Incorporating the Experiential Learning Cycle into Online Classes

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Abstract

Based on a case study built upon an introductory digital media class in a large urban school, this case study explores the relationship between ee-learning, a combination of experiential and e-learning, and technological integration in online higher education classes. By incorporating the experiential learning theory proposed by Kolb (1984), which elaborates upon John Dewey's notion of continuity of experience and interaction, the author contributes to the understanding of the roles of direct media experiences in online learning environments and proposes a useful model for teachers designing online technology courses. The ee-learning theory helps to address the wide variation of technological skills among students that instructors of online classes encounter.

Key Words: ee-learning, digital media use, online education, experiential learning cycle, Kolb

Introduction

The enrollment in online classes in institutions of higher education in the United States increased by 9.7% in 2010, outpacing a 1.5% increase in overall enrollment in higher education (Drake, Drake, & Ewing, 2010). In May 2012, Harvard University and the Massachusetts Institute of Technology (MIT) invested $60 million in edX , a spin-off company from MIT that offers free online courses, and in 2011 four top-ranking colleges – Stanford University, Princeton University, University of Pennsylvania, and University of Michigan – partnered with Coursera, a similar company from Stanford (DeSantis, 2012). As courses and the enrollment in online classes increase drastically, educators are becoming increasingly concerned with the relationship between pedagogical approaches, technological integration, and student learning in online learning environments. The inchoate nature of pedagogical approaches to online classes has resulted in ineffective teacher-centered courses (Knowlton, 2000; Murphrey, 2010) or numerous technology-driven online courses (Beard, Wilson, & McCarter, 2007; Wasilik & Bolliger, 2009).

The desire for greater flexibility and student control over the learning process has contributed to an increase in demand for online courses at the graduate level (Carver, King, Hannum, & Fowler, 2007; Drake et al., 2010; Dunlap, Dobrovolny, & Young, 2008; Kennedy, 2004; Lalonde, 2011). Possibilities for incorporating real world experience into academic study in distant and/or a time-shifted environment lure graduate students in engineering, nursing, and advertising into online classes (Bolan, 2003; Nilles, 2007; Riedel, Endicott, Wasescha, & Goldston, 2007). Experiential e-learning theory or ee-learning theory, which weds electronic-learning and experiential learning, has often emphasized the professional and practical experience of learners (Carver et al., 2007; Nillies, 2007; Murphrey, 2010; Riedel, Endicott, Wasescha, & Goldston, 2007; Trevitte & Eskow, 2007); however, it rarely incorporates learners' everyday media experience. The literature on ee-learning provides limited analysis of whether or not students' everyday digital media use is helpful in online learning at the undergraduate level. Little research has been done focusing on the intersection of both experiential learning and the use of technology (Murphrey, 2010). Based on a case study built upon an introductory online digital media class in a large urban school, this article situates ee-learning theory at the intersection of students' everyday digital media experiences and an online learning environment. In this class, students learn

about social, technological, and cultural implications of digital media technology, reflect upon their digital media experiences, and create media content.

Literature Review

ee-Learning

The term experiential e-learning, or ee-learning, refers to the possibility of bringing together everyday experience and communication technologies (Beard et al., 2007; Carver et al., 2007; Murphrey, 2010; Riedel et al., 2007; Trevitte & Eskow, 2007). At the center of experiential learning is John Dewey's notion of continuity of experience and interaction. One of the most cited experientialists, David Kolb (1984), describes the experiential learning process as "a process whereby concepts are derived from and continually modified by experience" (p. 28). By synthesizing the three learning models of Lewin, Dewey, and Piaget, which emphasize direct experience, Kolb (1984) asserts that for the learner to be effective in gaining knowledge or skill, he or she has to fully engage in four main stages: (1) concrete experience (CE); (2) reflective observation (RO); (3) abstract conceptualization (AC); and (4) active experimentation (AE). For Kolb (1984), in an effective learning process, a learner negotiates the dialectics between concrete experience and abstract conceptualization, and between observation and action. Concrete experience, or an interaction with the world, provides a learner with a reference point with textures, feelings, meanings, and emotional impulses. A learner is then able to reflect upon their concrete experience from different perspectives in order to form an initial theory in a stage Kolb (1984) calls abstract conceptualization. Experientialists consider senses and emotions important stimuli and moving forces in the learning process (Beard et al., 2007). Then based on one's own abstract conceptualization a learner must be able to enact and solve a problem. This case study foregrounds students' direct media experiences with digital media and technology, and strives to showcase an example which incorporates the full experiential learning cycle into a digital media class. This full learning cycle is difficult to achieve because within the cycle new knowledge and experience often contradict each other. That is why reflection and abstraction are crucial in the relearning process to create newer meanings based on the contradictions between students' prior and new experiences. Kolb's (1984) model creates a theoretical basis for assessing the design of an online undergraduate course as shown in Figure 1 below. The author's analysis of the learning process is consistent with Bloom's (1956) taxonomy, which ranks evaluation and analysis higher than the learning that derives from direct experiences.

