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Building a Community of Inquiry and Analytical Skills in an Online History Course

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The purpose of this case study was to assess a history instructor's attempt to redesign an introductory history survey course. Traditionally, it has been taught in a face-to-face environment within the university's core curriculum program. It was redesigned as a synchronous online course that provided students with opportunities to work collaboratively to build a community of inquiry and to develop the analytical skills needed to understand course materials and compete in the 21st-century workforce. Students were required to attend daily 100-minute web conferencing sessions consisting of mini-lectures, polling questions and discussions in large and small groups (i.e., "breakout rooms"). Daily quizzes were introduced to incentivize students to complete the assigned readings and help them prepare to contribute meaningfully to group discussions, as well as to allow the instructor to assess student understanding objectively. Students completed a modified Community of Inquiry Survey at the end of the course. Results showed that the instructor was able to build a strong level of community of inquiry, teaching presence, social presence, and cognitive presence.

The purpose of this case study was to assess a history instructor's attempt to redesign an introductory history course from a face-to-face class to a distance education class that included high levels of community of inquiry and analytical skills.

Literature Review

Lecture-based instruction has traditionally been the preferred mode of pedagogy for college-level introductory history surveys in the United States and elsewhere (Trinkle, 1999). In this mode, the instructor's role is to present historical content, ideally in a way that models critical thinking and stimulates the same in the students. The student's role is to take notes on the information presented, ideally in a way that captures the instructor's key arguments, and assesses the cogency of those arguments in relation to the evidence marshaled. In theory, the pedagogy incorporates opportunities for students to develop critical thinking skills. In reality, because many of the students taking such courses are not skilled note-takers, their lecture notes, when they make an effort to take them, are often far from ideal. From a student's perspective, lecture-based instruction can make history appear to be little more than a concatenation of facts to be memorized, "a stream of names and dates unrelated to their own lives" (Edmonds, Hull, Janik, & Rylance, 2005, p. 4). The passive learning that characterizes lecture-based instruction can make it difficult for students to develop the analytical skills necessary for understanding historical (and other) subject matter (Mader, 2012). Indeed, citing recent research, Butin (2010) argued that "traditional didactic, lecture-based instruction is the worst form of instruction for the vast majority of our students and for most types of content" (p. 45). It seems clear, however, that history instructors are increasingly turning away from lecture-based instruction and toward modes of pedagogy that enhance student learning by emphasizing their active participation in assignments and in-class exercises designed to help them develop critical thinking and effective communication skills (Mader, 2012). Such activities can include (a) evaluating sources, (b) identifying key passages in documents, (c) identifying underlying assumptions, (d) identifying points of view, (e) evaluating reasoning and logic, (f) evaluating inferences, (g) evaluating evidence, (h) assessing completeness, (i) articulating implications, and (j) taking a stand (Edmonds et al., 2005). Instead of the passive learning that characterizes lecture-based instruction, courses that force students to work collaboratively with the instructor and their peers to make meaning of course content promise to make students active learners and help them develop the skills they need to succeed in the classroom and compete for jobs in the 21st century.

Critics of higher education in the United States claim that many students are failing to develop higher-order cognitive skills such as critical thinking and complex reasoning because they are too focused on content coverage (Arum & Roksa, 2011; Paul, 1992). This type of learning, the argument goes, fails to prepare students to enter the 21st century workforce, where employers place greater value on the ability of employees to analyze (as opposed to memorize) data, work collaboratively, and communicate effectively (Bissonnette, 2010; Garrison & Anderson, 2003; Sternberg, 2013; Summers, 2012). A survey of employers by Hart Research Associates (2012) found that 93% of them agreed that "a candidate's demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major" (p. 1). Scriven and Paul (1987) defined critical thinking as "the intellectually

disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (para. 2). In light of these considerations, and recognizing that most students enrolled in introductory history courses are not history majors, the university history teacher would be well advised to design courses that help students develop transferable skills that will serve them in other majors and in the workforce.

