

STEMS², Social Presence and Sense of Place in a Hybrid Distance Education Program

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Abstract: What happens when a program rooted in place-based education (PBE) is delivered via a hybrid model? This paper shares findings from a qualitative case study with the first cohort of students at the University of Hawai'i at Mānoa pursuing a Master of Education in Curriculum Studies with a concentration in STEMS² (O'Neill, Ah Sam, Jumalon, Stuart, Enriquez, in press). The Community of Inquiry Framework developed by Garrison, Anderson and Archer (2000) with focus on Social Presence and sense of place is used to describe how a hybrid model combining face-to-face and online instruction helped the students and instructors connect to the curriculum and each other.

Introduction

Engaging students is a great challenge in any classroom. Online classes amplify these challenges where feelings of isolation and confusion contribute to student drop out (Northcote, 2008; Rovai & Jordan, 2004). Educators turn to hybrid models combining online and face-to-face (FTF) classes to address online instruction's shortcomings, because it enables community building, increasing the quality of student-faculty contact and leading to improved student motivation, persistence and satisfaction (Martyn, 2003). While sense of community is important, attention to sense of place is critical in establishing the sense of identity held by individual students and teachers that promotes active participation and discourages them from checking out (Northcote, 2008).

Recognizing the importance of sense of place to place-based-education (PBE) and hybrid instruction, this paper presents a subset of findings from a larger qualitative case study (Yu, 2016) related to sense of place and Social Presence within Garrison, Anderson and Archer's (2000) Community of Inquiry (CoI) Framework. The participants in the study were enrolled in a 13-month hybrid Master of Education program with a concentration in STEMS² (O'Neill, Ah Sam, Jumalon, Stuart, Enriquez, in press). The STEMS² framework focused on integrating science, technology, engineering and math (STEM) with the social sciences and sense of place (S squared).

STEMS², Sense of Place, and the Community of Inquiry Framework

Sense of place is at the forefront of STEMS². It honors the special character of a place and defines who we are in that place. Gruenewald's (2003) statement that "people make

places and that places make people” (p. 621), is critical to the STEMS² construct that encourages students to solve real-world problems in their communities by drawing on their STEM knowledge in addition to their personal experiences and culture.

This is especially important in Hawai‘i where Hawaiian culture and tradition connects people to the land through its landscape, genealogy, and history (Kana‘iapuni and Malone, 2006). The cultivation of relationships and connections with academic content (science, math, language, social studies, etc.), people, and places in the community is central to the STEMS² students’ work in the program. These connections instill a sense of civic responsibility and encourage students to take action. Smith and Sobel (2010) described Montana educator Umphrey’s (2007) statement that children will be more committed to caring for the community when it is seen as the source of who they are. This is accomplished when they get to know about their community’s members, feel an attachment to its places, and are proud of their roots (Smith & Sobel, 2010).

Thus, students in the STEMS² program spent the first three weeks of the program engaged in a summer learning journey, visiting more than a dozen different places on O‘ahu and Hawai‘i island learning about STEMS² from people committed to building their communities and caring for their places. Classes moved online in the fall and spring with synchronous sessions that met once a week using Blackboard Collaborate with one FTF weekend in the middle of each semester. The program ended with another three-week FTF summer learning journey.

In order to build community in STEMS², it is important that each teacher and student establish their sense of identity because it shapes their sense of place and serves as a prerequisite for sense of community (Northcote, 2008). In citing Brook and Oliver (2003), Northcote (2008), stresses the importance of sense of place in online communities in order to maximize the quality of student learning. Northcote, Garrison, Anderson, and Archer (2000) also recognize sense of place and sense of community as being essential to worthwhile learning experiences, and add that the two cannot be separated from each other.

In their Community of Inquiry (CoI) framework, Garrison, Anderson and Archer (2000), present three key elements that are necessary for a successful hybrid education experience: (a) cognitive presence, (b) social presence, and (c) teaching presence. Within the framework, social presence represents the students’ ability to be themselves in both F2F and online settings, and it ensures an environment of trust, open communication and community (Vaughan, Cleveland-Innes, & Garrison, 2013).

Methods

Attitudes and opinions of students in the first STEMS² cohort were solicited in two ways during the students’ third semester: a) questionnaires with 7 likert-type questions and 4 open-ended questions, and b) focus groups. Twenty one of 26 enrolled students participated in this qualitative case study. The findings section presents data from all 21 participants who completed a questionnaire, and the story and sense of place of two of

nine students who participated in a focus group, Juanita and Kaleo (participant selected pseudonyms).

Questionnaire responses with a Likert-type scale were aggregated and examined for trends while the responses to open-ended questions were compiled to find emerging themes. An open coding (Corbin & Strauss, 2007) strategy was used on the narrative data from the open-ended questionnaire responses and focus group transcripts. The emergent themes were triangulated across students and between focus group and questionnaire data to check for validity. The results were framed using the CoI framework and the findings below are specific to Social Presence. Additional details regarding the methods used can be found in the full study (Yu, 2016).

Results

Sense of community was particularly strong with the students in STEMS². When asked about their most meaningful/memorable experiences in the program 15 of the 21 participants mentioned their classmates in some capacity, whether it was getting to know them, working with them, or the support received from them. The students' bonds were built on shared experiences in the summer learning journey, having shared values, and knowing that they could rely on each other for academic, moral and professional support. One student confirmed this, writing "our community like a safety net always there, that I could always reach out to grab if need(ed)."