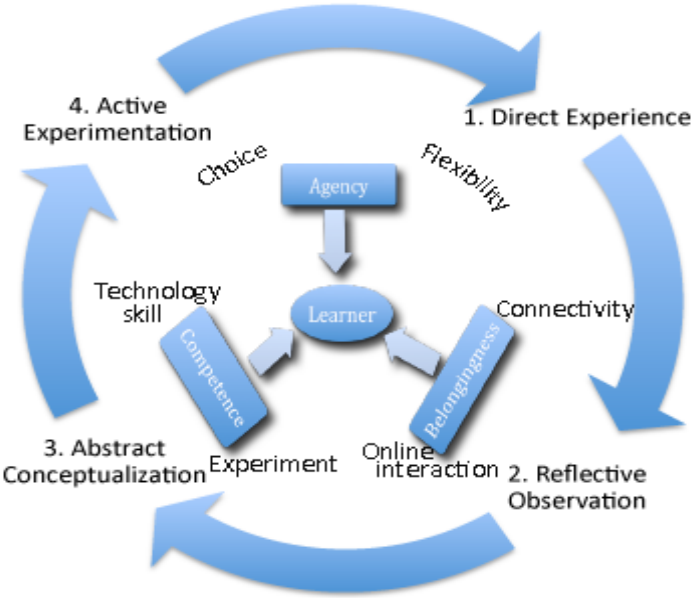

Figure 1. Theoretical framework integrating Kolb's learning cycle and Carver et al.'s (2007) ee-learning core concepts.

Experiential e-learning theory borrows its core concepts from Dewey's (1938) principles of the continuous interplay between experience and learning, and Freire's (1970) dialectical interactions between students and teachers. It follows that ee-learning pedagogues have integrated Freirean (1970)

dialectical interactions and Dewey's (1938) continuity of experiences into online courses (Carver et al., 2007; Lalonde, 2011). Carver and colleagues (2007) analyzed different types of ee-learning based on the degrees to which students' experiences and interactions are drawn into the course design and activities. The authors argue that the more students' experiences and interactions are drawn into the course design and activities, the more online education can bolster agency, belongingness, and competence among online students. Carver and colleagues (2007) go on to explain the core concepts of ee-learning: learner centeredness, agency, belongingness, competence, and center of gravity as discussed below.

Learner-centeredness

Compared to an on-site classroom, an online class offers a learner much more flexibility and control over the learning process. A learner often decides when, where, and from what sources he or she learns, and this situation requires that the teacher focus on an individual learner, his or her interests, and his or her prior experiences and learning styles (Carver et al., 2007; Darfy, 2009; Huang, 2002; Knowles, 1990; Knowlton, 2000; Shin & Lee, 2009). Drawing upon students' experience and encouraging students to reflect upon their situations in relation to the course materials and readings are much more effective in online classes (Carver et al., 2007; Northedge 2006). Experientialists deliberately design online course activities and assignments based on students' knowledge, experience, and motivation. Carver et al. (2007) discuss this focus under the concept of "the center of gravity" of the educational process. By focusing on the concepts of "learner centeredness" and "center of gravity," Carver et al. (2007) do not focus on teachers' roles, but state "teachers design and cultivate environments in which direct instruction serves only to support student learning" (p. 249). In an online environment, the role of a teacher changes from a knowledge disseminator to a mentor, and a facilitator of the learning process where students take charge over the learning process (Huang, 2002; Kennedy, 2004; Knowlton, 2000; Murphrey, 2010; Smyth, 2011). By acknowledging the changing roles of a teacher in an online environment, and by placing the learner at the center, Carver et al. (2007) argue that learner centered online classes foster agency, competence, and belongingness in learners. These concepts are discussed below following Carver et al. (2007).

Agency

Agency refers to the sense of a learner being capable of taking actions and making differences (Carver et al., 2007). As explained by Freire (1970), learners are not "empty vessels" which need to be filled with information in what he calls the "banking" model of education, but rather cognitive and responsible actors who persistently inquire and take responsibility for the learning process. Through dialogue and interaction, students share the responsibilities of the learning processes. Experiential learning "supports students' sense of agency by building experiences into their education that are authentic and afford an appropriate level of challenge to engage students" (Carver et al., 2007, p. 251). In online classes, students develop their agency through self-directed learning as they manage their own time, test their own knowledge, and overcome their own anxiety and frustration (Weinstein, Meyer, & Husman, 2006). Students' agency is enhanced by greater choice and flexibility in online classes.