Research on teaching and learning in higher education indicates several limitations of lecture-based instruction. The lecture format stimulates students' lower centers of the brain (sometimes referred to as the "mindless" brain centers), and many students are unable to sustain focus in lecture for more than ten to 15 minutes in any case (Bligh, 2000; Penner, 1994). Lecture-based instruction typically provides few, if any, opportunities for students to work collaboratively with both instructor and peers to make meaning of course materials and to develop their analytical and communication skills (Organization of Economic Cooperation and Development, 2009). Indeed, one study has found that faculty in higher education speak 86% of the time in class (Brown & Atkins, 1988). Yet, despite the inherent limitations of lecturing, lecture-based instruction continues to predominate in most colleges and universities in the United States. If students are to develop the skills they need to succeed in all their courses and to compete on the increasingly competitive global job market, they need to be given more opportunities to engage actively with course materials and to work collaboratively with peers (Kolb & Fry, 1975). This means that instructors need to do more to design courses that are learner-centered (as opposed to instructor-centered), and create a community of inquiry where students are made chiefly responsible for making sense of course materials in the classroom, whether in a face-to-face or online learning environment.

Collaborative learning contributes to building a community of inquiry and helps students develop their analytical and communication skills by requiring them to respond to the instructor and each other during group discussions (Bailin, Case, Coombs, & Daniels, 1999; Thayer-Bacon, 2000). The concept of knowledge formation by a community of inquiry was first introduced by educational philosophers Charles Sanders Peirce (1877) and John Dewey (1902). In a community of inquiry, knowledge is considered to be fluid and complex, involving overlapping disciplines, and therefore requiring interaction between a community of learners and an instructor or facilitator to guide group work and to help the community of learners form new levels of understanding. A classroom engaged in authentic inquiry leads to "questioning, reasoning, connecting, deliberating, challenging, and developing problem-solving techniques" (Lipman, 2003, pp. 20-21). Garrison and Anderson (2003) defined a community of inquiry as a group "composed of teachers and students transacting with the specific purposes of facilitating, constructing, and validating understanding, and of developing capabilities that will lead to further learning" (p. 23).

Scholars have applied the concept of community of inquiry to online learning when examining the use of computer-mediated communication in an educational experience (Garrison, Anderson, & Archer, 2000). When initially developed, online classes were designed using asynchronous technologies allowing students to access course material at any time and from any number of places. This gave students increased independence, but it also meant increased isolation and, often, a loss of opportunities for collaborative learning. Independence and collaboration seemed contradictions (Garrison & Anderson, 2003). Because collaboration in online classes does not happen spontaneously, the instructor must intentionally design online courses to include assignments and exercises that require students to work together to develop a strong level of community of inquiry. Researchers have demonstrated that online classes can be designed to achieve high levels of community of inquiry by incorporating assignments and exercises designed to promote communication and collaboration among learners (Garrison et al., 2000). It is important for students to have frequent opportunities to interact with their intellectual community to enhance their knowledge construction (Vygotsky, 1962). The three types of interactions that are critical to students' intellectual development are learner-content, learner-instruction, and learner-learner interactions (Moore, 1989). Advances in newly developing Web 2.0 technologies such as web conferencing now allow instructors to include more activities that help to improve interactions between geographically separated participants in distance education classes (Hwee Ling, 2007).

The three elements that make up community of inquiry are (a) cognitive presence, (b) social presence, and (c) teaching presence. *Cognitive presence* has been defined as "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry" (Garrison, Anderson, & Archer, 2001, p. 5). *Social presence* can be defined as an individual's ability to project themselves into the community of inquiry and be perceived as a "real" person (Gunawardena & Zittle, 1997). *Teaching presence* has been defined as "the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning

outcomes" (Anderson, Rourke, Garrison, & Archer, 2001). In an online environment, a community of inquiry does not naturally occur and must be intentionally designed into the course. Students often have few, if any, opportunities to speak to each other, and opportunities to discuss course materials are often perfunctory and otherwise circumscribed. In order to build a community of inquiry in an online environment, the instructor must design assignments requiring meaningful and relevant interaction between the instructor and students on one hand and, on the other, among students.

Research Question

The present study assessed one university history instructor's attempt to redesign and deploy an introductory European history course, taught every semester in multiple sections by several faculty in a face-to-face classroom, to a synchronous online environment via web conferencing during an abbreviated summer term. The purpose of the study was to investigate if it is possible to achieve high levels of community of inquiry, social presence, teaching presence, and cognitive presence in an online introductory history course.

