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Going Deep: Reflections on Teaching Deep Ecology in Costa Rica

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Abstract:

Sustainability education aims to help learners understand their interconnectedness with all life, to become creative problem solvers and active citizens, and to engage personally and intellectually in shaping our common future. Experiential learning and critical pedagogy are central to providing opportunities for learners to engage in transformative sustainability learning. The short-term study abroad course, Theory and Practice of Sustainability in Costa Rica, provides one example of sustainability learning through the lens of deep ecology. This short term study abroad course was designed to create sustainability learning that is transformational, thematic and co-created, focuses on multiple perspectives and questions dominant paradigms, is participatory and relational, and is place-based. An overview of the course is followed by a discussion of the implications of this pedagogical design for sustainability learning in higher education.

Key Words:

Sustainability pedagogy, deep ecology, experiential learning, critical pedagogy, study abroad, sustainability in higher education.

Introduction

Candles cast long shadows on the wooden floor of the open-air pavilion at Punta Mona Center for Education and Sustainability on the Caribbean coast in Costa Rica. Sitting cross-legged in a circle, in the middle of a tropical rain forest, eight graduate students are sharing their final creative presentations for the graduate course Theory and Practice of Sustainability in Costa Rica. This course is part of the Leadership for

Sustainability Education (LSE) graduate program at Portland State University, which aims to develop leadership skills in sustainability education. We understand sustainability as the process of making change toward eliminating the exploitation of people and earth, creating equitable distribution of power and resources, and finding creative solutions to complex ecological and social issues (Orr, 2011; Hawken, 2007; Sterling 2002; Santone, 2004). Sustainability education aims to help learners understand their interconnectedness with all life, to become creative problem solvers and active citizens, and to engage personally and intellectually in the tensions created by the interconnectedness of social, ecological, economic, and political issues (Nolet, 2009). Students in this graduate program learn to be sustainability leaders who can educate for sustainable change in ways that are participatory, engaged, integrative, place-based and transformative. Most of the education in this graduate program is active and experiential, including a strong emphasis on community based learning, which is required for every course. The Theory and Practice of Sustainability course is a faculty led study abroad program, and the focus of this course, which took place in June of 2011 and 2012, is deep ecology.

Deep ecology, a term coined by Norwegian philosopher Arne Naess in 1973, refers to deep questioning of unsustainable systems, and looking at the root causes of the sustainability problems we are faced with. One of the central characteristics of the deep ecology movement is its recognition of the inherent value of all living beings. A deep ecology approach acknowledges and values the ecological and cultural diversity of natural systems, and acknowledges the inherent value of nature. Deep ecology is contrasted with a shallow approach to sustainability, which includes technological fixes (e.g. recycling, increased automotive efficiency, export-driven monocultural organic agriculture) that do not question the status quo and are based on the consumption-oriented values and methods of the industrial economy (Foundation for deep ecology, 2012; Devall & Sessions, 2007). Deep ecology is also concerned with self-realization, including an understanding of ourselves and lives as interconnected and interdependent (Devall & Sessions, 2007). The values and philosophy of deep ecology are closely connected to sustainability education and thus deep ecology is a valuable focal point for learning sustainability.

In this paper we first look at the connections between experiential learning, critical pedagogy, and teaching deep ecology and sustainability, and then provide a theoretical overview of the pedagogy used to design and implement this study abroad course. Next we provide an overview of this case study including course participants, learning outcomes, location, assignments, and activities. This paper represents a case study with a small number of students for which the authors did not obtain permission from our institution for human subjects research. As such, this is not a research study. However, we offer reflections on the implications of this pedagogical design for sustainability teaching and learning in higher education that may be applicable in multiple settings.

Experiential learning, critical pedagogy, and sustainability education

Learning experientially is a natural fit for learning deep ecology. Horwood (1991) argued that deep ecology and experiential education have much in common; both

represent a critical shift in central values and both movements try to "see things whole" (p. 23). When combined, deep ecology and experiential learning can allow for the emergence of "a more powerful way to influence the transformation of the world…" (Horwood, p. 24). The understanding of patterns, interconnectedness, and a deep gratitude and love for the earth can emerge in the process of combining experiential learning in natural places with the values of deep ecology (LaChapelle, 1991).