Belongingness

Educators point out that a learner's isolation is one of the challenges of online learning that needs to be overcome (Carver et al., 2007; Huang 2002). A range of online communication strategies that have become available in recent years offer more connectivity between teachers and students, as well as among students, thereby increasing the potential for a student's sense of belongingness. Current synchronous communication technology like Wimba Classroom affords students and teachers the ability to communicate using real time video and audio conferencing, virtual groups, online screen sharing, and interactive chat. These environments allow more authentic and interactive learning environments that are helpful for building trust and bonding among learners (Smyth, 2011). Asynchronous online discussion forums, in which students respond to questions posed by the instructor or other students and where they share their experience, tend to develop a community among learners (Carver et al., 2007; Huang, 2002; Murphrey, 2010). Conversation initiated by students based on their needs rather than by the instructor tends to heighten the experiential value of discussion forums (Carver et al., 2007).

Competence

"Developing competence – acquiring knowledge, mastering skills, and learning to apply what is learned – is the focus of all education, whether in traditional or in online learning environments" (Carver et al.,

2007, p. 251). As more students enroll in online classes, the differences in technological skills and competence among learners widen, and these differences are often undetected (Murphrey, 2010; Wasilik & Bolliger, 2009; Zhu & Kaplan, 2006). This situation questions the popular media discourse of the "net generation" (Tapscott, 2008) and "digital natives" (Prensky, 2001) that claims that young people born after the 1980s grew up with digital media, have distinct and intrinsic understanding of technology, and are unlike "digital immigrants" (Prensky, 2001), who are older and did not grow up with digital technology. However, scholars have shown this "digital native" argument lacks empirical evidence in that other variables such as socio-economic status, education, cultural background, and experience equally play important roles in digital media use (Bennett, Maton, & Kervin, 2008; Bennett & Maton, 2010; Bullen, Morgan, & Qayyum, 2011; Helsper & Eynon, 2010). Furthermore, this discourse also downplays the importance of beneficial guidance and conceals the wide differences in digital technology use and skill among young people (Cheong, 2008; Helsper & Eynon, 2010; Livingstone, Bober, & Helsper, 2005).

In this case study, the core concepts recommended by Carver et al. (2007) are incorporated into the experiential learning cycle recommended by Kolb (1984) as shown in Figure 1. The ee-learning theory, which makes a conscious effort to integrate students' experiences into the curriculum (Carver et al., 2007), provides a useful framework to support the full learning cycle proposed by Kolb (1984). Particular emphases are given to students' competence with digital media, learner centeredness, agency bolstering through choices and control over one's education, and belongingness. Students' immediate experiences with digital media mimic the real world situations in which students find themselves in, and this allows the researcher to apply some core concepts of experiential e-learning at the undergraduate level. Experiential e-learning theory helps educators understand how the practicality of technological and skill differences of students plays out in the online classroom without uncritically buying into the "digital natives" arguments (Bennett et al., 2008; Bennett & Maton, 2010; Helsper & Eynon, 2010).

The Case Study: Introduction to Cybermedia

The author of this research taught an online course titled *Introduction to Cybermedia* for the four semesters of Fall 2009, Spring 2010, Fall 2010 and Spring 2011 in a large urban state school with a diverse student population. The subject of the class is digital media, which allowed the teacher to draw upon students' everyday digital media experiences. This situation allows the researcher to tease out the core concepts of the ee-learning theory proposed by Carver et al. (2007), such as learner centric design, bolstering agency, and technological competence. The research employs the case study methodology, which is used to "build up a rich picture of an entity, using different kinds of data collection and gathering the views, perceptions, experiences, and/or ideas of diverse individuals relating to the case" (Hamilton, 2011, para. 2). Different kinds of data used for the analysis draw from 1) student feedback forms collected at the end of the semesters by the institution where the class is taught (37 students or 40% of students filled out online student feedback forms); 2) results of media experience questionnaires administered during the virtual classes; 3) reflections and observations of the class by the instructor; and 4) student posts on discussion forums and student writings as part of the course.

Course Description

The main goals of the online course are to: (1) explore the economic, social, and cultural implications of the Internet; (2) develop critical skills for obtaining and evaluating online information and resources; and (3) learn web publishing processes and tools such as HTML or Adobe Dreamweaver. Approximately 23 students, mostly juniors and seniors, were enrolled each semester (total $N = 92$), as shown in Table 1.

Table 1
Class Enrollment

	Semesters			
	Fall 2009	Spring 2010	Fall 2010	Spring 2011
Enrollment	23	21	25	23

This is a lower-division required course for students who major or minor in digital media (around 21%) and is an elective course for the rest of the students (79%). The course has a prerequisite in digital media technology, which prepares the students for web design and media analysis required in this class. Students who have interest and affinity with digital technology tend to enroll in such a class. Only a few students had taken online classes prior to enrolling in this course.

