Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences

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A B S T R A C T

This qualitative research study was designed to inform the development and implementation of effective online learning environments by exploring, from both teacher and student perspectives, what constitute effective online learning experiences. The study examined course content, tasks, and pedagogical approaches, as identified by students and instructors, which contributed to or hindered positive online learning experiences. Researchers interviewed 6 online course instructors and 10 adult students to understand their experiences in undergraduate and graduate level online degree programs. Using a Cognitive Apprenticeship Model to inform the analysis of data, findings revealed an emphasis on text-based content and lecture; instruction that led to disconnect between students, teachers, and course content and goals; and one innovative program that links real-world experiences with online classroom learning. Given the growing number of online programs, the study provides insight for course development and pedagogy as well as offers possibilities for additional research.

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1. Introduction

Recently there has been an explosive growth in online distance learning that is “rapidly transforming post-secondary education” (Moller, Foshay, & Huett, 2008, p. 66). According to Desai, Hart, and Richards (2009), this tremendous growth “can be attributed, in part, to shrinking budgets and lower local student enrollments at universities” (p. 328). Distance education via the Internet can provide colleges and universities with a low-cost, flexible option to expand into global markets (Casey, 2008). However, as colleges and universities expand their offerings of online courses, educators can enhance instruction if they are aware of current research on distance education. Numerous studies have shown that teaching online requires a different pedagogy and unique set of skills from that of the traditional classroom (Fetherston, 2001; Hardy & Bower, 2004; LaMonica, 2001; Oliver, 2002). Nevertheless, most development work in distance education is currently being done “by faculty with no formal training in teaching of any kind, not to mention training in ID [instructional design] or any of the related e-learning fields” (Moller et al., 2008, p. 67). Researchers argue that educators in the distance medium “are faced with new pedagogical issues surrounding student interactions, course content design and delivery, multiple levels of communication, defining new types of assignments and performance expectations, and different assessment and evaluation techniques (to name a few)” (Moller et al., 2008, p. 67). In general, we are seeing a “systemic lack of awareness” in appropriate uses of technology in the field of education (Desai, Hart, & Richards, 2009, p. 329). In order to inform the development and implementation of effective online learning environments, this study was designed to explore both instructors’ and students’ online learning experiences while enrolled in various online courses. The study investigated what appeared to both support and hinder participants’ online teaching and learning experiences.

2. Theoretical framework

Current research indicates developing and teaching online courses necessitates adaptations in teaching practices (Desai et al., 2009; Fetherston, 2001; Koehler & Mishra, 2009). Researchers argue that the use of technology in education increasingly demands a shift from a teaching to a learning paradigm (Hardy & Bower, 2004; O’Banion, 1997; Smolin & Lawless, 2003). This shift requires online instructors to take on roles such as mentors, coordinators, and facilitators of learning rather than conveyors of information (Hardy & Bower, 2004; Smolin & Lawless, 2003). It is now more important than ever for online instructors to provide students with experiences that challenge their higher-order cognitive skills “as opposed to simply transferring content to them” (Gillespie, 1998)” (Hardy & Bower, 2004, p. 48). A shift in roles such as this is a challenge for many faculty, especially those who typically rely on lectures to engage and instruct students (Desai et al., 2009).

According to Hill, Song, and West (2009), one of the major complaints about computer-mediated communication in general is the
lack of social cues. When cues are filtered out, communication becomes more “task oriented, cold and less personal than face-to-face communication” (Walther, Anderson, & Park, 1994, p. 461). For distance education to be successful, Desai et al. (2009) argued, “… high levels of interaction typically need to be present for learners to have a positive attitude and greater satisfaction” (p. 328). They claimed in order for any e-learning program to be successful, “it has to emulate an instructor’s guidance and interaction” (p. 332). The researchers believed this type of guidance and interaction plays a “huge role in establishing a sense of community over the web for the learner given there is no physical setting” (p. 332).

To explore individual’s experiences in online courses, this study draws upon a social constructionist perspective. We, the researchers, acknowledge learning occurs through a nonlinear movement between public, private, individual, and social dimensions (Gavelek & Raphael, 1996; Harré, 1984). We also recognize, through the social constructionist perspective, that the acquisition and use of higher psychological processes “have their origins in individuals’ interactions with others” (Gavelek & Raphael, 1996, p.183). Learning occurs while individuals interact “with more knowledgeable members of a community within specific social, cultural, and historical contexts” (Kong & Pearson, 2002, p. 2). We acknowledge that learning is “dialectic and interactive” in nature where “meaning construction highlights the importance of participation, which becomes the goal as well as the means of learning” (Kong & Pearson, 2002, p. 2).

To further explore the various components that make up an effective online learning community, we also turned to the Cognitive Apprenticeship Model (CAM). The CAM is grounded in the belief that students who learn in an academic environment do not usually have access “to the cognitive problem solving processes of instructors as a basis for learning through observation and mimicry” (Collins, 2006, p. 48). Because of this, before apprenticeship methods can be applied by students to learn cognitive skills, the learning environment “has to be changed to make these internal thought processes externally visible” (p. 48). The CAM is therefore designed so cognitive processes can be brought into the open where individuals can “observe, enact, and practice them” (p. 48). The CAM is a design framework that “holds relevance for both modeling the effective use of technology for pre-service P-12 teacher education students and as a method for the design of a Web-based learning environment” (Dickey, 2008, p. 507). A number of researchers have explored the integration of technology using cognitive apprenticeship methods (Boling and Beatty, 2010; Hendricks, 2001; Liu & Hisao, 2002; Pahl, 2002; Schrader et al., 2003); however, few have explicitly investigated the use of cognitive apprenticeship methods in Web-based environments (Dickey, 2008).