It has been well documented that there are many physical, mental, and emotional benefits of spending time in natural surroundings (Maller, Townsend, Pryor, Brown, & St Leger, 2011; Pryor, Carpenter, & Townsend, 2005; Louv, 2008; Frumkin, 2001). Orr (2004) expresses the benefits and the importance of learning from natural places including: removing abstractions and learning directly from nature; providing experience beyond technology; cultivating mindfulness by slowing the pace of learning; teaching the art of careful observation; understanding learning beyond science, language and intellect. The benefits of experiential place-based learning in the natural world include altering learners' perspectives and sense of connection, which in turn makes them more likely to act on their learning. According to Mathews (2006), if people feel psychologically connected to the natural world, they will be more willing to engage in sustainable practices. Brymer (2009) similarly notes that, "a person will only undertake sustainable practices out of commitment to look after the natural world when he or she feels connected to, or part of the natural world" (p. 197). Thus it is important that sustainability pedagogy fosters a better understanding of ecological identity. Facilitating ecological awareness and an ecological identity is a reflective process, which includes developing an appreciation for the preciousness of all life, an understanding of the importance of being mindful in each moment, learning to see nature everywhere, learning to be struck by wonder and awe, and using our senses to connect (Thomashow, 1995).

In addition to fostering an ecological identity, experiential learning supports important aspects of sustainability learning including providing opportunities for learners to gain new values and skills, to be exposed to new epistemologies, to reflect critically on their learning, and to engage in problem solving (Orr, 2004; Cortese, 1999; Weissman, 2012). Experiential education can also provide opportunities to learn, as Merriam (2004) suggests, in connected, affective and intuitive ways, rather than focusing solely on rationality through critical reflection. This integration of intellectual, connected, and affective learning is key to sustainability education (Sterling, 2002). A sustainability educator's role is to create and facilitate active and experiential learning experiences that encourage the development of connections between learners, and between learners and places and other beings. These connections can have intellectual, physical, emotional and spiritual aspects (Armstrong, 2006). When learning sustainability, developing connections experientially often means participating in a local community and place in a situated way. Individuals learn as they interact with a community and become a participant in that community. An educator provides real-life conditions, activities, and problems in which learners engage in and work through (Fenwick, 2001).

Within sustainability education contexts, experiential learning is deeply and closely related to critical pedagogy. Critical pedagogy seeks to engage learners in what Freire

(1970) calls conscientizacao, defined as “learning to perceive social, political, and economic contradictions, and to take action against the oppressive elements of reality” (p.17). A critical approach to sustainability pedagogy is key because it centers on naming and exposing mechanisms of power in order to find ways to resist them (Fenwick, 2001), and attempts to create education in which students are reflective and active agents of their own learning, thus preparing them to be change agents for a sustainable world. While critical pedagogy highlights ways of knowing that arise from socially marginalized positions, such as those of women, indigenous peoples, or working class people, learners are also encouraged to question their own contexts and encounter the realities of racism, sexism, classism, and anthropocentrism.

According to Gruenewald (2008) there are two interrelated goals represented by Freire’s notion of conscientizacao, that are at the center of critical pedagogical practice, “becoming more fully human through transforming the oppressive elements of reality” (p. 311). These goals are also central to place-based education, and deep ecology. As Gruenewald argues, “Critical place-based pedagogy cannot be only about struggles with human oppression. It also must embrace the experience of being human in connection with the others and with the world of nature, and the responsibility to conserve and restore our shared environments for future generations” (p. 314). Experiential and place-based critical pedagogies are clearly important for teaching deep ecology, which seeks to challenge unsustainable systems, and develop a meaningful sense of interconnectedness and relationship with our world.