Even though the basic structure of the class was similar in all four semesters, the syllabi were adjusted from semester to semester to meet students' needs and to keep up with technological changes. After the Spring 2009 semester, a couple of students indicated on the course feedback forms that a face-to-face meeting would help them to learn web design and web publishing processes better. Following the suggestion, a once-a-semester face-to-face meeting for two hours was added to the syllabus. Students are required to attend this once-a-semester meeting, unless their distance from the campus makes it prohibitive for them to do so.

The course requires that students use and learn the following technology and tools: 1) the learning management system, Blackboard; 2) the online classroom software, Wimba Classroom; and 3) either hypertext markup language (HTML) in combination with a file transferring (FTP) software, or Adobe Dreamweaver. By allowing students freedom to choose the web design tools they use, the instructor encourages them to continue to develop and apply their web design skills even after class ends using either free and open-source tools or the common industry standard software. These software and tools change and upgrade constantly, which influences the course design and activities. When the instructor taught the class during the Spring of 2009, the video features of Wimba Classroom were not fully developed, and communication was primarily via textual chat features in virtual classes. Starting in the Fall 2009 semester, all video and audio features of the virtual classroom management software were used in virtual classes. Adobe Dreamweaver updated its software three times in two years from Adobe Creative Suite 3 to Creative Suite 5. Although the exact software requirements did evolve to remain relevant, the course mission was stable throughout the iterations.

Students' Digital Media Experiences

Following Kolb (1984) and Dewey (1938), the assessment of the ee-learning course design in this case study focuses upon students' direct media experiences and their reflection and analyses. In order to understand students' digital media experiences, as well as to draw students' media experiences into virtual class discussions, the instructor surveyed students' digital media experiences using interactive questionnaires that included both multiple-choice interactive questions and short answer questions. Among the multiple choice questions were: "How often do you use the Internet?"; "For what purposes do you use the Internet most often?"; and "How much experience do you have in web design?" The short answer questions included "How do you evaluate online sources?" and "Give an example of an Internet exclusion of your own experience."

Questions related to the class themes were posed during the synchronous virtual classes at different times over the course of four semesters in which one group of students (up to 14 students) participated as shown in Table 2 below. The same questions were asked each of the four semesters.

Table 2

Students' Media Experience Questionnaire Results

	Semesters				Total
	Fa 09	Sp 10	Fa 10	Sp 11	
1. How often do you watch television?					
A) 0-5 hours a week	4	5	2	1	12
B) 5-10 hours a week	4	5	4	4	17
C) 10-15 hours a week	1	2	1	0	4
D) 15-20 hours a week	1	2	0	1	4
E) more than 20 hours a week	0	0	1	0	1
Total	**10**	**14**	**8**	**6**	**38**
2. How often do you use the Internet?					
A) 0-5 hours a week	0	0	0	0	0
B) 5-10 hours a week	1	1	1	0	3
C) 10-15 hours a week	0	0	2	1	3

D) 15-20 hours a week	4	5	2	1	12
E) more than 20 hours a week	5	8	3	3	19
Total	**10**	**14**	**8**	**5**	**37**
3. How much experience do you have in web design?					
A) expert level experience	0	0	0	0	0
B) intermediate level experience	2	3	1	0	6
C) some experience	4	5	2	3	14
D) no experience	4	3	1	1	9
Total	**10**	**11**	**4**	**4**	**29**
4. For what purposes do you use the Internet most often? (select multiple options)					
A) information seeking for study and work	8	11	6	2	27
B) communicating using emails	5	7	5	2	19
C) affiliating in social networking such as Facebook and Myspace	5	9	5	2	21
D) entertainment (watch videos, listen to music)	5	10	4	2	21
E) expressing opinions (discussion forums, blogs)	3	1	2	1	7
F) creativity and self affirmation	0	3	1	1	5
G) other	0	2	0	0	2
Total	**8**	**13**	**6**	**2**	**29**

To compare students' traditional and new media use, two questions – "How often do you use the Internet?" and "How often do you watch television?" – were asked during the synchronous online classes, and students were asked to respond to interactive questions in 2 to 5 minutes. As shown in Table 2, 84% of students (31 students out of 37) responded that they use the Internet more than 15 hours per week by choosing the options D and E, compared to 16% of students (6 students out of 37) who indicated that they use the Internet less than 15 hours per week by choosing the options A, B, and C. This result is a contrast to the responses to the question "How often do you watch television?," to which only 13% of students (5 out of 38) responded that they watch television 15 hours or more by choosing the options D and E, and 87% of students (33 students out of 38) indicated they watch television 15 hours or less a week by choosing the options A, B, and C. These results show that on average the students use the Internet more often than they watch television.