According to the CAM model, there are four dimensions that constitute any learning environment. These dimensions include content, method, sequencing, and sociology. Content identifies the types of knowledge that are required for expertise, including subject matter knowledge, knowledge of learning strategies, and knowledge of how to direct one’s own learning. Method refers to the teaching methods associated with the cognitive apprenticeship and includes modeling, coaching, and scaffolding. Collins (2006) differentiates these methods, stating that modeling occurs when a teacher “performs a task so students can observe” (p. 50). During coaching, a teacher “observes and facilitates while students perform a task,” and scaffolding involves a teacher providing “supports to help the student perform a task” (p. 50). Method can also be expanded to encompass actions that encourage learner autonomy and problem solving. Method can also be expanded to encompass actions that encourage learner autonomy and problem solving. Sequencing covers the ordering of learning activities and illustrates how tasks can increase in both complexity and diversity. Sequencing can describe how learners conceptualize tasks and move from global to local skills (Collins, 2006). Finally, the sociology of learning, as defined by Collins (2006), highlights various social characteristics of learning environments. These include how students learn “in the context of working on realistic tasks,” set personal goals, work together to accomplish these goals, and communicate with one another about “ways to accomplish meaningful tasks” (Collins, 2006, p. 50).

3. Methodology

The research team, which consisted of one university professor and four research assistants, used a descriptive, qualitative, case study approach to identify what supported and hindered participants’ online teaching and learning experiences. According to Thomas (2011),

Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame – an object – within which the study is conducted and which the case illuminates and explicates. (p. 513)

We chose to explore a case of individual’s online teaching and learning experiences, and we wanted to understand these experiences from the perspective of both teachers and students. Using what George and Bennett (2005) describe as a disciplined configurative case study approach, we used established theories to help explain and interpret our study. Qualitative methods, as described by Strauss and Corbin (1998), are used “to obtain the intricate details about phenomena” that are “difficult to extract or learn about through more conventional research methods” (p. 11).

To begin our search for participants, we sought out individuals who had completed online degree programs or who had participated in a number of online courses. We felt that we could benefit and learn from an individual regardless of whether they participated in online business, education, or engineering programs. We began by using a convenience sample, brainstorming a variety of online programs that we knew existed and considering where we would most likely find individuals who would agree to participate in the study. Because this study was part of a larger design based research project that would ultimately result in the creation of three new online programs, we also had a timeline to follow and could not spend an extended amount of time trying to find participants for the study. To obtain a rich understanding of what supports and hinders students’ online learning experiences, we wanted to involve participants who represented a variety of programs and perspectives. We also wanted to understand teaching and learning from instructors’ perspectives to help inform what was learned from students. To ensure that we had access to various perspectives, we made a point to select participants coming from different types of programs, including those offered through public universities as well as for-profit and not-for-profit online universities. To increase our chances of learning about online experiences that were identified as being effective, we also made sure to include individuals coming from an award winning, nationally recognized online graduate program in higher education. In the end, fifteen individuals were invited in person and through email messages to participate in the study, and all gave consent.

Ten adult students who had completed online degree or certificate programs in different fields of study and six online course instructors participated in the study. There was one participant who had participated as a student in an online program and who was also an instructor of online courses, and so she was interviewed to inform both the instructor and student perspective. One instructor was also the creator and coordinator of the award winning graduate program in higher education. In the end, fifteen different individuals participated in the study. Participants were involved in programs that represented various fields of study, including higher education, nursing, interior
design, science education, and business. For a more detailed overview of each participant and the program that he or she represented, please see Appendix A (student participants) and Appendix B (instructor participants). Each participant agreed to participate in one 60-minute interview. Prior to participating in these interviews, however, they were asked to share relevant course materials with the researchers who interviewed them. These materials included such artifacts as course syllabi, assignment descriptions, and screen shots taken from their online course management systems. Materials were used to learn more about the content and approach of the programs and to see if they supported or contradicted what participants reported. During interviews, participants described their online course experiences and the kinds of course content, tasks, and pedagogical approaches they felt were the most educational, most meaningful, and most productive for their or their students’ learning. Participants also described aspects of their online courses and programs that they believed were less informative, helpful, and/or educational.

Both deductive and inductive analyses were conducted using constant comparative methods (Glaser & Strauss, 1965). To reach a consensus on deductive coding related to the Cognitive Apprenticeship Model, the researchers each coded the same interview transcript using the categories “content,” “method,” “sequencing,” and “sociology,” as described by Collins (2006). They then noted other recurring themes that appeared in the transcript. Appendix C provides examples of the various coding categories that were used for the study. Upon meeting, researchers compared coded data, and differences were discussed until total agreement and consensus were achieved for each category. The research team then coded the remaining interview transcripts, posting their coded text onto an online wiki so that the entire team could review the coded documents and ask questions. As new coding categories inductively emerged, they were added to a list of categories and discussed. After repeated examples of these newly emerging categories were identified across more than one interview, the researchers revisited and recoded all interview transcripts keeping these new categories in mind. Some of the new categories that emerged included the following: conflict/frustrations, teacher/student training, and disconnect. Once all categories were finalized, data were uploaded into NVivo, a qualitative software program, and coded by each member of the research team. Final coded texts were exported into various Microsoft Word files so that each team member could revisit each category to establish that proper protocol was followed during the coding process. Course artifacts were used to triangulate findings, seeing if what was learned through participant interviews supported or contradicted what was reflected in each artifact.