Methodology

Course Design

The new online course, The West and the World Since 1500 (HST 1200), was taught through the university's learning management system (LMS). The course required students to participate actively in daily 100-minute meetings using web conferencing technology. The meetings combined the instructor's live audio narration (approximately 5 minutes) of individual PowerPoint slides with polling activities and large- and small-group discussion of course materials. In addition to the instructor's slides and audio narration, the materials included an electronic history textbook, additional primary source readings posted on Pilot (the university's learning management software), and brief videos related to course themes. Students were required to have high speed Internet access and to use a USB noise cancelling headset with microphone for the purpose of being able to participate in discussions during the meetings.

The instructor faced several instructional challenges in achieving course objectives. First, most students enrolled in the course to fulfill a core curriculum requirement. In the instructor's experience, students often have limited enthusiasm for their core courses and as a result can be disengaged in the classroom—virtual or otherwise. Often students in such courses do not complete the assigned readings or so not consistently attend class meetings, making it difficult, if not impossible, for students to contribute meaningfully to discussions (Rae, 2011). Core courses also tend to have lower completion rates than courses offered within students' majors. A second instructional challenge was the need to design a course traditionally taught during a 16-week semester for an abbreviated 6-week summer term. A third challenge was to design a course that required students to interact in meaningful ways in an online virtual classroom.

The instructor made several course design decisions intended to mitigate these challenges. During the first meeting, the instructor and students together reviewed a detailed syllabus outlining course objectives and requirements, and indicating the assignments to be completed prior to each class meeting. Students were required to take an online syllabus quiz prior to the second meeting to validate their agreement and understanding of course policies and strategies. To encourage student engagement, the instructor made attendance and active participation in the daily meetings a requirement of the course, with participation counting for 25% of the final grade. Because the live sessions were recorded, students who chose not to attend them could earn participation points by posting a "missed class summary" on Pilot. (In practice, a student who missed the daily meeting rarely took advantage of this opportunity.) An undergraduate supplemental instruction leader was hired to help the instructor track student participation during the meetings.

To help students focus their reading and prepare for group discussions, the instructor posted "focus questions" in the course LMS and identification terms tied to the assigned readings and other materials. In addition, the instructor incorporated daily reading quizzes, tied to the focus questions and identifications, to be completed prior to each meeting, as well as a quiz at the end of the week to assess student understanding of the materials discussed during the meetings. The 10-question objective quizzes were administered electronically via Pilot; students were given 15 minutes to complete each quiz, which they could take twice, with the highest score counting as the final quiz grade. The quizzes counted for 50% of the final grade. A final exam consisting of objective questions counted for the remaining 25% of the final grade.

Thanks to web conferencing technology, there were many ways for students to participate in the live sessions. In fact, the virtual classroom combined many of the features of a face-to-face learning environment with additional e-learning tools such as instant messaging, polling questions, emoticons, audio and video interactions, application sharing, web touring, and breakout rooms. Based on research suggesting that "planning and facilitating frequent and relevant

[participant] interactions is the single most important thing [moderators] can do to create effective virtual classroom sessions" (Clark & Kwinn, 2007, p. 10), the instructor sought to minimize the time spent lecturing and maximize interactions with and among students. During meetings, the instructor used the "talk" tool to provide audio narration of PowerPoint slides uploaded onto the whiteboard, and to ask students to respond to questions via microphone or instant messaging. Students who joined the web conferencing sessions had their names indicated on the "participant panel," and they were able to use the "raised hand" tool to indicate a desire to ask or answer questions. This allowed the instructor to call on students by name. Students who for various reasons might be disinclined to use the talk tool to respond to the instructor's prompts could use instant messaging to participate. Another way students participated was by responding to polling questions projected onto the whiteboard. Student responses were anonymous (to other students but not to the instructor), and the group's collective response could be projected onto the whiteboard as a graph; which could then be used for debriefing and to prompt further discussion.