Students were also asked the question, "For what purposes do you use the Internet most often?" They were given the following options and told to mark as many as applied: (A) information seeking for study and work; (B) communicating using emails; (C) affiliating in social networking such as Facebook and Myspace; (D) entertainment (watching videos, listening to music); (E) expressing opinions (discussion forums, blogs); (F) creativity and self affirmation; and (G) other. As shown in Table 2, students use social networks such as Facebook (21 students out of 29 or 72% of students chose the option C more than they read and send emails, while 19 out of 29 students or 65% of students chose the option B). Students use the Internet for entertainment purposes such as watching movies and listening to music (21 out of 29 or 72% of students) more often than they blog or creatively express on the Internet (5 out of 29 or 17% of students). Given the small size of the sample and the exploratory nature of the questionnaire in an interactive Wimba Classroom environment, no inferential statistics were carried out to make generalizations beyond this case study.

Learner-Centered Course Design

Educators espousing ee-learning emphasize the importance of drawing upon students' experiences, the integration of real world authentic problems, and students' control over the educational process (agency) in online education (Carver et al., 2007; Correia, 2008; Dunlap et al., 2008; Murphrey, 2010). This emphasis tallies with the principles of e-learning course design, which also advocate student-centered learning and pedagogically sound technology integration (Fabry, 2009; Knowlton, 2000; Lalonde, 2011, Northedge, 2006). Following ee-learning theorists and at the same time borrowing from online

pedagogical principles, this course integrates students' digital media experiences into the different course requirements and activities.

As recommended by Kolb (1984), students' digital media experiences, first of all, are integrated into the course assignments. Students in the class are required to complete two major projects by the end of the semester. First, the student writes a term paper reflecting upon his or her experiences of using digital media on various topics such as video games, copyright law, social networking, and the digital divide. The project is designed to make students reflect upon their own media experiences in relation to social, cultural, and ethical issues of digital media use. The second major project is designed to provide each student with real-world experience in digital media production by designing a website for various purposes: for personal use, for his or her rock band, for a family-owned restaurant, or for a student group in which the student holds membership. Students have more control over their educational processes by choosing the topic of their term paper, as well as software for their web design project. This way, students are allowed to build upon their own prior media experiences and are more motivated to read, research scholarly articles, and watch videos to further their interests.

Choices and flexibility need to be combined with a good structure and sequencing in online courses (Knowlton, 2000; Northedge, 2006). Students complete the projects described above in three sequenced assignments. A term paper is completed in three assignments. First, the student chooses a topic related to his or her digital media experiences, and explains why he or she would like to research this topic; then, the student researches the topic, summarizes four to six plausible online and offline sources, and evaluates the credibility of the chosen sources; and finally, the student writes the final research paper by developing a thesis and arguments reflecting upon personal media experiences, while synthesizing course materials and the found sources. Concrete media experiences (CE) allow students to engage at a deeper level with lecture notes and class readings. When direct experience reverberates with conceptual and theoretical materials (AC), the possibility for completing the full learning cycle of Kolb (1984) occurs. In the next major project, the student builds a personal or an organizational website by completing three stages as well: (A) the student analyzes an already existing website; (B) the student creates a front page of a personal website; and then (C) the student builds a final website. This sequence of assignments allows students to observe and reflect upon existing digital media outlets (CE and RO) and actively experiment (AE) by designing their own websites (AE). Sequencing allows an instructor to communicate frequently with students on their progress. Students refer to and reflect upon their digital media experiences when discussing reading materials and interacting with each other and the instructor in synchronous virtual classes, as well as in asynchronous discussion forums. Course activities are illustrated in Table 3 below as adopted from Northedge (2006), with consideration of approximate hours planned for learning activities throughout a 15-week semester.

Table 3

Weekly Hours Represented As Teaching and Learning Activities

	Semester Weeks														
Teaching/Learning Activities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Framing (Guides, Instructions)	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2
Reading Lecture Notes	1	1	1	1	1	0.5	1	1	1	1	1	1	1	1	
Virtual Classes	1		1		1		1		1		1		1		1
Reading Class Materials	1.5	2	1.5	1.5	1.5	2	1	1	1	1	1	2	1		1
Audio/Video	0.5	0.5		0.5				1.5	1.5	1	1		2.3	2	2
Assignments		1	1.5	1.5	1	2	2			1	1.8	2.5			
Discussion Forums	0.5	1		1	1	1		1		1		0.3		1	
Skill Development	0.5	0.5	0.5				0.5	1	1.5	1			1	2	2
Total	6	6	5.5	6	6	6	6	6	6.5	6.2	6	6	6.5	6.2	6.2