4. Findings

Our findings revealed most participants viewed courses that emphasized text-based content, individualized learning, and limited interaction with others as being less helpful than those courses and programs that were more interactive and incorporated the use of multimedia. In courses that offered little to no interaction with others, students reported feeling disconnected with their instructors, the course content, and their fellow classmates. The majority of participants’ online experiences reflected experiences that fit this model. However, one program proved to be the exception by offering students and instructors unique opportunities to interact with one another while linking students’ real-world experiences to online coursework. In the following sections, we describe the more individualized, text-based online learning experiences that were found to exist for the majority of the participants. Using these examples, we illustrate how students’ involvement with online courses did not provide them with the most positive or helpful online learning experiences. We then draw attention to participants’ experiences in the online graduate program in higher education, a more dynamic program that supported interactive online learning communities. We spend time describing this program in more detail so that we can illustrate how its various components, based on the CAM, made learning more interactive, meaningful, and relevant to students’ lives. In order to protect the privacy of our participants, pseudonyms have been used in place of real names throughout the following sections and Appendices.

4.1. Hindering through text-based, individualized learning

The majority of the courses and programs described by participants emphasized text-based content and lecture, limited student interaction with others, and provided little variation in the modes of instruction used online. Participants in these courses explained how their online experiences consisted of text-based lecture and completing many reading and writing assignments. Many of these assignments limited students’ ability to develop higher order cognitive skills and creative thinking. For example, one student, John, stated, “Most of our topics are generically produced as part of the course curriculum, and so it is usually very simplistic in what is being asked or what is being given information-wise...” Another student, Pamela, commented that her course consisted of “just reading and reading and reading ‘til it fell out my ears, and then you had to regurgitate it back in a cogent way.” Dr. Rhodes, an online instructor, also recognized these challenges and struggled with how quickly his course became heavily text-based. He admitted, “Once I went to online format, I had way too much reading, way too much reading. Because it was so easy to put stuff in there...” Dr. Rhodes described how he learned over time to be more realistic in terms of the amount of readings he assigned.

When interpreting these findings using a CAM lens, one recognizes that content, or “domain knowledge,” is necessary for learning; however, formats of lecture and text-reading alone are “not sufficient for expert performance” (Collins, 2006). These methods do not give students adequate “clues about how to solve problems and accomplish tasks in a domain” (Collins, 2006, p. 49). Luke (2003) described how traditional teaching styles of the industrial era stress the learning of facts, subject-oriented material, and knowledge over any other learning process. These types of interactions subscribe to low-level thinking, limit real world application, and inhibit problem solving. Our interviews revealed that participants also believed teacher-centered, text-based methods were often ineffective. When describing her course assignments, Pamela, a middle school teacher, reported, “I didn’t feel like I retained it. I just felt like I was regurgitating it. It didn’t feel like I was applying anything.” Those participants who were exposed to courses that were heavily text-based and offered little student-to-student and student-to-teacher interaction expressed less satisfaction with their online learning experiences than those who were enrolled in more interactive courses that incorporated the use of various types of multimedia.

When describing the four dimensions that constitute any learning environment, Collins (2006) explained how teaching methods that “emphasize apprenticeship give students the opportunity to observe, engage in, and invent or discover expert strategies in context” (p. 50). Such methods include teacher modeling, coaching of students, and guiding students through exploration and problem solving. Viewing teaching and learning through a CAM lens supports students’ views that simply “regurgitating” information is not the most effective way to teach or learn. Moving beyond text-based instruction also proves to be important. Hsin-Liang and Williams (2009) assert the appropriate use of “multi-modal objects” in an online format is important for both course-content development and student learning. They define “multi-modal” in their study as both visual and auditory modes such as text, graphics, audio, and video. The researchers explained, “Understanding how students’ attitudes and habits change
once engaged in instruction with such technologies can help to elucidate how these learning objects may be employed effectively at all levels” (p.5).

Considering the plethora of Web 2.0 interactive tools that currently exist, one might wonder why instructors weren’t taking advantage of their use. Based on the interviews of the instructors in this study, it is possible some of these technologies were not used because instructors did not know how to use them, or they simply chose not to use them based on their own instructional beliefs. For example, one instructor, Dr. Easley, described her own timorous attitude as “traditional and conservative.” She said she was excited by the educational possibilities of webcasts but was reluctant to use the technology. When detailing her own uses of technology in the classroom, she explained she did not incorporate such tools into her teaching. She stated that she believed people needed to remind themselves that educators are also learners who go through “waves of development and stages of growth with regard to technology.” She explained, “So that’s where I saw myself, level one...Then level two would be how do I take technology and really exploit it as a way of fostering engagement. Because that’s my goal: more student engagement.” It’s interesting to note that even though this instructor recognized the need to integrate technology in more interactive ways, she described herself as being at “level one,” where her own attitudes toward technology integration were still “traditional and conservative.”