Research studies have shown that deep learning can be achieved by working collaboratively in small groups more effectively than by learning individually (Clark & Mayer, 2003; Jonassen, Lee, Yang, & Laffey, 2005). With this in mind, the instructor used the breakout rooms to facilitate peer discussion of course materials in groups of four to five students. Web conferencing technology allowed the instructor to assign particular students to particular groups, or to assign students randomly to groups. When prompted, students were able to move themselves to a breakout room by electronically dragging their names to the room using the "breakout room" tool. In breakout rooms, students were given an allotted amount of time (usually 5-7 minutes) to discuss questions or prompts on a slide sent to the room by the instructor. The prompts were typically taken from the assigned focus questions and usually involved analysis of primary sources. Students were asked to evaluate the sources in terms of provenance, reliability, and credibility; to identify key passages and underlying assumptions; to evaluate the reasoning and logic of arguments in relation to the evidence marshaled; and to take a stand on a "fighting question" posed by the instructor. Because these questions were open-ended, there was ample opportunity for students to develop critical thinking skills. Students were able to write and otherwise create content on the slides. Sometimes students were asked to choose a spokesperson for the purpose of debriefing on returning to the main room. Meantime, the instructor and supplemental instruction leader were able to move electronically among the breakout "rooms," sometimes encouraging participation and guiding the discussion, sometimes simply recording student observations and questions.

Participants

The students in this research study were enrolled at a mid-sized university located in the Midwest. Although 55 students originally enrolled in the course, only 19 were enrolled after the drop date. Of the 19 students who remained enrolled in the course, 15 completed a post-course survey. Permission to conduct the survey was requested and granted by the Community of Inquiry survey author and the Institutional Review Board at the university. The survey was created in Qualtrics, an online survey tool. A link to the electronic survey was emailed to undergraduate students through their LMS during the final week of the course. The researcher that sent the link to the undergraduate students was someone other than the course instructor.

Survey

A 34-question community of inquiry (CoI) survey was developed to measure the levels of teaching presence (TP), social presence (SP), and cognitive presence (CP) from students' perspectives (Swan et al., 2008). The CoI survey includes three subscales with the first 13 questions measuring TP, the next nine questions measuring SP, and the last twelve questions measuring CP (e.g., "The instructor clearly communicated important course topics"). The students were asked to respond using a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The survey has shown strong internal consistency with Cronbach's alphas of .96 for TP, .92 for SP, and .95 for CP (Diaz, Swan, Ice, & Kupczynski, 2010), indicating that the reliability of the CoI survey is high. Three open-ended survey questions were added to the CoI and used to gain additional insight from the participants. Five of the questions on the CoI included minor modifications suitable for the classes using web conferencing, with the phrase "web conferencing" substituting "online medium" or "course discussion." See Appendix for a copy of the survey and open-ended questions.

Results

The mean response for the CoI scales ranged from 3.21 to 4.94 (overall $M = 4.07$, $SD = 0.55$). Cronbach's alphas in the present study yielded high internal consistencies of .94 for CoI. Following are results for the three subscales (TP, SP, and CP) and the open-ended items.

TP, SP, and CP Subscales

The subscale for TP was measured in the first 13 questions of the CoI survey (see Table 1). The mean

response for TP ranged from 2.77 to 5.00 (overall M = 4.14, SD = 0.67). The Cronbach's alpha for TP was .90, indicating a high level of internal consistency. The subscale for SP was measured with questions 14 through 22 of the CoI survey (see Table 2). The mean response for SP ranged from 3.00 to 5.00 (overall M = 4.10, SD = 0.64). The Cronbach's alpha for SP was .90, indicating a high level of internal consistency. The subscale for CP is measured in questions 23 through 34 of the CoI survey (see Table 3). The mean response for CP ranged from 2.83 to 5.00 (overall M = 3.97, SD = 0.61). The Cronbach's alpha for CP was .91, indicating a high level of internal consistency.

Open-Ended Comments

Students were asked to provide open-ended comments to three questions at the end of the CoI survey. Students were asked to comment on the merits and shortcomings of course design in terms of opportunities to work collaboratively to develop a deeper understanding of course content. They were also asked to suggest ways to improve the course in terms of the same opportunities. A total of 11 students responded to the open-ended questions. The authors of the present study reviewed the comments and grouped them into four categories.

The first category comprises comments attesting to students' positive level of satisfaction with the course and/or instructor (n = 5). Examples include, "The class participation made it enjoyable"; "It was good"; "The professor was pretty good at explaining the material"; "[The instructor] has it down pat. I come from a long line of teachers and know what to expect in a class environment"; and, "I'm truly satisfied with my experience this course. I learned a lot."