The first line item in the table refers to the "framing" and "teaching narrative" by which a distance educator contextualizes text materials and "paints a big picture" (Northedge, 2006, p. 293; see also: Knowlton, 2000). At the same time, framing and teaching narratives explain what the goals of various learning activities are, how certain readings and materials can effectively be learned, the goals and expectations of assignments, and why these processes are chosen to benefit their learning. Answering the question "What aspects of the course or the instructor's approach contributed most to your learning?" a student wrote the following on the student feedback form:

> *"One of the most helpful things was the briefing emails sent out each Monday. With the class being online, this really helped me to stay on track and make sure I got all the work done on time"* (Student comment #5, Fall 2010).

As the student above indicates, framing and teaching narratives also help students organize their weekly routine, and thus become a more self-regulated learner.

Lecture notes and course materials in this class are prepared to meet the learning needs of the specific students by drawing upon the students' media experiences, by including current articles and video materials, and by writing the lecture notes in an interactive and immediate way. For example, when students had problems with uploading their web pages to a university web server, the instructor wrote a specific guideline addressing that particular issue. Students also need to learn current and relevant digital media information because of rapid technological changes. On the course evaluation form, a student responded to the question, "What aspects of the course or the instructor's approach contributed most to your learning?" by stating:

> *"The instructor did not use a textbook for the class and I think this benefits the learning process. Because we are learning about cybermedia teaching the course by using scholarly articles and the Internet have given us a full scope of the topic. There are also weekly live class meetings and this allows the students to discuss the material of the week, which is an excellent approach to the learning process"* (Student comment #1, Fall 2010).

Another student wrote:

> *"It also helped that a lot of the course material (videos, articles etc.) were fairly recent which made it more engaging to examine on my own"* (Student comment #5, Fall 2010).

Rewatchable and up-to-date online video tutorials and featured videos prepared by experts on sites such as YouTube or Lynda.com that are relevant to student interests and experiences nicely complement course materials. As can be seen in Table 3 above, in this course the students use video tutorials at Lynda.com to learn various web designing software and tools such as Dreamweaver and HTML. As online educators pointed out, compiling course materials, preparing lectures, and designing assignments that are relevant to students' learning goals and lived experiences are of the foremost importance for online teachers (Fabry, 2009; Knowlton, 2000; Smyth, 2011).

Students share and reflect upon their digital media use when they respond to the informal and interactive questionnaires in synchronous virtual classes, and this sharing in return tends to lead to effortless discussions of class reading materials and lectures. This way, students reflect upon their media use and relate new materials to their own media experiences, unfolding the four phases of the full experiential cycle described by Kolb (1984). Synchronous virtual environments like the Wimba Classroom simulate the face-to-face environment by allowing audio, video, and chat communication for students to discuss class materials, keep track of their progress, and bond with fellow students and the instructor socially and emotionally. In this new environment, traditional teacher-centered approaches and long lectures are ineffective because it is easy for students to ignore and work on other competing tasks (Lalonde, 2011; Northedge, 2006). The ee-learning theory emphasizing dialogical interactions and student experiences connect students' media experiences with classroom experiences as suggested by Carver et al. (2007).

Furthermore, when prompted by controversial questions and topics immediately relevant to students' experiences, online discussion forums effectively facilitate reflection, analysis, and

evaluation processes, which are critical for the experiential learning cycle of Kolb (1984). Topics such as the copyright law and the entertainment industry, search engines, the credibility of online information, and ethical dilemmas students face when using online music or videos tend to help students reflect upon their experiences. When students are taught to evaluate online sources using tools such as Alexa.com, which provides information on the history and credibility of various online sites, students rethink their previous online search experiences. One student after reading articles on evaluating online sources wrote: *"I had never thought to review the currency of the date and just simply assumed that if it was posted online it must be pretty relevant."* When students do not reflectively observe and conceptualize differences among search engine algorithms or how information sources appear on their screen, they tend to uncritically use online sources. The vast amount of information available online changes the nature of knowledge and questions the fundamental assumptions of higher learning (Fernback, 2003). When students engage and apply themselves by analyzing and evaluating class materials and relate them to their own direct experiences, this process yields a higher level of learning.

Bolstering Agency

In an online class, students have more control over the educational process, and this has contributed to the popularity of online courses (Carver et al., 2007; Lalonde, 2011; Murphrey, 2010; Knowlton, 2000). In an online environment, setting the tone that students are in charge of their education and involving students in the educational process starts even before the semester begins. In this class, students get involved in an online discussion forum by introducing themselves to each other and indicating their preferred day and time for online synchronous virtual class meetings. This initial student involvement sets the tone for the class by suggesting that student decisions matter and that the student is responsible for his or her own learning. Based on students' responses, days and time slots for class virtual meetings are chosen. Students appreciate the choice and flexibility they are given, and at the same time they develop a sense of agency.