Students and faculty built a community that became the foundation for the online learning climate in the fall and spring by working and learning alongside those who restore fish ponds in windward O'ahu, protect Mauna Kea, and make new discoveries at Keck Observatory. Juanita confirmed this in the focus group, stating:

But I think it was pretty powerful to be together pretty much 24-7 for a while before we actually had the online. ... I think there was that trust and relationships that we built that led to the powerful conversations and the ease to which we can just be and say whatever we need to say to each other via the chat box, aloud you know, without actually seeing each other.

Like Juanita, many students credited the summer F2F as the starting point of their ability to openly express themselves during online classes in the fall.

Although the community building in the summer helped, participating in online classes was difficult for many students. The questionnaire showed a dramatic decline in comfort in participating in class discussions from summer (see Figure 1). Just as Garrison, Anderson and Archer (2000) and Rovai and Jordan (2004) suggest, several students mentioned that synchronous classes held online via Blackboard Collaborate did not support sharing emotions, "seeing" each other, and interacting with others as they did FTF. While the students built a community in the summer that fostered open communication in the fall, doing so online was not comfortable for most.

10. How would you describe your comfort in participating in class discussions in the STEMS² classes held during the

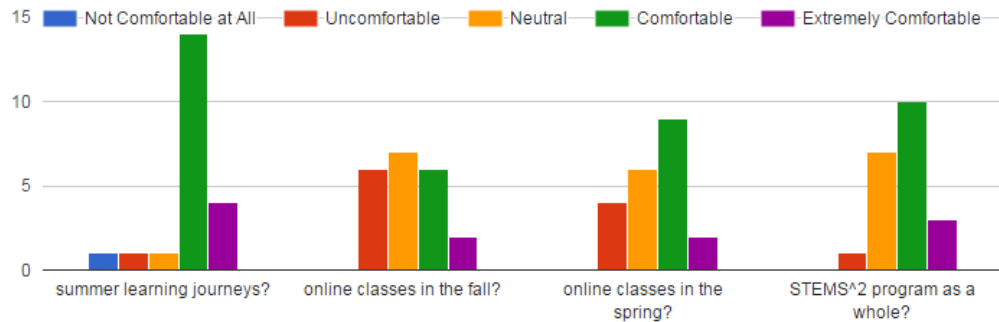


Figure 1. Questionnaire Results Showing Student Comfort Levels in Class Discussions

Feelings of discomfort and alienation can cause students to lose their sense of place online leading them to drop out (Northcote, 2008): this happened to Kaleo. However, after voicing his feelings of isolation and desire to quit, his cohort rescued him by suggesting that they meet in person and join the online class sessions together. Kana‘iapuni and Malone (2006) assert that “from a sense of place grows a sense of *kuleana* (responsibility)” (p. 298). This group’s sense of place grew into their sense of *kuleana* to help each other. Although meeting in person was initiated in response to Kaleo’s concerns, the other members found that it also provided them with the FTF connection, accountability of focusing in class, and moral support. The summer learning journeys also played a significant role in developing the students’ *kuleana*. This was demonstrated when Kaleo said, “I think the summer session is what saved us,” and the other four focus group participants unanimously agreed.

In order to “survive”, the students employed different measures to enhance their educational experience. The online environment made several strategies possible that could not happen in a FTF class. For example, the students mentioned taking screenshots, watching the class recordings, and messaging each other during class if they did not understand what was going on. Others mentioned multi-tasking strategies that allowed them to attend class while meeting their “real-life” obligations. The online instruction placed greater responsibility on the students to monitor their own learning because the teacher could not see them. Sense of self and knowing what kind of learner they were became very important online.

Understanding their strengths and limitations in their learning environment was crucial to student success. When focus group members mentioned texting and Facebooking other students during class when they were confused, Kaleo stated that it would not work for him. He added in the focus group, “Yeah see, I can’t do that. My brain would fall apart.” Another student, who completed an online program prior to STEMS², shared how he learned to be successful online when he wrote:

I have learned through my online experiences how to use this medium as a learning opportunity. Some online sessions are better than others and it helps

when everyone participating has a basic level of comfort and understanding of how these learning opportunities are different than face-to-face. Defining their sense of place and honing the skills they needed to connect to the course, the instructors, and academic content in the fall, helped more students feel comfortable in the spring (see Figure 1). As one student explained, “I got the hang of Laulima, Blackboard, reading/writing, etc in the fall, and am now very comfortable with the whole process this semester (spring).”

Conclusion

In learning about sense of place, STEMS² participants were cognizant and reflective in considering their individual identity in the classroom. The real-world experiences during the summer FTF presented opportunities for them to make sense of each activity through their own lens, not someone else’s. Just as research supports (Garrison, Anderson & Archer, 2000; Northcote, 2008; Vaughan, Cleveland-Innes, & Garrison, 2013), this not only contributed to a strong sense of community but also enabled them to adapt according to their individual needs when classes transitioned to an online space. The result was a rich educational experience that participants found to be rewarding both personally and professionally. Juanita summed it up best in the focus group, saying “I think that’s what I’m most excited about is I now have this new sense of me based on this sense of place that I never had before experiencing this program.”

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