The second category comprises comments indicating that the course design made it possible for participants to work together to make sense of course materials (n = 3). Examples include, "The group will

Table 1
CoI Survey Questions Measuring Teaching Presence

Question	N	Scale 1	2	3	4	5	M (SD)
The instructor clearly communicated important course topics.	15	1 6.7%	1 6.7%	1 6.7%	6 40.0%	6 40.0%	4.00 (1.20)
The instructor clearly communicated important course goals.	15	1 6.7%		1 6.7%	7 46.7%	6 40.0%	4.13 (1.06)
The instructor provided clear instructions on how to participate in course learning activities.	15	1 6.7%	1 6.7%	1 6.7%	5 33.3%	7 46.7%	4.07 (1.22)
The instructor clearly communicated important due dates/time frames for learning activities.	15	2 13.3%		1 6.7%	4 26.7%	8 53.3%	4.07 (1.39)
The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	15		2 13.3%	1 6.7%	4 26.7%	8 53.3%	4.20 (1.08)
The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	15			1 6.7%	6 40.0%	8 53.3%	4.47 (0.64)
The instructor helped to keep course participants engaged and participating in productive dialogue.	14	1 6.7%		1 6.7%	6 40.0%	6 40.0%	4.14 (1.10)
The instructor helped keep the course participants on task in a way that helped me to learn.	15			2 13.3%	7 46.7%	6 40.0%	4.27 (0.70)
The instructor encouraged course participants to explore new concepts in this course.	15	1 6.7%	1 6.7%	2 13.3%	4 26.7%	7 46.7%	4.00 (1.25)
Instructor actions reinforced the development of a sense of community among course participants.	15		1 6.7%	2 13.3%	5 33.3%	7 46.7%	4.20 (0.94)
The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	15			2 13.3%	5 33.3%	8 53.3%	4.40 (0.74)
The instructor provided feedback that helped me understand my strengths and weaknesses.	15			5 33.3%	6 40.0%	4 26.7%	3.93 (0.80)
The instructor provided feedback in a timely fashion.	15			5 33.3%	6 40.0%	4 26.7%	3.93 (0.80)

Note. The scale was from 1 (*strongly disagree*) to 3 (*neutral*) to 5 (*strongly agree*). The table includes the number and percent of responses for each question at each point in the scale.

Table 2
CoI Survey Questions Measuring Social Presence

Question	*N*	Scale 1	2	3	4	5	*M* (*SD*)
Getting to know other course participants gave me a sense of belonging in the course.	15	1 6.7%	1 6.7%	4 26.7%	5 33.3%	4 26.7%	3.67 (1.18)
I was able to form distinct impressions of some course participants.	15		1 6.7%	4 26.7%	5 33.3%	5 33.3%	3.93 (0.96)
Online or web-based communication is an excellent medium for social interaction.	15			3 20.0%	5 33.3%	7 46.7%	4.27 (0.80)
I felt comfortable conversing through web conferencing.	15			2 13.3%	6 40.0%	7 46.7%	4.33 (0.72)
I felt comfortable participating in the course web conference discussions.	15			2 13.3%	7 46.7%	6 40.0%	4.27 (0.70)
I felt comfortable interacting with other course participants.	15			3 20.0%	6 40.0%	6 40.0%	4.20 (0.77)
I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	14			4 26.7%	5 33.3%	5 33.3%	4.07 (0.83)
I felt that my point of view was acknowledged by other course participants.	15			3 20.0%	7 46.7%	5 33.3%	4.13 (0.74)
Online web conference discussions help me to develop a sense of collaboration.	15			3 20.0%	10 66.7%	2 13.3%	3.93 (0.59)

Note. The scale was from 1 (*strongly disagree*) to 3 (*neutral*) to 5 (*strongly agree*).