Experiential learning that focuses on enhancing our connections to the earth, and our feelings of interconnectedness, and on challenging systems of power and oppression can alter the way we view ourselves in the world and may spur transformational learning that includes value and behavior changes. Focusing on deep ecology and sustainability in an experiential study abroad course helps to center learning on the importance of connection to natural places and other beings, and to provide opportunities to critically reflect as a community of learners on how we can engage in transforming oppression.

Course development and pedagogy: theoretical framework

This course, Theory and Practice of Sustainability in Costa Rica, was developed with an intentional design process using the Burns Model of Sustainability Pedagogy. While it may be true that experiential education, critical theory, and sustainability education are a good match, there is currently very little theory or research that explores *how* to develop or implement sustainability education, and *how* it might be connected to experiential education. Thus, the Burns Model of Sustainability Pedagogy aims to address the need for a practical way to effectively teach sustainability experientially and critically (Burns, 2009; Burns, 2011). This pedagogical model recognizes that in order to be able to truly understand and address the interrelated sustainability issues we face today, educational practice must both develop and embody the practice of sustainability. As such, the Burns model fully embraces experiential learning and critical pedagogy as key elements of learning sustainability.

The Burns Model of Sustainability Pedagogy has five dimensions (see Figure 1). First, this model emphasizes *Content* that is thematic, multidisciplinary, and co-created.

Second, the design includes *Perspectives* that are diverse and critically question dominant paradigms and practices. Third, the model incorporates a *Process* that is participatory, experiential, and relational. Fourth, the model includes a *Context* that is place-based. Fifth, the Burns Model of Sustainability Pedagogy emphasizes an ecological *Design* for the purpose of transformational learning. The Burns Model of Sustainability Pedagogy holds multiple goals for learners. It seeks to: (a) increase learners' systemic/thematic understanding of the relationships between complex sustainability issues (*Content*); (b) provide learners with opportunities to think critically about dominant paradigms, practices and power relationships and consider complex ecological and social issues from diverse perspectives (*Perspectives*); (c) enhance learners' civic responsibility and intentions to work toward sustainability through active participation, experience, and through relationships with other learners (*Process*); (d) increase learners' understanding of and connection with the geographical place and the community in which they live (*Context*); and (e) utilize an ecological course design process that intertwines the other four dimensions to create transformational learning experiences (*Design*) (Burns, 2009). Ecological design is at the heart of this model, which focuses on mimicking patterns and relationships in nature (Holmgren, 2002). Ecological principles, when applied to teaching, can show us how to create systems that are sustainable (Capra, 2002). Ecological design, according to Hemenway (2000), includes five basic steps: (1) observation; (2) visioning; (3) planning; (4) development; and (5) implementation. These steps are not necessarily linear, however. This design process was fluid and allowed for the learning to happen in sometimes unpredictable, yet productive ways. The intentionality of the design, however, was important. In our experience, when we focused on designing the course using the Burns model, the goals of sustainability education were naturally and organically met.