4.2. Hindering through disconnections

A second common theme we noted in the data was one of disconnection: disconnect between students and their instructors, students and other students, and online instructors and other faculty. When participants experienced this sense of disconnect, they described their online experiences as being less enjoyable, less helpful, and more frustrating than those individuals who made more personal connections and interactions through their courses.

4.2.1. Disconnect between students and instructors

Students participating in the study defined a “good” instructor as someone who is “accessible,” “flexible,” and provides individualized feedback. For online students, accessibility to instructors and information was fundamental and seemed to determine their overall impressions of their online programs. The ability to access an instructor largely depended on the overall design of the program, meaning the opportunities and avenues that were provided for students to communicate. For students, connecting to their instructors was difficult; therefore, some made use of an academic advisory service or a favorite instructor to help guide them through their programs. From the instructors’ perspective, accessibility seemed to be a core component of their pedagogy, and some made themselves available through email, web-forums, and even telephone.

Students indicated that they preferred an online program to a face-to-face program because of the flexibility and convenience it offered; as one student, Shay, aptly put it, “I really was looking for a certain kind of program which allowed me to study at my own time, rather than sticking with others’ time.” However, some instructors required students to participate in synchronous online classrooms using Wimba, a web-based live classroom where students can interact by talking, listening, writing, and drawing, and Second Life, an online digital alternative world in which users create avatars and interact with one another. While some instructors utilizing these tools did try to accommodate for different schedules by offering multiple meeting times, some students found it to be an overall frustrating and inconvenient experience because of technological problems and sometimes not knowing to whom they were speaking in these environments.

In addition to accessibility and flexibility, providing individualized feedback also seemed to be an important component for building a strong student–instructor connection based on student feedback. Despite this, most of the programs seemed to disregard this component and adopted a more hands-off policy where, according to one individual, students were left to “read and figure [things] out on their own.” Students did not like it when they received little to no feedback from their instructors or when they had to go out of their way to contact instructors requesting feedback that they had not received. When providing feedback, we found that the majority of the instructors tended to rely on conventional communication strategies like writing on papers using margin notes and sending emails to students.

4.2.2. Disconnect between students and students

Based on participants’ experiences, creating a cohesive online community is a vital component of all online programs. Building a community of learners where students cooperate and learn together can become a “powerful motivator and a powerful mechanism” for extending learning (Collins et al., 1987, p. 22). For some individuals, however, the idea of how one can “bring the campus to the students” proved to be a real challenge. Students who participated in the study revealed that belonging to a community was important to them. As one student, Shay, stated, “I really wanted to feel a connection. I really wanted to feel like I was part of the school even though I was taking the classes online. I really, really wanted to feel like I was a [university] student and not just somebody sitting in her home somewhere.”

To foster a sense of belonging, programs used a variety of strategies such as live classrooms, group work, threaded discussions, co-ops, and project-based learning. However, many of these programs did not take into account how an online community is successfully formed and maintained, and as a result, based on students’ comments, most courses were too teacher-driven and inauthentic. As one student, Pamela, described, “There was an online chat room called a café where there was a topic of interest...[but it was] teacher-driven [and] your grade would be knocked down if you didn’t participate.” A number of students resented forced group work and felt that the grouping was inflexible and the workload unequally shared. For example, one student, Marjorie, stated, “I don’t like CLCs [collaborative learning communities]...there have been instances where I had taken upon myself to complete everything because the group was not giving me anything back, and I wanted my grades.” Another student, John, describing group work stated, “There was no real relationship there, so unless you felt really invested in the project, everyone just fulfilled their part...there was no real connection.” Upon first appearance, these strategies seem to have been created to prompt collaboration among group members. Based on students’ comments, however, they frequently did not result in building cohesive communities and did not encourage academic growth. Instead, students described increased feelings of isolation and disconnection among each other.

4.2.3. Disconnect between instructors and other faculty

Interviews with instructors also revealed evidence of disconnection among faculty members. Faculty training and support, though less-acknowledged, can serve as an important component in creating a sense of connection in an online program. When faculty are encouraged to work together, they can share ideas, study new technologies, and build off each other’s courses. Despite these advantages, the programs and courses described in this study appeared to make little effort to encourage faculty networking. One instructor, Dr. Stevenson, suggested, “Maybe every week having a support network to draw on...having a guide there with you, a person, who you could bounce ideas off, would be real helpful.” Perhaps contributing to this lack of collaboration is the fact that many of the instructors were adjunct faculty or not full-time staff. While this could be seen as a benefit of online learning as it creates a wider pool of experts, some students stated that they believed the quality of instruction in courses that were taught by adjunct faculty was poorer than those courses that
were taught by full-time faculty. It appeared that some programs did not provide ample support to faculty members who were teaching online, and there is the possibility that some instructors struggled because clear, designated ways to work together were not provided.

