.0 tools add a new level of interactive possibilities. The simple text chat available in Tapped In is transformed through Web 2.0 features to enable virtual reality experiences in Second Life®, a “3D virtual world imagined and created by its Residents” (www.secondlife.com). The International Society for Technology in Education offers professional development and dialog opportunities weekly on their Second Life Island. Participants are provided with an avatar that walks freely about this virtual world with endless possibilities, including flying from one island to another.

Web 2.0 tools provide a nearly limitless variety of options for online course design. One only has to search in the social bookmarking site “del.icio.us” to find a community of user selected top choices (use the tag “Web2.0”). One powerful tool I have used extensively is “Google Docs.” The entire suite of Google collaborative E-tools can be used to supplement online courses, providing an array of interactive opportunities for learners. Another suite of applications is available on Zoho (www.zoho.com) providing the only free online database tool I have found. An online form of journaling, called Weblogs has become so popular that a blog format has become part of many LMS such as WebCT® and Moodle®. When designing a course, a search often found free E-tools to utilize in collaborative activities. For instance,
when using the “roster” tool in WebCT where pictures can be posted to support building community online. I realized that not every student would have a photo editor on their computer to resize and/or crop their photos, so I found a site called Picnik to offer exactly what I needed. Students did not even have to register at the site to quickly upload and modify a large photo, to a size suitable for posting. When I first taught video editing online, it was a challenge to identify how students would submit their videos because of the file size. The solution was YouTube, or TeacherTube which both offer free hosting through a simple upload process. Now students can easily share videos with important audiences; their families, friends and colleagues. For concept mapping, there are several choices I found effective, including Gliffy and Bubbl.us. In fact, there is a site called “9 Great Ways to Make Mind Maps and Flow Charts Online” that explores the possibilities. Another recent course was developed for to one digital storytelling. For this course, I found a solution to be a site called VoiceThread, offering free or low cost hosting. Users can add an audio, tell a story, leave comments, and/or upload files for storage. There is also an Ed.VoiceThread where the stories are contained with a secure network environment. This section has explored just a few of the many, many available Web 2.0 tools to empower learners.

### Student to Instructor Interactivity

NACOL Standard: The teacher provides online leadership in a manner that promotes student success through regular feedback, prompt response and clear expectations.

The results of the survey led me to think more about how I had incorporated opportunities and support for students in my online courses. There are several strategies I offer as advice. First, spend time at the start of a course, getting to know each student and interacting through course mail, private journals, and/or by phone. This time is well spent in getting the learner engaged and on track as well as gaining their commitment to the course. The important thing, in my opinion, is to do this somewhat behind the scenes. If you respond to each student publicly, it can overpower the postings and discussions of others and intimidate the student. The use of email and private communication achieves the desired connections in a discrete manner. My first communication with students is an email to each student with the syllabus attached prior to the course beginning. Instructions are given for course start time, expectations and contact numbers in case technical problems occur. The next communication comes as each student posts in the “ice breaker activity.” A private email is sent to each student, welcoming them to the class, with comments and pointers on format to make sure they are on the right foot for meeting course expectations.

In the discussion postings, I require a “value added” format where students are required to do one of three things in their response, a) give an example, or b) expand on an idea, or c) give a different perspective on the topic they respond to for the initial posting. As posts go up on the discussion board, I respond to a few for each discussion, noting “exemplary models” of the “value added” format. I pick different students for each of these recognitions so that I share the positive comments and encourage everyone. Occasionally I respond to a post to add value on my own or help direct the conversation, but I limit these to occasional postings so the discussion is not about me, but about the community of learners.

As assignments are submitted, I assess them in a timely manner with points and comments. Again, this connects me with the learner and makes them feel that I am there to support them. Half way through the course, I administer an anonymous survey and ask three questions. The first is about pace of the course, the second is on weekly time efforts, and the third asks for comments targeting improvements to the course. I send a summary response with the survey results about a week later showing the data has been analyzed and reflecting openly about their suggestions. I feel this survey has made students understand that I am always seeking ways to meet their needs and I “value their input.”
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Author Summary

Dr. Katherine Hayden is an Associate Professor of Educational Technology at California State University San Marcos. She has 13 years of experience teaching in K-12 schools and 7 years in higher education. She is Past President of the Board of Directors for Computer Using Educators of California and serves on the Standards and Accreditation Committee for the International Society for Technology in Education (ISTE). Dr. Hayden has designed online curriculum and professional development through her work with more than 30 school districts. She recently designed a fully online program for a Computer Supplementary Authorization certification for teachers and is consulting with one California school district to prepare teachers to design courses for their virtual high school scheduled to open in 2011.

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