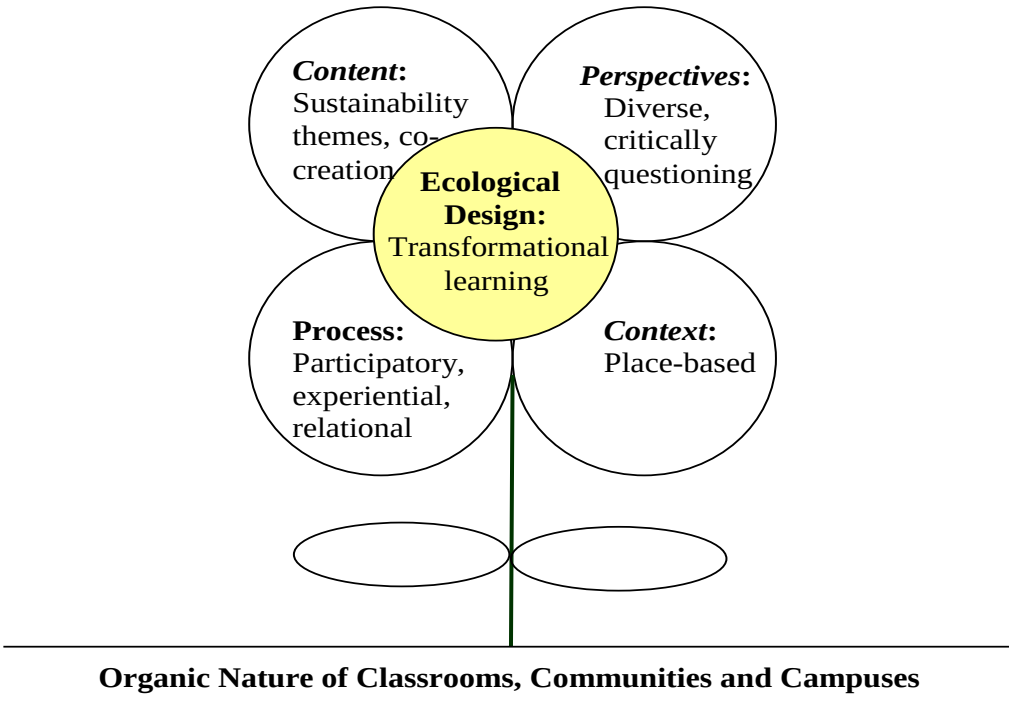

Figure 1. **The Burns Model of Sustainability Pedagogy**

Theory and Practice of Sustainability in Costa Rica: Course Overview

This short-term study abroad course is a ten-day graduate course that takes place on the Caribbean Coast of Costa Rica. Approved and supported by the university's study abroad office, this course is also supported by the program provider Natural Elements International. NEI's mission is to motivate and empower people to develop sustainable, healthy human communities for our future generations (NEI, 2012). The director of NEI is also a graduate of the LSE program and developed all the logistical aspects of the course.

There were eight student participants in this course in 2012. The students were all studying in the LSE graduate program, except for one student. Of the LSE students who participated, one student was a new student (this was her first course in the program), three students were just finishing their first year in the program, and three students were finishing two or more years in the program. Students ranged in age from 24-52. Seven students were Caucasian and one student was African American. All the students but one were female. In this group there was a wide range of international travel experience; several students had lived out of the United States for two or more years while two students had never traveled outside the US prior to this course. Most of the participants worked in addition to being graduate students.

The course includes theoretical foundations, concrete examples, and experiential learning with a focus on deep ecology. Some of the key course learning outcomes are: 1) To understand and describe deep ecology as it relates to sustainability; 2) To reflect on the meaning of sustainability in the context of industrial development and ecotourism; 3) To learn skills related to permaculture and sustainability and reflect as a community of learners on these hands-on experiences; 4) To learn about sustainability theories and practice in a cross-cultural setting and to compare and contrast this learning to previous life experience and graduate work.

The required reading for the course was *Reconnecting with Earth* (2009), a compilation of articles on deep ecology created by The Northwest Earth Institute. To achieve the learning outcomes, we designed the course to incorporate readings, experiential learning, ample time for both personal and group reflection, and assignments that reflected the nature of the theme. These assignments, intended to be low tech, included: 1) a reflection portfolio; 2) a connection to place (sit spot) activity; 3) a final synthesis and creative presentation; and 4) participation in course activities and group reflection sessions. The reflection portfolio was intended to be a daily way for students to personally reflect on their experiences. In a blank journal, they were asked to collect their daily reflections (written, artistic and academic) on their learning in this class. Poetry, stories (fiction or actual accounts), conversations, and drawings were encouraged. The connection to place (sit spot) activity simply required students to find a place where they could sit by themselves for 30-60 minutes each day to "just be present and observe the natural world around you and your relationship to it." We encouraged them to reflect on this experience in their reflection portfolio. These assignments were designed to meet the learning outcomes of understanding and describing deep ecology as it relates to sustainability, and reflecting on the meaning of sustainability in the context of development and ecotourism.