4.3. Enhancing through social interactions and real-world experiences

Although the majority of participants described online programs that emphasized text-based content, limited student interactions, and disconnect between individuals, there were a few instances where instruction veered from more conventional “read, write, and lecture” pedagogy. Some examples occurred when instructors in these courses required students to post comments on online discussion boards. Other examples were presented when one instructor and two students described their online Masters’ program in Higher Education, a program that proved to be unique in the strategies that were used to promote social interaction, community development, and meaningful, real-world activities. We found using a cognitive apprenticeship lens to analyze this program helped us obtain a better understanding of how online programs and courses might contribute to positive, online learning experiences.

4.3.1. The program

The online masters program in higher education received the United States Distance Learning Association (USDLA) Best Practice Award. The USDLA International Awards program honors “outstanding individuals and organizations for excellence in the field of distance learning, education and training” (USDLA, 2010, para. 1). The awards were created to “acknowledge major accomplishments in distance learning and to highlight those distance learning instructors, programs, and professionals who have achieved and demonstrated extraordinary results through the use of online, videoconferencing, satellite and blended learning delivery technologies (USDLA, 2010, para. 7). This program appeared to be quite different from the others by the ways that it promoted social interaction, community development, and meaningful, real-world activities.

When asked to describe the program in Higher Education, the one that she had designed, Dr. Cathy Brown explained how the idea behind its creation was to determine “the skills that are needed to get a position in higher education, whether it be entry all the way up to senior administrative.” She and the other stakeholders behind the creation of the program worked together to determine the different specializations from which students could choose, such as enrollment management, student affairs, and financial aid. Dr. Brown explained how using a backward design model based on desired learning outcomes, they turned to professionals in the field to assist in determining the subject matter and skill sets students needed in order to be prepared for real-life work situations that are typical of administrative positions in higher education. Dr. Brown described how together they looked at all these different venues and asked themselves, “To get hired, what were the skills? What were the core competencies they [the students] would have to have?”

4.3.2. Program content

Course content within the program was based not only on domain knowledge but also on heuristic tasks that reflected real-life work responsibilities, enabling students to gain feedback from professionals who are active in the field of higher education. For example, Dr. Brown explained how one activity in a statistics course included obtaining instruction from a professor, creating a spreadsheet, and then performing a “real-world” task using ANOVA. Students performed this task in Wimba, a virtual classroom environment that contains features that include audio, video, and content sharing capabilities. During instruction, an outside expert was present, along with the instructor, to provide students with additional advice and support. In this way, students were “apprenticed” via the course content and design, ensuring they could apply such knowledge in realistic workplace situations. The program also culminated with a co-op experience so students could apply what they had learned in the workplace and also have the opportunity to be mentored by professionals in the field. The content of the program was updated and reviewed by current administrators every nine months to ensure that it was relevant and current. Students and faculty were also surveyed so program administrators were able to adjust their program to best meet the changing needs of both their students and staff. This content and design of the program reflect an important aspect of the CAM framework that includes teaching “knowledge and skills in contexts that reflect the way the knowledge will be useful in real life” (Parscal & Henckmann, 2008, p. 2). Two individuals who were interviewed and who had recently graduated from the program felt they learned much relevant, real-world information from it. When describing her overall experience in the program, Emilia, a program graduate, stated, “I feel like it really pushed me, it pushed my brain, it pushed my critical thinking skills, it pushed my writing skills.”

4.3.3. Program sequencing

The sequencing of the program consisted of a total of 14 courses: 6 core courses, 4 primary concentration courses, 3 electives courses or secondary concentration courses, and 1 capstone “Co-op” course. The culminating co-op experience lasted 20 weeks and was structured to provide students with real-life, hands-on experience in higher education. Courses ran for 10 weeks in the fall, winter, spring and summer, meeting on a Wednesday-to-Wednesday schedule so that students could maximize the weekend after receiving instruction. Courses were sequenced so that the content and skills developed in each course built upon one other. During this capstone experience, students were expected to work in administrative offices and incorporate the skills and tools that they acquired. This structure of courses and learning opportunities within the program, all leading to the culminating co-op experience, reflect some of the CAM’s principles that guide the sequencing of learning activities. These include increasing complexity in tasks where “more and more of the skills and concepts necessary for expert performance are required” and increasing the diversity of tasks where a “wider and wider variety of strategies or skills are required” (Collins, 2006, p. 52).

In order to support students who had been out of school for an extensive amount of time, the program offered online class sessions that taught students where to go and whom to contact for ongoing support and assistance. This included introducing them by the second week in the program to university librarians, technology support staff, and individuals who worked in the university’s career development center. Courses followed a structure where instructors provided training, engaged students in learning simulations, and then emphasized career placement, advancement, or transition. Dr. Brown stressed the importance of training instructors to sequence course content and learning objectives. She stated,

You want to layer your content so students are introduced, they apply what they are learning, they gain confidence, and you want to make the assignments as real as practical as possible because this is where students are being trained for what they are really going to be using immediately at work...and you want the student to be able to look at what the final outcomes are and to really be able to self-evaluate and reflect and identify how they have been able to take all of those outcomes and apply it in the classroom as well as in the professional setting.

Dr. Brown felt that the professional development opportunities available to faculty were also paramount to ensuring that course content was current and sequenced effectively so that the technology utilized for course instruction was maximized for student engagement and learning. Faculty members were required to attend a professional
development session in the fall of every year and to attend at least one of the other training sessions offered throughout the year.

