

Sustainability Education and Environmental Nihilism: Transforming Suburbia through Experiential Learning

Darien Ripple, Chandler Gilbert Community College

Abstract: This paper will focus on a qualitative research project that occurred in the fall of 2011 at Chandler Gilbert Community College, which set out to better understand the learning process of experiential education by observing the comments and actions of students interacting in nature-based learning. The research study is based on the premise that students who develop a moral awareness of nature will better understand the core conceptual components of environmental sustainability. The main objective of this research project was to assess the transformational learning of students enrolled in PHI-216 Environmental Ethics courses who engaged in experiential learning to better understand environmental sustainability.

The intent of this paper is to first establish clear and plausible theories associated with experiential learning and transformational education, noting how theoretical methods can be incorporated into higher education. A theoretical base will be used to explore: 1) conditions of modernity, 2) ideas associated with nature-based learning, and 3) to formulate an experiential learning model to be incorporated into course curriculum. This paper will then analyze data collected during the case study.

Keywords: environmental sustainability; sustainability; ethics; experiential education

Theoretical Foundations

The theories of Anthony Giddens were reviewed to establish a method of observation and documentation of students involved in a learning process under conditions of modernity (Giddens, 1986, 1991, 2009). Giddens suggests there exists deeply embedded structural properties and principles in the modern world that influence motivation and potential for action (Giddens, 1986). For example, individuals in a globalized world some times lack the ability to find meaningful purpose, which can lead to an existential crisis hindering any type of motivation to be a responsible citizen (Giddens, 1991). This phenomenon can be found in the average community college student that contends with multiple human activities in any given day such as work, family, and social activities (Shor, 1987). There are a myriad of competing priorities and values that a community college student copes with leaving little room for exploring abstract ideas of sustainability.

In respect to this particular inquiry into sustainability education, the challenge of environmental nihilism becomes a factor when observing the learning process at a suburban community college because of influences associated with modernity like consumerism, narcissism, and egoism – all of which can render the natural environment meaningless. Students that are not actively engaged in the natural world will have difficulties finding a concern for the environment. Sustainability education is thus one step removed from a student's sense of being.

When acknowledging environmental nihilism as a plausible condition of the modern world it becomes necessary to explore ideas and theories that warrant the incorporation of nature based learning into curriculum (Ehrenfeld, 2008; Larson, 2011; Louv, 2006, 2011; Tood & Todd, 1993). One must also review progressive trends in higher education to establish a viable learning model (Brookfield & Holst, 2011; Kamenetz, 2010; Orr, 2011). Nature based learning explores multiple intelligences in an attempt to create a sense of place within the natural world (Gardner, 2006; Louv, 2006).

Nature based learning is a form of experiential learning because it seeks to create personal experiences intended to initiate inquiry and understanding of the natural world. Experiential learning encourages students to personally explore and reflect on information, ideas, and theories that parallel hands on learning intended to trigger the ability of students to conceptualize course material (Beard & Wilson, 2002; Boud, Keogh, & Walker, 1985; Cowan, 1998). Hands-on experience with the natural world becomes essential to understanding an abstract subject like environmental sustainability, which may at first appear to be absent from a student's everyday life.

Experiential Learning and Environmental Ethics

Chandler Gilbert Community College (CGCC) is located in a suburb outside of Phoenix, Arizona. The once farming community has transformed into housing developments and shopping malls. Rapid urban sprawl in the area during the past two decades has lead to a current enrollment of around 18,000 students. In the fall of 2011, I implemented an

experiential learning model in two sections of PHI216 Environmental Ethics involving fifty students ranging in age between 17-35 years old with an average age of 20.6 years old.

I adapted Kolb's model of experiential learning, which emphasizes creating connections between *abstract conceptualization* and *active experimentation* to a fifteen-week schedule (Kolb, 1984; Moon, 2004). The piloted experiential learning model involved a technique referred to as *sequence and reinforcement* (Vella, 2002). The process begins with the student engaging in a basic hands-on activity that serves as a platform to solve more complex problems. The technique attempts to establish a learning continuum that reinforces previous learned skills and ideas.