The final synthesis creative presentation was a time to show the group in a visual, artistic and multi-mode format what they learned from the course and how it might impact their life and work. This assignment was designed to meet the learning outcome of learning about sustainability theories and practice in a cross-cultural setting and comparing and contrasting this learning to previous life experience and graduate work.

Participation in course activities (which are described next) and in group reflection was a requirement intended to meet the course learning outcome of learning skills related to permaculture and sustainability and reflecting as a community of learners on these hands-on experiences.

Approximately half of the class takes place in the small Caribbean coastal town of Cahuita, Costa Rica, where a mix of people of African, Jamaican, and indigenous descent, and expatriates, form a small community that is now mostly based on tourism. Cahuita is situated next to a large national park, and close to several indigenous community settlements, making this a rich location from which to study the local ecology and culture. Additionally, the local history is full of stories of marginalization and community struggle to retain their land, homes, and dignity. Due to its distance from the capital city, San Jose, its rural heritage (until recently the community was made up of fishers and farmers), its lack of electricity until the 1980s, and its diverse cultural heritage, the community has repeatedly been taken advantage of by the federal government, and has had to come together in resistance (Palmer, 2005).

The other half of the course takes place at Punta Mona Center for Sustainable Living and Education. Punta Mona is an 85 acre off the grid, family owned environmental education center, botanical collection, permaculture farm and eco lodge, dedicated to sustainable ways of living and alternative learning (Punta Mona, 2012). Punta Mona is located south of Cahuita on the Caribbean coast, and can only be accessed by trail or boat; there are no roads into Punta Mona. This rustic permaculture education center consists of a large outdoor (covered) kitchen, composting toilets, outdoor showers, a yoga pavilion, a community building and several bunkhouses. There is a kitchen garden, chicken coop, a wide variety of fruit trees, and rice, corn and bean fields. The center is off the grid (except for satellite internet) and uses solar energy and water catchment for all its energy and water needs.

We began the course by driving from San Jose to Cahuita on the first morning of our class. Passing through the small towns and farms of the central highlands and down through the pineapple and banana plantations of the Caribbean coast provided an opportunity to see much of the Costa Rican countryside. Upon arriving in Cahuita we settled into a hotel and a daily rhythm. We ate breakfast, engaged in an experiential field visit, returned to Cahuita for a late lunch, enjoyed afternoons of reading, personal reflection or “sit spot” time, swimming in the ocean, and dinner, followed by several hours of group reflection on the day’s activities and the readings.

Our field visits in the local area made a strong impact on learners. For example, we toured the Cahuita National Park with two local Costa Rican, or “Tico” guides, middle-aged men who had been friends since boyhood and who knew the history, culture and ecology of the area as totally connected to themselves. Beyond all the monkeys, sloths, snakes, birds, and plants that we met on this tour, what impressed students even more

was the depth of knowledge that these two men had about their place. Their willingness to share this knowledge with foreigners was also astounding. The national park we were hiking through had been forcefully taken by the national government, while original settlers and landowners were forced to move. As the community has had to therefore move towards ecotourism and away from traditional forms of livelihood such as fishing, they have become more and more dependent on foreign visitors and foreign economies, an ultimately unsustainable situation as world economies plummet and the cost of fuel to travel, and ecological devastation caused by travel, increases. As we walked, talked and ate fresh pineapple and coconut with our guides, it became clear that issues such as conservation, ecotourism and sustainability in the community of Cahuita were complex. However, there was a real sense that our guides were genuinely willing talk about the things that truly impact their everyday lives including exploitation, ecotourism, and economic and social injustice.

On another day we visited the Kekoldi indigenous community. Our guide on a hike though Kekoldi land was a young indigenous man who had been trained by his grandmother and aunt. The focus of this tour was medicinal plants and once again, the students, who were mostly 10-15 years older than our guide, were struck by the deep knowledge of place he demonstrated. As we nibbled our way through the rainforest, tasting quinine, heart of palm, and Durian fruit, we marveled at what we were witnessing; a deep sense of connection with and knowledge of the land.