4.3.4. Methods of instruction

Various methods of instruction were utilized to help students acclimate to the online environment, to promote socialization, and to maximize educational experiences and student learning. When describing the four dimensions that constitute any learning environment, Collins (2006) explained how teaching methods that “emphasize apprenticeship give students the opportunity to observe, engage in, and invent or discover expert strategies in context” (p. 50). Such methods include teacher modeling, coaching of students, and guiding students through exploration and problem solving. Viewing teaching and learning through a CAM lens supports students' views that simply “regurgitating” information is not the most effective way to teach or learn. Moving beyond text-based instruction also proves to be important. Hsin-Liang and Williams (2009) assert the appropriate use of “multi-modal objects” in an online format is important for both course-content development and student learning.

In this program, instructors were able to engage students in dynamic, interactive learning environments by using multi-modal interface tools such as Wimba. Dr. Brown, who was also an instructor in the program, explained that Wimba’s interface allowed instructors to scaffold learning, mentor students, and easily carry out interactive group conversations and presentations. Wimba allowed instructors to create these learning opportunities, record interactive classes, and then archive them online. Dr. Brown felt the voice capabilities of Wimba were especially useful to allow students to connect to their instructors, peers, and other university staff in a more personal way. It also provided instructors with a way to record their comments, correspond with students, and put them more at ease by adding a “personal touch” to the feedback that was provided on their work. Additionally, students used the same tools to record and share their thoughts and reflections about their own learning with their instructors. Such communications and sharing of ideas support the CAM principles of reflection and articulation, where teachers encourage their students “to verbalize their knowledge and thinking” (Collins, 2006, p. 50). Finally, through the use of online simulations, interactions with guest speakers, and a co-op experience, the program provided students with opportunities to “verbalize their knowledge and thinking,” “guest speakers and, a co-op experience, the program program provided students with opportunities to “verbalize their knowledge and thinking,” “pose and solve their own problems” (Collins, 2006, p. 50). At the same time while using Wimba to engage with experts in their field and to share projects with one another, instructors were able to observe and facilitate student learning while providing scaffolding and support as various tasks were completed. All of these methods of interaction, according to the CAM, can be effective methods of instruction that provide “ways to promote the development of expertise” (Collins, 2006, p. 50).

4.3.5. Social characteristics of the learning environment

Dr. Brown explained that one of her goals for the program was to give the online experience “a more human feel,” something that she felt was lacking in many online programs offered in the past, and which she felt contributed greatly to attrition problems. Building a community of learners where students cooperate and learn together can become a “powerful motivator and a powerful mechanism” for extending learning (Collins et al., 1987, p. 22). To create a positive social experience, Dr. Brown explained that students entered the program as a cohort, participated in online social events, and engaged in online simulations and a co-op experience, allowing them to interact with others and engage in authentic learning experiences. Emilia, a graduate from the program, explained how these activities enabled her to interact with many people in higher education, allowing her to learn more about the field. Both students described how instructors added a more “human touch” to the program by recording voice comments on their papers, creating assignments that facilitated interaction with other professionals in higher education, and using audio-recorded weekly wrap-ups to highlight “key learning points.” Emilia and Shay also explained how technological tools such as Wimba fostered and mediated social, online experiences. Emilia described one online social event, a wine and cheese party, which stood out to her because it was conducted through a live Wimba classroom. She explained, “It was very informal. They wanted you to actually sit and have a glass of wine while you watched it...It was kind of like a social interaction online.”

Dr. Brown also stressed that by using tools like Wimba, instructors were able to create social learning environments that allowed them to model and scaffold student learning, while also supporting students in demonstrating and articulating what they learned. Shay described how using Wimba prompted her to “learn a lot about technology” and to “attend classes online with the professor leading the presentation.” She explained that students also had to do their own presentations within the Wimba virtual environment, and so she learned how to use the program to interact with her instructor, classmates, and guest speakers. She added, “That surprised me. I didn’t know it [Wimba] existed, and I didn’t know I would be able to do that on my own as well.” Dr. Brown enthused, “Wimba is a phenomenal tool. As part of our policy and guidelines...we strongly encourage all faculty to post at least one voice announcement a week, which will typically be a wrap-up. And it is neat for the students because you’ve got the discussion board, but the faculty are able to bring everything together.” Based on participants’ experiences, creating a cohesive online community was a vital component of their online program. According to Collins and the CAM, building a community of learners where students cooperate and learn together can become a “powerful motivator and a powerful mechanism” for extending learning (Collins et al., 1987, p. 22).

5. Conclusion

Research has shown one of the greatest challenges for learning institutions and instructors when designing and implementing online courses is to “provide a sense of community with constructive feedback and provide open forthcoming communications as well as recognizing membership and feelings of friendship, cohesion, and satisfaction among learners” (Desai et al., 2009, p. 333). Distance educators are currently facing the challenge of how to redefine their communication skills. Studies have shown that “two-way interaction is a critical feature of the educational process” (Desai et al., 2009, p. 328). There is still much to learn, however, about how instructors and course designers can create the most effective, highly interactive, online social learning communities. This study helps illustrate the types of online interactions and instructional practices that can promote positive, online learning experiences. It highlights some of the challenges and potential pitfalls that can arise when individuals are teaching and learning online. It also reveals how the Cognitive Apprenticeship Model can provide a useful lens to analyze and learn from an innovative online program that encouraged meaningful, authentic interactions between students.