The sequencing consisted of five learning cycles which included: 1) the formation of a land ethic, 2) evaluating moral dilemmas associated with food sources, 3) observing the morality of public policy, 4) formulating a sustainable action plan, and 5) the creation of an individual experiential learning activity. In each of the learning cycles, students were asked to analyze assigned readings, while drawing upon other intelligences associated with an assigned experiential learning activity. For example learning cycle one focused on establishing a land ethic. Students read *A Sand County Almanac and Sketches Here and There* (Leopold, 1949) by Aldo Leopold, discuss chapters, visit the Gilbert Riparian Preserve, and then reflect on the experience in relation to the reading. Learning cycle one establishes a base of knowledge that is then transferred into learning cycle two. The topic of environmental sustainability serves as a sequencing thread progressing into each cycle. The combination of concrete stimulus, analysis and self-reflection allowed students to reevaluate environmental sustainability presented in the course.



Figure 1 A student visiting the Gilbert Riparian Preserve

Applied Research

In order to analyze the ability of students to understanding environmental sustainability I implemented a multi-level qualitative research approach that collected data from four different sources: 1) student surveys, 2) focus groups, 3) individual student journals and 4) a grounded participant observation (Creswell, 2003). I engaged in a concurrent nested model that simultaneously collected data from the different questions at a variety of levels. The following two research goals and questions were analyzed and will be addressed in this paper:

Goal 1 - Understand the process of experiential learning in relation to adult learning.

Question - How does student interaction with nature facilitate the learning process?

Goal 2 - Understand the process of transformational learning in relation to experiential learning.

Question - What aspects of nature-based learning transform student perceptions of sustainability?

Goal I

I focused on student surveys, individual student journals, and grounded participant observation to analyze goal one. I concentrated on two particular questions in the surveys. I first analyzed the pre-survey and post survey responses to the question, “How often do you engage in activities in the natural world - Ex. Hiking?” In the pre-survey 62% of students responded to engaging in nature often, whereas in the post-survey 83% answered often or more often than before the course. Some students in the post-survey qualified their answers by noting the course influenced their desires to be in nature. A nineteen-year-old male responded, “increasingly more, I am beginning to fall in love with the outdoors and hiking again.”

The second question I analyzed was the post survey question, “Did the experiential learning assignments help you better understand environmental sustainability? Why or why not?” The answer “Yes” was given by 92% of the students. Almost all students clarified their view of experiential learning by including following up statements such as, *created greater sense of place, makes connections with course readings, gave a sense of accomplishment, was hands on and leads to further inquiry*. One particular twenty-one-year-old female responded, “Yes, it made me actually see nature for myself. It got my attention and experiencing my hike was something that could not be taught in a classroom setting. It is hard to explain how amazing nature is without having it in front of you in real life.” The student’s answer, which was consistent with the views of other students, expresses the importance of getting out of the traditional classroom and experiencing nature. The responses suggested that students were making connections to their experiences in relation to course materials.



Figure 2 Students working in the CGCC Environmental Technology Center Gardens

Student journals that reflected on the learning process provided a solid base of evidence warranting the value of experiential learning. A rich example that demonstrates the effectiveness of experiential learning comes from a twenty-five-year-old female reflecting on her individually designed experiential assignment to explore the Tonto Natural Bridge:

I noticed a sign across the highway from the park stating there was a landfill nearby. I was very intrigued that there would be such a place within close quarters to a riparian area. I have since searched for answers, but instead have been led to additional questions. I became interested in locations and dimensions of landfills, in addition to hazards and potential consequences of the environment within it's immediate vicinity.