Another field visit was to the Sloth Sanctuary of Costa Rica. This organization takes in sloths who have been injured, mostly due to their inability to adapt to the rapid industrial changes in the area. Most sloths are injured by cars or electric power lines, which have only come to the area since 1989. We were able to meet and touch resident adult and baby sloths and to learn about their amazing habits and way of being. Several students suggested that sloths could be the mascot of sustainability due to their slow reflective nature, their low impact, their nourishing of their ecosystem through weekly deposits, their sly smiles, and willingness to see the world upside down.

About half way through the trip, we left Cahuita and hiked into Punta Mona Center for Sustainable Living and Education. With a local guide, we made our way along the spectacular coastline through the rain forest, learning more about the history, culture and ecology of the area. At Punta Mona, were happy to settle into a week off the grid, exploring deep ecology in an even more personal way. We created a daily routine: morning yoga, breakfast, chores, learning workshop, lunch, time for personal reflection and sit spot, swimming or snorkeling, dinner, and group reflection. The learning workshops at Punta Mona included a tour of the land and permaculture zones, a medicinal plant workshop, and a permaculture principles workshop. Punta Mona provided a rich location in which to experience connection to place. We ate salads, eggs and fruit from the land; we experienced the daily discomfort of relentless insects and crushing humidity; we enjoyed the constant sound of the ocean; we found places to sit and be alone and be quiet; we unplugged from any devices; we cooled off with daily swims in the ocean; we spent time reflecting quietly in hammocks, sweeping the floor, helping to build a new kitchen garden, trellising tomatoes, preparing dinner, and making chocolate.

Reflections on course design and student learning

Although not a research study, we found that reflecting on the course evaluations and the design and implementation of this course was helpful for learning about the challenges and successes of teaching sustainability. According to student course evaluations, the course was a positive learning experience in which each participant felt like they gained new knowledge, understanding, and experience. Student learning emerged, not from any single pedagogical element or activity, but from an intentional design, which integrated multiple learning dimensions and activities. For each of the dimensions of the Burns Model of sustainability pedagogy, (content, perspectives, process and context) we offer some reflections on the pedagogical practices that were key to this successful learning experience.

We used the Burns Model of Sustainability Pedagogy to design this course beginning with observation and visioning. As we observed, we saw that students in the LSE program were looking for more opportunities for reflection and connection with the earth. We started thinking about how to develop a multidisciplinary theme that could bring together various aspects of sustainability. Organizing the *content* of this course around the theme of deep ecology allowed for interdisciplinary exploration and questioning of some of the big questions of deep ecology including: What is our place in the world? How can we live with integrity in a way that honors all life? Readings and experiences centered on the theme of deep ecology and thus encouraged a reflective study of sustainability values and relationships, rather than a study of one sustainability issue (such as climate change or ocean pollution). This thematic focus on sustainability content allowed for learning that was exploratory and co-created. Although this kind of learning is very rigorous (Thomashow, 1995), the course was not focused on learners coming to one certain understanding of the theory and practice of sustainability. Rather, we wanted learning to focus on better understanding the importance and quality of relationships, and how to better understand ourselves.

In designing this course, we also arrived at the theme of deep ecology as a tool for critically questioning dominant paradigms (perspectives). Additionally, we envisioned that this course, situated in a beautiful ecologically and culturally diverse setting, could provide the background for vibrant ecological identity learning. We began planning; thinking about readings, experiences, learning outcomes and assignments that would support the course theme and provide opportunities for bringing a variety of less heard perspectives to the course, and for regularly incorporating the perspectives of the learners.