Table 3
CoI Survey Questions Measuring Cognitive Presence

Question	*N*	Scale 1	2	3	4	5	*M* (*SD*)
Problems posed increased my interest in course issues.	14			5 33.3%	6 40.0%	3 20.0%	3.86 (0.77)
Course activities piqued my curiosity.	14	1 6.7%		2 13.3%	8 53.3%	3 20.0%	3.86 (1.03)
I felt motivated to explore content related questions.	15			4 26.7%	7 46.7%	4 26.7%	4.00 (0.76)
I utilized a variety of information sources to explore problems posed in this course.	15		1 6.7%	4 26.7%	6 40.0%	4 26.7%	3.87 (0.92)
Brainstorming and finding relevant information helped me resolve content related questions.	15			2 13.3%	6 40.0%	7 46.7%	4.33 (0.72)
Online web conference discussions were valuable in helping me appreciate different perspectives.	15			2 13.3%	8 53.3%	5 33.3%	4.20 (0.68)
Combining new information helped me answer questions raised in course activities.	14		1 6.7%	2 13.3%	6 40.0%	5 33.3%	4.07 (0.92)
Learning activities helped me construct explanations/solutions	15			3 20.0%	7 46.7%	5 33.3%	4.13 (0.74)
Reflection on course content and web conference discussions helped me understand fundamental concepts in this class.	15			3 20.0%	5 33.3%	7 46.7%	4.27 (0.80)
I can describe ways to test and apply the knowledge created in this course.	15		1 6.7%	4 26.7%	7 46.7%	3 20.0%	3.80 (0.86)
I have developed solutions to course problems that can be applied in practice.	15			7 46.7%	7 46.7%	1 6.7%	3.60 (0.63)
I can apply the knowledge created in this course to my work or other non-class related activities.	15		2 13.3%	6 40.0%	4 26.7%	3 20.0%	3.53 (0.99)

Note. The scale was from 1 (*strongly disagree*) to 3 (*neutral*) to 5 (*strongly agree*).

support my ideas"; and, "We have a great compassion for each other and respect each other. [The instructor] does an extremely good job of drawing out the information that we may have slighted."

The third category comprises comments concerning course workload and time management (n = 2). Examples include, "The challenges were trying to keep up with the topic" and

> [I had] issues with the time frame. I believe if we weren't as rushed through the material that more people would have a better understanding of the material, but the course was still excellent and [the professor] is very knowledgeable.

The fourth category is a student's comment concerning possible improvements to the course (n = 1): "Clearly outline how to get a 10/10 for class participation each day." Apparently, the participation grade rubric left something to be desired in this student's mind.

Discussion

Analysis

These data suggest that the instructor succeeded in designing an online history course that created a community of learners engaged in frequent and relevant interactions and that provided participants with opportunities to work collaboratively to make meaning of course content and to develop their critical thinking skills. The mean for the CoI survey showed that most students agreed or strongly agreed that there was a community of inquiry for the course, M = 4.07. Students rated TP as the strongest subscale for the CoI survey, M = 4.14. The instructor made intentional design decisions aimed at making large- and small-group discussions as effective as possible by implementing a mandatory attendance policy, requiring completion of quizzes prior to class meetings, giving students focus questions well in advance of class meetings and making participation a significant percentage of the final grade. Students acknowledged the role that the instructor played in developing a strong sense of community by agreeing that the instructor was helpful in guiding the class toward understanding the topics (93.3%), that the instructor helped to focus discussions (86.6%), that the instructor helped keep them on task (86.7%), that the instructor helped build a sense of community (80%), and that the instructor was helpful in identifying areas of agreement and disagreement on course topics (80%).

The CoI subscale that students rated second highest was SP, M = 4.10. Students acknowledged their perceived value of using web conferencing by agreeing that they felt comfortable conversing and otherwise participating during the daily meetings (86.7%), and that they felt that online or web-based communication is an excellent medium for social interaction (80%). The students also felt that the discussions enabled them to build strong relationships among course participants by agreeing that they felt comfortable interacting with their peers (80%), and that their point of view was acknowledged by other course participants (80%).

While CP was ranked the lowest of the three CoI subscales, students also gave it a high rating, M = 3.97. The instructor included small group discussions to allow students to work together to make meaning of course content. Students acknowledged the efficacy of the small group discussions by agreeing that brainstorming and finding relevant information helped them answer content-related questions (86.7%), that synchronous online discussions were valuable in helping them appreciate different perspectives (86.6%), that reflection on course content and web conference discussions helped them understand fundamental concepts (80%), and that the learning activities helped them construct explanations and solutions (80%). Responses to the open-ended prompts also suggest that students found the instructor effective and believed that the course design made it possible for them to work collaboratively.