The student was not content with just exploring nature. She now began to wonder about humans infringing on the natural world, becoming aware of the realities of waste in a consumer society. The student could have easily just reported on her experience at the natural bridge but instead became intrinsically interested in seeking further knowledge about waste management.



Figure 3 Student exploring Tonto Natural Bridge

Finally, I was able to note first-hand the merits of experiential learning by engaging in grounded participant observation. In collaborative problem solving activities, I noted the ability of students to multi-task, self-organize and articulate their ideas in formal presentations. The day of gardening (cycle two) was one of the most insightful activities to observe because, almost all of the students had never worked in a garden, yet they quickly began migrating to activities that they found interesting. In addition, I observed naturally occurring collaborations around necessary tasks like moving compost to garden beds, making stone walkways, and even pulling weeds.

Goal II

For Goal Two I focused on the conditions associated with nature-based learning that transform student perceptions of sustainability by incorporating all four methods of data collection. In reference to student surveys, I focused on two questions that were presented in pre and post surveys. The question that provided perplexing results in reference to the complete study was, “Do you think that the preservation of the planet is an important concern?” In the pre-survey 98% of the students responded *yes* whereas only 89% said the same in the post-survey. The post-survey result in isolation might appear puzzling given that after fourteen weeks a few students responded to being less concerned with the preservation of the planet. Although in context to the results of the second observed question, the prior question is better understood.

The second observed question for goal two was, “Is environmental sustainability a concept that you think about in your everyday life?” In this question only 50% stated *yes* in the pre-survey, whereas the answer doubled to 100% in the post-survey. When observing both questions together, and from data collected in the focus groups (which will be discussed later in the paper) it appears that the students became better informed

about the state of the planet as well in their understanding of sustainability. This new-found knowledge may have lead some students to become pessimistic about the future state of the planet.

The student journals also provided insight into transformational learning by focusing on language depicting possible triggering mechanisms associated with experiential learning. Student journals provided connections between experiential learning experiences and the understanding of course material. Students used such words and phrases as, *purpose, doing, application, takes on meaning, experience, hands on, and real work* to note that experiential learning provided a connection to course material. A contextual example comes from a thirty-two-year-old male commenting on experiential learning, “hands on learning is always (in my experience) more beneficial at forging a connection and providing direct understanding of a topic. In this case, being in the environment certainly opened my eyes to issues here in the valley and on campus as well.”

I implemented the World Cafe collaborative learning process to serve as an informal focus group design (Brown & Isaacs, 2005). The process rotates students from one small group to another during ten-minute intervals over a half hour time frame. The World Café occurred on the first, seventh, and fourteenth week of the course. The students were asked to focus on their personal experiences with sustainable or unsustainable behavior and reflect on how to define sustainability. The concept that experiential learning enhances the ability of students to understanding of environmental sustainability was reinforced by data collected in focus groups.

In the first World Café, students depicted sustainability as being little more than recycling and not using water bottles. The students were unable to provide clear examples and could not articulate a definition of sustainability. By the seventh week, students were able to articulate clear examples and provide definitions of sustainability that reflect ideas associated with current academic articles. In the seventh week students were making the following claims in the World Café, *we need to think more about long-term consequences; rather than short-term profits, and sustainability refers not just to our present generation, but future ones as well.* Students were acknowledging the need for *having a land ethic and sense of place, and being more aware of consequences.* Students in the fourteenth week of the course demonstrated an understanding of the topic by defining sustainability as a *paradigm shift of every individual to have better moral obligations for the next generations and over all ecological health.* Students were able to articulate a moral responsibility to the planet.

Finally in regards to grounded participation observation, I was able to observe students engaging in critical thinking activities to solve actual environmental concerns in their community. In separate learning cycles the students worked on projects that put theory into practice. In learning cycle three students analyzed the cities of Gilbert and Chandler through the lens of chapter sixteen in Jared Diamond’s *Collapse: How Societies Choose to Fail or Succeed* (Diamond, 2006). Diamond points out twelve concerns of urban areas such as natural habitats, population growth and freshwater. Students were assigned into four groups and asked to investigate how the concerns relate to one of the two cities.