Findings revealed when students were asked to describe one or more favorite aspects of their online courses, they pointed to the social exchanges that occurred. These included such activities as texting fellow students and completing real-world assignments that required
them to interact with others in their local communities. When asked about their least favorite activities, they pointed to learning through rote memorization and engaging in group activities where their classmates’ lack of involvement had the potential to negatively impact their own grades. These findings reflect how students who engage in online learning can be strongly affected by their social learning environments, and instructors need to carefully consider how designing such environments can support and/or hinder both student learning and motivation.

Feedback from course participants revealed one of the motivations to participate in a brick and mortar classroom was the intrinsic urge to become part of a community. By “bringing the campus to the students,” the program in Higher Education was able to provide this sense of community to some of its students. By analyzing both students’ and instructors’ experiences in online courses, this study provides detailed information about some of its content, tasks, and pedagogical strategies that contributed to the development of interactive and educational online learning communities. The study also points to aspects of both course design and instructional strategies that hindered the development of interactive and engaging online learning communities. Further research needs to be conducted to determine why some instructors might opt out of using Web 2.0 technologies that promote such interaction, engagement, and multimodal ways of communicating despite their availability. We also recommend that future studies explore how instructors can better support students in using Web 2.0 technologies for educational purposes. In addition, researchers might investigate how universities can better support faculty in acquiring the knowledge, skills, pedagogical strategies, and dispositions that are needed for building more effective, interactive, and multi-modal online learning communities.

Role of the funding source

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Acknowledgments

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Appendix A. Student participants

<table>
<thead>
<tr>
<th>Student</th>
<th>Program</th>
<th>Program format</th>
<th>Program overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marjorie John</td>
<td>Masters Degree in Educational Administration</td>
<td>Online; minimal interaction with instructor; assignments described as being “generic” with postings required on online forums</td>
<td>Designed for individuals interested in educational administration at the k-12 level; courses covered topics such as school leadership, organizational theory, public school finance, and instructional technology; field experience integrated throughout program with an internship required at the end</td>
</tr>
<tr>
<td>Ms. Easley</td>
<td>Masters Degree with Certification in English Education</td>
<td>Hybrid; students posted to online forums and provided feedback to one another on class papers</td>
<td>Designed for intensive study in literature, language, and writing; courses covered topics such as approaches to literature, multicultural literature, writing, literary history, research and theory</td>
</tr>
<tr>
<td>Christy</td>
<td>Bachelors Degree in Humanities with specialization in the Arts</td>
<td>Online with 1 face-to-face course; students read papers and responded to scripted questions posted on the class' online forum; interaction between individuals was minimal</td>
<td>Designed to develop and deepen students’ understanding of the Arts while enhancing their ability to express their own concepts and ideas; students choose courses from various topics which include the performing arts, media arts, graphic arts, and creative writing</td>
</tr>
<tr>
<td>Christine</td>
<td>Certificate Diploma in Interior Design</td>
<td>Online with materials and videos sent through the mail; project-based program; students worked individually on assignments; no interaction occurred between students</td>
<td>Designed to teach students how to combine fabrics, flooring, and furniture for esthetic interiors; program consists of lesson booklets, DVDs, and other resources that cover various aspects of interior design</td>
</tr>
<tr>
<td>Wayne</td>
<td>Masters Degree in Business Administration</td>
<td>Online; students worked in teams on weekly assignments and viewed video-recorded lectures; communication with instructors occurred through email, online, and by telephone</td>
<td>Designed to prepare students in business administration by offering courses in areas such as management, business law, organizational leadership, statistics, and marketing</td>
</tr>
<tr>
<td>Shay</td>
<td>Masters Degree in Higher Education</td>
<td>Online; project-based program using a cohort model; courses required collaboration and interaction between students and with their instructors; emphasis placed on “real world” connections</td>
<td>Designed to prepare students in higher education theory and administration. Students complete core courses in areas such as foundations in higher education, school law and politics, and governance in higher education while having the option to complete a 3-course concentration in related areas</td>
</tr>
<tr>
<td>Pamela</td>
<td>Various Masters and non-credit bearing professional development courses in science education</td>
<td>Online; zero to minimal interaction occurred between students; most courses were self-study and focused on the learning of science concepts; one program allowed students to engage with experts in the field and ask online questions</td>
<td>Programs included an online, graduate level, 6 week course on geology; various credit-bearing and non-credit bearing online courses offered through a national center for science education; various online, non-credit bearing presentations offered through the National Science Teachers Association</td>
</tr>
<tr>
<td>Doug</td>
<td>Bachelors Degree in Political Science with elective courses taken in Education Administration</td>
<td>Online; claimed to follow a “traditional” online model where students read articles and posted reading responses to an online forum; interaction between students was limited to online reading responses</td>
<td>Designed to examine politics in government and among nations while also exploring aspects of politics in private organizations, businesses, families, and daily life; courses explore topics such as world politics, American politics, media and politics, race and politics</td>
</tr>
</tbody>
</table>
### Appendix B. Instructor participants