Daily group reflections were an extremely important part of the learning process in this course and drew out the *perspectives* of the participants and those they shared time with during the journey. In addition to their own diverse perspectives, the participants together reflected on the diverse perspectives they interacted with, weaving these together into a new understanding. This group reflection was focused on both the reading, and on daily experience. Although it was guided, the reflection time also allowed for plenty of time and space for participants to really express themselves and discuss their observations, questions, and new learning with one another. For example, after a reading on ecopsychology, one of our discussion prompts was: According to the readings, each of us experiences the pain of the earth in some way. How can we heal

or address this pain without getting caught up in radical individualism (the cultural pathology of our time)?" Or, after readings focused on nature and spirit we discussed, "How can we integrate the four capacities of self (physical, emotional, intellectual, and spiritual) into our work as educators and sustainability leaders?" These and other prompts provoked in-depth and often emotional discussions during our daily reflection sessions. Without this daily reflection time, the learning experience would likely not have been as rich for participants.

In the design of this course we also considered how to ensure that all the learning was an active and experiential process in which students were highly engaged with each other and their learning. The *process* of experiential and collaborative learning was critical to the success of this course. While students learned from each other within the context of daily experiential activities and reflection, one of the most substantial learning experiences appeared to be the process of creating their final presentations that highlighted the integration of their learning on the trip. This assignment was purposefully open ended and simply stated: *Your final synthesis presentation should show the group in a visual, artistic, or multi-mode format: What you have learned on this trip/from this course and how you think what you have learned may impact your life and work.* While students were somewhat anxious about their abilities to create such a project, the active process of creatively integrating their learning and sharing this with each other was ultimately very empowering. These final presentations were extremely creative and took many different forms including: A trash mosaic and poem that reflected on consumption and conservation; a yoga sequence and guided meditation that incorporated learning about connections between body and place; a story with photographs and images about personal growth and connection to place; a participatory food making activity that integrated learning about the importance of local foods and community relationships; an interactive game that highlighted our relationships with plants. These projects integrated participants' learning in ways that made sense to them, and allowed them to share this learning in non-traditional ways that were participatory and therefore became meaningful to other learners as well.

In designing and developing this course we also thought about how to foster connections with the *context*—with the land and the communities we would be visiting. The attention to the context of learning was also very important to the overall experience. Of course, since the course took place in Costa Rica, the context often took the center stage in learning. However, in particular, the assignment that required students to choose and go to a "sit spot" each day was a very effective way to enhance their connection to this place they were visiting and learning from. Students noted that being in their sit spots encouraged quiet reflection, slowing down, and a sense of interconnectedness with the world around them. They often took notice of plants, animals, and insects while in their sit spots and connected more deeply to the life and activity within their learning context because of this. For most, this opportunity for stillness was a new way to engage their senses and emotions in their learning process.

Furthermore, being in a context that was unfamiliar, and being away from the comforts of home and family also allowed for the enhanced learning that experiential education often provides. The disorienting dilemma, in this case, was being in a new context, but was also learning in a new way; a way that encouraged the engagement of

their full selves in a community of learners. These challenges provided springboards for new learning and personal and professional growth.

Discussion

Integrating content, perspectives, process, and context through an intentional and flexible design process allowed space for rich sustainability learning to emerge in very personal, meaningful, and productive ways for participants. This learning was rich with new experiences, relationship-building and with paradox and contradiction. For example, we struggled with the notion of flying thousands of miles with a group of students to learn about deep ecology and sustainability, an arguably unsustainable thing to do. Additionally we wondered about our role in our host community. While we were adding dollars to a community dependent on ecotourism, were we also just perpetuating an unsustainable local economy? Was our presence in the host community ultimately detrimental? We also took note of the deep paradoxes within our learning experience in Costa Rica. Within a country that touts its ecotourist reputation so strongly, why were small coastal communities so marginalized? Why was there so much plastic garbage washing up from the ocean? Why were fishing laws routinely broken and sea life on the decline? Why was habitat disappearing for large luxury homes and condos?

These were the kinds of questions which arose from our observations and experiences, and that the students grappled with during group reflection time. Many students noted that they had read about the impressive sustainability work that Costa Rica is doing, and thus had higher expectations about the solutions they would see. They expected to experience a sort of sustainability paradise, and instead were met with contradictions. This gap between expectation and reality allowed for rich exploration and helped students to further understand sustainability work as a messy process and one that is continually evolving. Stronger awareness of the gap between the world as it could be and the world as it is, can lead to learning how to engage in closing the gap (Schley, 2001). While we could never pick up all the plastic trash that washed up onto the beaches, we could change our part in using plastic as a part of everyday life.