The process involved five class periods to research, analyze data, provide a formal group presentation using power point, video and/or prezi, and submit an individual reflection. A nineteen-year-old male noted in a journal assignment associated with the learning cycle:

In reflection it was eye-opening to see examples of the environmental problems discussed in “Collapse” in our own home city, and state. I have learned that our iconic desert landscape is under attack, and drastic action needed to be taken in protecting it. In addition, studying my topic in particular I saw a clear correlation with Diamonds claim that a failure for a society to perceive a problem, and the failure of Arizonians to perceive a problem when they introduced these species. For instances the Red Borne grass was introduced to feed cattle, and now has grown uncontrollably and is responsible for hundreds of desert fires.

The reflection demonstrates the student was able to take abstract ideas from course material and provide concrete examples in his own community.

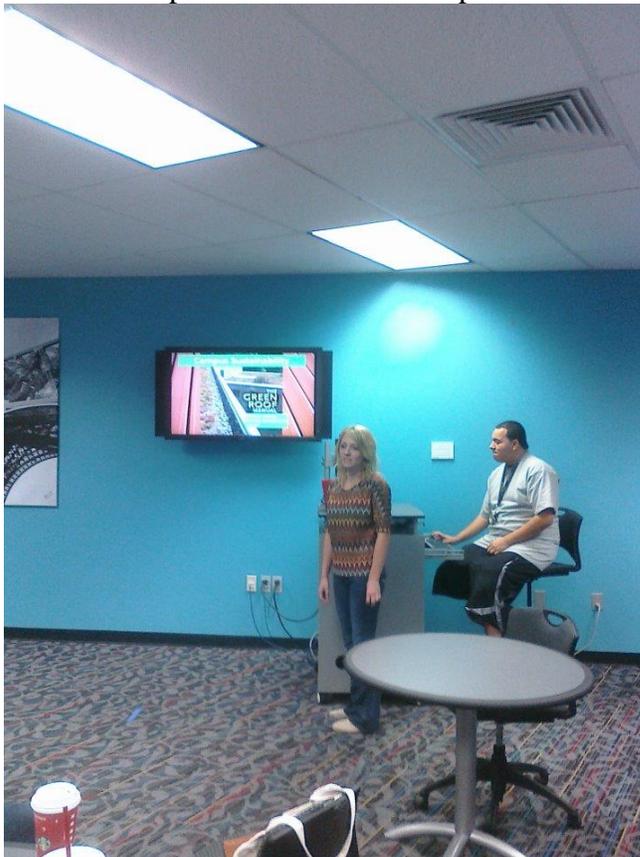


Figure 4 A group presentation

Learning cycle three was followed up with a project that analyzed the sustainability of Candler Gilbert Community College in reference to ideas present by Lester Brown in *Plan B 4.0: Mobilizing to Save Civilization* (Brown, 2009). In the same assigned groups, students surveyed the campus in order to note sustainable and unsustainable practices and to create a plan to make the campus more sustainable. This group project occurred over three class periods concluding with a formal presentation and individual reflection. In

both learning cycles I was able to observe students demonstrating the ability to self-organize, analyze, engage in research and articulate ideas in formal presentations.



Figure 5 CGCC Environmental Technology Center Gardens, fall 2011

Impact of Research

Grades and student retention were not the main focus of this study, although I was very amazed to discover that both improved from the previous year. In the fall of 2010 there was a retention rate of 66% with 56% of the students earning a grade of “C”, of which 36% received an “A”. In comparison to the fall of 2011 (both years began with the same number of students) when retention was 94% with 86% of the students earning a grade of “C”, and of which 52% received an “A”. This point is not to imply that there is a direct correlation between grades and learning. But, the findings are relevant to a political climate in higher education that is obsessed with accountability.