In traditional lecture halls it is often challenging to have meaningful, broad student participation during class meetings due to the large number of students in the room. Web conferencing technology allowed the instructor to quickly get feedback from students by asking them to use tools such as emoticons, text-chat, and polling. Another benefit of the online class was the ability to quickly send students to their breakout rooms, as well as the ability to move easily from room to room to monitor students' progress. This is a real challenge in a face-to-face environment since having students move from fixed theater-style seating often presents logistical challenges. While the current online class numbers were small (n = 19), the web conferencing tools would scale equally well for large enrollments that mirror those of the face-to-face sections.

Study Limitations and Future Research

The online history course under investigation demonstrates that it is possible to design online classes that have high levels of community of inquiry as a result of students working collaboratively to make meaning of course content. Since there were only 19 students enrolled in this course, the results of this study cannot be generalized to all online teaching environments.

This research study was conducted in an online class that utilized web conferencing. Research can be

conducted in other online classes with a similar course design to see whether the results can be replicated. The instructor also plans to redesign his face-to-face class to achieve the same goals and plans to use clickers and small-group discussion to encourage participants to develop a community of inquiry working together to make sense of course materials and develop critical thinking skills. It would be interesting to compare the results of this study to others conducted on similar courses offered in face-to-face learning environments.

This was one of the first synchronous online courses offered to undergraduate history students at the university, and the large number of students that dropped the class suggests that some students may not be adequately prepared to participate in such courses. In the future, the instructor plans to follow up with students who withdraw from the course to get a better sense of their reasons for doing so.

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Appendix
Community of Inquiry Survey

Arbaugh et al. (2008) developed the 34-item Community of Inquiry (CoI) Survey to measure the level of community with sub measures for instructor presence, social presence, and cognitive presence. Five items that were slightly modified in the present study to be worded properly for the students that accessed their communications using web conferencing (Questions 17, 18, 22, 28, and 31).

5-point Likert-type scale:
1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*

Teaching Presence

1. The instructor clearly communicated important course topics.
2. . The instructor clearly communicated important course goals.
3. The instructor provided clear instructions on how to participate in course learning activities.
4. The instructor clearly communicated important due dates/time frames for learning activities.
5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.
7. The instructor helped to keep course participants engaged and participating in productive dialogue.
8. The instructor helped keep the course participants on task in a way that helped me to learn.
9. The instructor encouraged course participants to explore new concepts in this course.
10. Instructor actions reinforced the development of a sense of community among course participants.
11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
12. The instructor provided feedback that helped me understand my strengths and weaknesses.
13. The instructor provided feedback in a timely fashion.

Social Presence

14. Getting to know other course participants gave me a sense of belonging in the course.
15. I was able to form distinct impressions of some course participants.
16. Online or web-based communication is an excellent medium for social interaction.
17. I felt comfortable conversing through the online medium.
    WC: I felt comfortable conversing through web conferencing.
18. I felt comfortable participating in the course discussions.
    WC: I felt comfortable participating in the course web conference discussions.
19. I felt comfortable interacting with other course participants.
20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
21. I felt that my point of view was acknowledged by other course participants.
22. Online discussions help me to develop a sense of collaboration.
    WC: Online web conference discussions help me to develop a sense of collaboration.

Cognitive Presence

23. Problems posed increased my interest in course issues.
24. Course activities piqued my curiosity.
25. I felt motivated to explore content related questions.
26. I utilized a variety of information sources to explore problems posed in this course.
27. Brainstorming and finding relevant information helped me resolve content related questions.
28. Online discussions were valuable in helping me appreciate different perspectives.
    WC: Online web conference discussions were valuable in helping me appreciate different perspectives.
29. Combining new information helped me answer questions raised in course activities.
30. Learning activities helped me construct explanations/solutions.
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.
    WC: Reflection on course content and web conference discussions helped me understand fundamental concepts in this class.

32. I can describe ways to test and apply the knowledge created in this course.
33. I have developed solutions to course problems that can be applied in practice.
34. I can apply the knowledge created in this course to my work or other non-class related activities.

Open-Ended Questions

35. Please comment of the success of this class being designed as a group of individuals that have worked together to help develop a deeper understanding of the content of this course.
36. Please comment on the challenges of this class being designed as a group of individuals that have worked together to help develop a deeper understanding of the content of this course.
37. Please make any suggestions that would improve this class being designed as a group of individuals that work together to help develop a deeper understanding of the content of this course.

*See http://communityofinquiry.com/methodology for more information on the Community of Inquiry Scale.