As part of this course, students also experienced the long reaching arms of the neo-liberal capitalist economic system, driven by technology and consumerism, in places that they expected to be pristine and somehow more immune to these influences. By experiencing and examining this contradiction, students began to question their own role in the global economic system as consumers, and as tourists. They questioned their own privilege to travel to Costa Rica, and their own use of technology (and energy) on a daily and ongoing basis. This kind of critical theory approach to sustainability learning was key because it centered on exposing oppressive power relationships and on finding ways to resist them (Fenwick, 2001). By understanding the power relationships embedded in the diverse perspectives they experienced, learners could also understand how personal feelings related to sustainability issues, such as despair and conflict, are shaped by historical and cultural dynamics (Fenwick, 2001). Through this disorienting dilemma of encountering ideas and experiences that challenged their preconceived notions of the world (Mezirow, 2000), they began to understand in deeper

ways that the world is not a static or closed system, and that existing challenges have multiple solutions. Furthermore, in experiencing rich interconnections between human communities and local ecologies, students were able to more fully understand the interconnectedness of systems.

As we struggled with the incongruities we saw, we were also heartened by the strong sense of interconnectedness, relationship to place and earth, and community connections that we witnessed. Through the lens of deep ecology, we had the opportunity to reflect personally and intellectually on the tensions created by the interconnectedness of social, ecological, economic, and political issues (Nolet, 2009), to question unsustainable systems, and look at the root causes of the sustainability problems that we experienced. In a very emotional and spiritual way, students also learned about the importance of the inner work of sustainability, of "start[ing] to deliberately slow down their lives to cultivate broader awareness and reflective practice" (Schley, 2011, p.2). We focused on several key elements of deep ecology including deep questioning, deep empathy, and holistic inquiry (Besthorn & Canda, 2008), which were essential to the inner work of understanding ourselves as interconnected and interdependent (Devall & Sessions, 2007).

In these many ways, experiential and critical pedagogies proved essential to learning sustainability and deep ecology. We were left with questions but also much inspiration and examples to follow. For example, many of the students were inspired to increase their ecoliteracy and to get to know their own places and communities better through relationships with local food, and knowledge of plants and animals. Others were inspired to make changes in their lives that would further align their actions and relationships with their sustainability values. Some expressed the importance of community building at the local level and returned home with a renewed sense of desire to be involved in efforts to "depave" neighborhood spaces, collaboratively build school gardens, and create engaging and hands-on learning experiences for at-risk youth. On the whole, we created new relationships and were inspired to live more sustainably, more simply, more connected, and with more ease; in the way that Ticos would call, "Pura Vida."

Conclusion

While this case study represents just one example of a sustainability course with a small number of students, there are several important teaching and learning elements that have surfaced through this example that will be applicable to other higher education settings. The first is the importance of experiential learning and critical pedagogy to sustainability learning. The second is the importance of intentional pedagogical design that incorporates a variety of elements to create a holistic sustainability learning experience for students. As higher education begins to focus more on teaching sustainability, it will be important for educators to think critically about how learners can be experientially engaged in the tensions and paradoxes inherent in sustainability issues. Most courses are not study abroad courses, but educators can find ways to engage in local communities and ecosystems, and to create experiential sustainability learning opportunities that are meaningful for learners. This can be done through intentional pedagogical design that: Engages learners thematically; includes multiple

and non-dominant perspectives; is participatory, collaborative, and relational; and is place-based. Sustainability teaching and learning must provide learners with opportunities to be exposed to new ideas, to reflect critically, to learn in affective and intuitive ways, to connect to the places where they live, and to engage in problem solving with others. This case study example provides fodder for thinking creatively about how to design and implement sustainability learning opportunities throughout higher education.

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