Overall, this paper demonstrates that a properly planned experiential model allows students the ability to overcome a tendency towards environmental nihilism, while developing as independent adult learners who transformed in their understanding of sustainability. In the words of an eighteen year old female reflecting on the course:

I gained greater understanding of why one should care about their impact on the environment. I learned about how nature regulates itself and every little part is important to the big picture. I also am aware now of the impact humans are having on it and how we should reevaluate how we live our lives to be more sustainable rather than what is comfortable.

In this reflection the student demonstrates a moral awareness of her relationship to nature.

Over the fifteen-week course, students began adopting terms such as, *forethought*, *accountability*, and *continued education* into their vocabulary, while coming up with practical solutions for environmental problems. As summarized by five students in the final focus group, sustainability is “being consciously aware of individual and community choices to conserve resources and the environment to ensure the education and well being of future generations”. Ultimately, this paper ought warrant a discussion regarding the importance of experiential learning at the community college level, while rethinking how environmental ethics is taught in higher education.



Figure 6 CGCC Environmental Technology Center Gardens, fall 2012

Reference List

- Beard, Colin, & Wilson, John P. (2002). *Experiential learning: A best practices handbook for educators and trainers* (Second ed.). Philadelphia: Kogan Page.
- Boud, David, Keogh, Rosemary, & Walker, David. (1985). Promoting reflection in learning: A model. In David Boud, Rosemary Keogh & David Walker (Eds.), *Reflection: Turning experience into learning*. New York: Nichols Publishing Company.
- Brookfield, Stephen D., & Holst, John D. (2011). *Radicalizing learning: Adult education for a just world*. San Francisco: Jossey-Bass
- Brown, Lester. (2009). *Plan b 4.0: Mobilizing to save civilization*. New York: W. W. Norton & Company.
- Cowan, John. (1998). *On becoming an innovative university teacher: Reflection in action*. Philadelphia: Open University Press.
- Creswell, John W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (Second ed.). Thousand Oaks: Sage Publications.
- Diamond, Jared. (2006). *Collapse: How societies choose to fall or succeed*. New York: Penguin Books.
- Ehrenfeld, John R. (2008). *Sustainability by design: A subversive strategy for transforming our consumer culture*. New Haven: Yale University Press.
- Gardner, Howard. (2006). *Multiple intelligences: New horizons*. New York: Basic Books.
- Giddens, Anthony. (1986). *The constitution of society: Outline of the theory of structuration*. Berkeley: University of California Press.
- Kamenetz, Anya. (2010). *DIY U: Edupunks, Edupreneurs, and the coming transformation of higher education*. White River Junction: Chelsea Green Publishing.
- Kolb, David A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs: Prentice-Hall, Inc.
- Larson, Brendon. (2011). *Metaphors for environmental sustainability: Redefining our relationships with nature* (Vol. Yale Press). New Haven.
- Leopold, Aldo. (1949). *A Sand County almanac and sketches here and there*. New York: Oxford University Press.
- Louv, Richard. (2006). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill: Algonquin Books of Chapel Hill.
- Louv, Richard. (2011). *The nature principle: Human restoration and the end of nature-deficit disorder*. Chapel Hill: Algonquin Books.
- Moon, Jennifer A. (2004). *A handbook of reflective and experiential learning: Theory and practice*. New York: RoutledgeFalmer.
- Orr, David. (2011). *Hope is an imperative: The essential David Orr*. Washington: Island Press.
- Shor, Ira. (1987). *Critical teaching and everyday life*. Chicago: The University of Chicago Press.
- Tood, Nancy Jack, & Todd, John. (1993). *From eco-cities to living machines: Principles of ecological design*. Berkeley: North Atlantic Books.
- Vella, Jane. (2002). *Learning to listen, learning to teach: The power of dialogue in educating adults*. San Francisco: Jossey-Bass.