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Program</th>
<th>Program format</th>
<th>Program overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Jordan</td>
<td>Bachelors and Masters Degrees in Education Administration</td>
<td>Online; claimed to follow a “traditional” online model where students read articles and posted reading responses to an online forum; interaction between students was limited to online reading responses</td>
<td>Designed for individuals interested in educational administration at the K-12 level; courses covered topics such as school leadership, organizational theory, public school finance, and instructional technology; field experience integrated throughout program with an internship required at the end</td>
</tr>
<tr>
<td>Ms. Easley</td>
<td>Associate Degree in Liberal Arts with emphasis in English Composition</td>
<td>Hybrid; students posted to online forums and provided feedback to one another on class papers</td>
<td>Designed to prepare individuals in the field of library and information science; courses organized around topics in the field which include information access, information systems, management, and information and society</td>
</tr>
<tr>
<td>Dr. Stevenson</td>
<td>Masters Degree in Library Science</td>
<td>Both online and hybrid programs available; students engaged in online forums posting responses to readings and to one another; online “lectures” were made available through PowerPoint presentations</td>
<td>Designed to prepare students in higher education theory and administration; using a cohort model, students complete core courses in areas such as foundations in higher education, school law and politics, and governance in higher education while having the option to complete a 3-course concentration in related areas</td>
</tr>
<tr>
<td>Dr. Brown</td>
<td>Masters Degree in Higher Education</td>
<td>Online; project-based program using a cohort model; courses required collaboration and interaction among students and between students and instructors; emphasis placed on “real world” connections</td>
<td>Designed to introduce students to four broad areas of study including human resource strategy, decision making, functional areas, and context areas; program emphasizes strategy and business fundamentals</td>
</tr>
<tr>
<td>Dr. Kraus</td>
<td>Bachelors and Masters Degrees in Nursing</td>
<td>Both online and hybrid programs available; online courses included video streaming module lectures and discussions on readings posted to class discussion forums</td>
<td>Offers both face-to-face and online degree programs; only the masters programs offer online options; master’s programs also have a research option and require students to complete a series of clinical practicum courses</td>
</tr>
<tr>
<td>Dr. Rhodes</td>
<td>Masters Degree in Human Resource Management</td>
<td>Hybrid; courses included both synchronous and asynchronous discussions between students; guest speakers were invited to classes; students shared their projects with one another online; online videos were integrated throughout courses</td>
<td>Designed to introduce students to four broad areas of study including human resource strategy, decision making, functional areas, and context areas; program emphasizes strategy and business fundamentals</td>
</tr>
</tbody>
</table>

### Appendix C. Coding categories

<table>
<thead>
<tr>
<th>Code</th>
<th>Description (Collins, 2006, p. 50)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Types of knowledge required for expertise, including domain knowledge (subject matter specific concepts, facts, and procedures), heuristic strategies (techniques for accomplishing tasks), control strategies (general approaches for directing one’s solution process), and learning strategies (knowledge about how to learn new concepts, facts, and procedures)</td>
<td>...I mean one of the classes that we even took addressed whether or not you feel that you would ever want to be president of a university... and what it takes, you know, like different leadership, uh, qualities, what makes for a good, um, president, or even what makes for a good director of your department. (Emilia) ... and we learned about the first-year experience, how that’s a big thing for colleges and universities now having a view; create an environment for someone in that first year as a freshman that is very positive more than likely they will return... (Emila) ... so for their assignment, one of the key assignments is, they have to find their next career job upon graduation. Not that they would leave, but if they were to search for one. They have to find the job. They have to write a cover letter. They have to do their bio. They have to do a whole e-portfolio. And then they send it in to our career development center ‘cause we’ve got a partnership with them. The career development center reviews it... (Dr. Brown) Students will graduate with a primary concentration in Higher Education Administration and Organizational Management and an optional secondary three-course concentration in one of the following areas: Enrolment Management; Institutional Research and Planning; Academic Development, Technology and Instruction; Student Development and Affairs; Community College Leadership and Administration; or Institutional Advancement. (written course document)</td>
</tr>
</tbody>
</table>
| Method | Ways to promote the development of expertise, including modeling (teacher performs a task so students can observe), coaching (teacher observes and facilitates while students perform a task), scaffolding (teacher provides supports to help the students perform a task), reflection, exploration, etc. | And then there’s also a live classroom where you, um, present your work in a live classroom. You can upload a Power Point and the Power Point will come up and then you um give like a video presentation over the live classroom. (Emilia) ... we require all of our faculty to pose audio overviews of the week as well as audio put comments or back then it was audio podcasts for certain papers. So it wasn’t just text review comments, some of them were audio podcast review. (Dr. Brown) One of the goals of the program to really develop what we call reflective practitioners. We don’t want people to just go out there and say great idea. We want people to really reflect on what the issue is, what the problem is, what the options are. And so starting in the very first quarter all the way through the end we have what we call key learning points... They have to do what we call voice...
### Appendix C (continued)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description (Collins, 2006, p. 50)</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociology</td>
<td>Social characteristics of learning environments, including situated learning, community of practice, intrinsic motivation, and cooperation</td>
<td>Sociology Social characteristics of learning environments, including situated learning, community of practice, intrinsic motivation, and cooperation</td>
</tr>
<tr>
<td>Sequencing</td>
<td>Keys to ordering learning activities, including increasing complexity, increasing diversity, and moving from global to local skills</td>
<td>Sequencing Keys to ordering learning activities, including increasing complexity, increasing diversity, and moving from global to local skills</td>
</tr>
</tbody>
</table>

### References