Despite students' direct experience with online social networks and digital media devices such as iPhones and iPads, a wide variance exists among students in their information-searching skills, their confidence level in using instructional software such as the Wimba Classroom, and their self-regulatory skills in following instructions for publishing websites and creating content on the Internet. When the instructor surveyed prior experiences with web design using an interactive questionnaire, 69% of students (20 students out of 29) indicated that they had some or intermediate web publishing experience acquired either in high school or in other college classes, whereas 31% of students (nine out of 29) responded that they have no experience with web design as shown in Table 2. In this class, students complete website design projects using tools and software of their choice. Students sometimes try to complete the project without paying close attention to the basic processes of information exchange on the Internet (e.g., transferring files from a local computer to a web server or information architecture of websites) despite the fact that guidance and additional materials were provided to them. Some students exclaimed, "It worked before, but why is it not working now?" Applying acquired skills to a different situation requires analytical and reflexive steps without which, as Kolb (1984) suggests, the full cycle of acquiring new knowledge is not complete. As more students start to experience digital media at ever younger ages with sophisticated, yet simple-looking devices (e.g., iPhone and iPad), they tend to take the simplicity and ease of technology for granted without questioning or reflecting upon the context. Zittrain (2008) calls these new technologies "non-generative," which stand in contrast to "generative" technologies like personal computers that allow users to tinker, explore, and modify. In other words, students need to be taught to critically reflect upon a difference between invisibility and transparency in technological design. As media industries create more "non-generative" technology, educational institutions need to boost students' technological competence and critical thinking.

The immediacy and availability of media "on the go" have blurred time and space distances, as well as the expectations concerning the formality of communication between an instructor and a student. Online educators pointed out that an instructor's immediate and open communication

engages students emotionally and cognitively (Murphrey, 2010), and his or her timely feedback ensures effective interactions between an instructor and a student in online classes (Fabry, 2009; Hirumi, 2005; Northedge, 2006). In this class, students sometimes send the instructor Internet Relay Chat (IRC) questions and messages regarding class assignments and technical difficulties. A virtual meeting upon request from a student sometimes leads to serendipitous teaching moments that are not as typical in traditional classes. Seasoned online educators may set clear communication policies regarding the turnaround time for email and the level of formality of correspondence, which might also include mobile technologies.

Belongingness

One of the main challenges of online education is overcoming learners' isolation and building a community of learners (Carver et al., 2007; Huang, 2002; Lalonde, 2011; Riedel et al., 2007). Online classes do not provide regular on-site class meetings where students and teachers routinely interact in a shared physical space, and this situation may contribute to learners' frustration and failure to complete an online course (Carver et al., 2007). Therefore, online educators have employed multifaceted approaches to establishing a community of learners. In this class, two main modes of communication were used to create a community of learners: synchronous virtual class meetings and asynchronous online forums.

Synchronous virtual class meetings were held every other week in the Wimba Classroom environment to share media experiences, to discuss class materials and assignments, and to connect the learners. The Wimba Classroom environment enables video, audio, and chat features, and other possibilities for students to connect with each other socially and emotionally. The students in this class were encouraged to fully voice their experiences and feelings by raising hands (a feature in the Wimba Classroom) and using video, audio, and other emoticon features such as applauding/approving each other's responses in virtual classes. Those students who are active in online virtual classes find these synchronous meetings useful, and they perform better than the students who are less active. The qualitative answers of student feedback of the class suggest that the synchronous virtual class meetings helped them learn and connect with classmates. Students wrote the following responses to the class evaluation question "What aspects of the course or the instructor's approach contributed most to your learning?":

> *"Our actual classroom day when we were all able to come together as a class and start our projects and ask questions was a big help"* (Student comment #2, Fall 2010)
> *"The weekly online class discussions gave me an opportunity to interact with other students and ask or propose questions in a unique classroom atmosphere"* (Student comment #4, Spring 2010)
> *"I liked how the professor provided students the opportunity to communicate with her and other classmates via Wimba Classroom. This was an interesting aspect of the course"* (Student comment #3, Spring 2010)

The above quotes from students' course evaluation indicate enthusiasm for synchronous virtual classes because they allow students to connect with each other creating a community of learners. However, not all students value virtual classes as suggested by one of the students who answers the question "What aspects of the course or the instructor's approach would you change to improve the learning that takes place in the course?" The student wrote:

> *"I would honestly focus less on the idea of the live classroom. It seemed that most of the students lived on campus. So, if we wanted to take a class where we had regular class meetings, we could have taken a normal class. I took the online class because it is hard for me to fit normal classes into my hectic schedule. The briefings and discussion forums are great, but the required virtual meetings at specific times just don't make sense for an online class to me"* (Student comment #4, Spring 2010).

As the student indicates, synchronous virtual class meetings require students to meet at a specific time on a specific day, which in turn may create some inflexibility for students. Given the technological constraint of the virtual Wimba Classroom, which limits the number of students simultaneously participating in a productive and manageable virtual class to under 12, the class

was divided into two similar group meetings, only one of which a student was required to attend. Students experienced some technological difficulties, especially in the beginning of the semester, in setting up the Wimba Classroom software, and making audio and video features compatible with the classroom environment. This frustration can be seen in this student's feedback, who wrote:

> *"I had trouble getting used to the online format. In some ways I wish it was a computer lab class rather than an online class. I also wish it focused more on HTML"* (Student comment #4, Fall 2009).

Despite the guidance provided in setting up the virtual classroom environment, technological competence among students led to different levels of participation by students that would not have transpired in traditional on-site classrooms. In some cases, students participated in virtual classes from the university library or other public places limiting their audio and video participation, and in other cases the delay in the network deteriorated the audio and video communication in virtual classes. Technological limitations to some extent increased the desire among students to visit the instructor and each other. Especially, when students worked on their web design projects, they either visited the instructor or helped each other to complete the project. After teaching the first year online class without any face-to-face real meetings, a once a semester face-to-face meeting was added following students' suggestions.

Students also aspire to connect with an instructor and fellow students in online classes via online discussion forums because they allow students greater flexibility in time. To promote a community of learners from the beginning, three discussion forums were created in the very beginning of the semester: "Meet your classmates" (for students to introduce themselves to the class), "Preferred days and time for virtual classes" (for students to indicate their availability for virtual classes), and "Class-related questions and comments" (for students to ask class-related questions and respond to one another). These initial discussion forums were designed to remind students that they are a part of the community of learners, and allow them to overcome isolation and frustration when they face difficult questions. Furthermore, throughout the semester, students were required to respond to class readings and reflect upon their own digital media experiences in several discussion forums. The instructor sought out questions and probes that related to students' media experiences, which in turn facilitated reflection and analysis. The discussion forum questions included:

- Why do you think different search engines give different search results to your search inquiry?;
- What were the main technological developments behind the growth of file sharing and music/video exchanges on the Internet?; and
- What was the initial purpose of copyright? Explain/elaborate your position on copyright.

Discussion forums often served the purpose of engaging students with class lectures and materials. Written forms of communication in discussion forums also encourage students who might be wary of expressing themselves in synchronous video and audio communication (Lalonde, 2011; Shin & Lee, 2009), and discussion forums engaged a greater number of students. However, students' postings based on class readings within a limited time (1-2 weeks) were often similar and did not bring up diverse points of views in discussions. More elaborate discussion forum threads for different themes and assigning roles to students to facilitate discussion forums possibly could have fostered a more engaged learning community.

Conclusion

This case study explored the ways educators can incorporate students' digital media experiences into an online learning environment at the undergraduate level. The core concepts of ee-learning theory were adopted to encourage students to reflect upon and analyze their digital media experiences. Though exploratory in nature, this case study provides examples of course design components, which take into account learners' interests, digital media experiences, and technological skill levels. First, assignments in this course gave students greater choices in term paper topics and web design tools in order to help students feel more in control of their learning

processes. At the same time, the instructor sequenced these assignments so that students could evaluate their own progress based on teacher feedback and improve their self-regulation, thus developing agency. Moreover, the case study strived to integrate students' media experiences in discussion forums and virtual classes and was able to achieve this goal to a limited extent. Discussion forum topics that are immediately relevant to students' media experiences spawned analysis and reflection by students as exemplified in the evaluation of online sources discussion forum topics. Finally, course materials, instructions, and the environment were designed to support students' learning.

The course faced several challenges in: (1) building a community through virtual classes; (2) negotiating differing expectations of students in regard to the "norms" of online classes; and (3) accounting for differences in access to technology, technological skills, and confidence among students. Maintaining the learner's community and belongingness was challenging due to the time flexibility that online education affords, and the varying expectations among students regarding the "norms" of online classes. Some students choose an online class for its time flexibility, and the expectations regarding the course load and meeting times for online classes are still evolving. As more technology simulates face-to-face meetings with video and audio features, virtual classes are increasingly being used to support a learner's community. Building a learner's community in virtual classes was simultaneously facilitated and constrained by technology. In other words, the technology used in class did not seamlessly service the pedagogical goals of the class. These areas are still evolving, and ee-learning theory, which weds students' experiences and technology, also helps us to evaluate, reflect, analyze, and grow in our own knowledge of the online learning process.

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