TEACHING SUSTAINABILITY EXPERIENTIALLY

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ABSTRACT

This paper focuses on teaching sustainability in the classroom. In it, I argue for a application of the experiential pedagogy to a kind of learning, for which experiential methods are not ordinarily used. But I believe most pedagogical scholars including those in ABSEL would not argue with my application. I also describe the course and examples of classroom activities, including cases, experiential exercises, and simulations. As I describe the course, I include some experiential activities I cannot use but experiential scholars interested in sustainability should consider.

PURPOSE AND BACKGROUND

The purpose of this paper is to present methods for teaching sustainability experientially. Sustainability is usually associated with environmental advocacy, at present more specifically associated with movements to reduce greenhouse gases, conserve energy and conserve water. Almost everyone agrees that sustainability should be a concern of business because: 1) businesses generates greenhouse gases, and it may be costly to stop, 2) conserving energy often reduces expenses for businesses, which increases profits, and 3) many businesses produce energy or manufacture technology associated with resources, energy, and/or water.

Although the term is overused, many serious scholars define sustainability similarly, as pursuing endeavors so that successful implementation satisfies the three pillars of sustainable climate change, sustainable in that the needs of the present generation are met without compromising the ability of future generations to meet their needs. The three pillars are improve the environment, reach community social goals and increase community financial wealth (Cahn, 2007; Frankel, 1998; World Commission on Environment and Development, 1987). According to Frankel (1998), this entails harmonizing economic, environmental, and social equity so that economic growth may be pursued in a manner consistent with environmental protection and social fairness.

Sustainability is a hot topic and many Universities are both trying to reduce their carbon-footprint (Greenreportcard.org, 2011) and develop curricula which focus on sustainability. Those include Arizona State, Devry, Duquense, and the University of Oregon. But it is a relatively new topic especially for business scholars, and there are relatively few scholarly articles dealing with how to teach the topic incorporating a business perspective. As evidence I performed a Proquest business search for the topic 'teaching sustainability' and the search yielded seven articles. A similar search for the topic 'teaching moral development' yielded seventy-four. ABSEL scholarship on the topic is sparse. A 'sustainability' search of the BLK revealed 11 hits from eight articles, only four focusing on environmental centered sustainability.

Yet, as indicated above the topic is being taught. And for those of us who are advocates of efforts to clean greenhouse gases, it needs to be taught at the college level. As (Hignite, 2011) argues, "because universities prepare most of the professionals who develop, lead, manage, work in, and otherwise influence society's institutions, higher education .... bears a profound moral responsibility to increase the awareness, knowledge, skills and values to create a just and sustainable future. Fully accomplishing this may be next to impossible, but Universities are (or at least should be) equipped to attempt to accomplish this extremely complex and difficult task. Regarding task difficulty, Sharma and Kearins (2011) say:

> … its three E foundations of economy, equity, and environment call for balancing values during decisions so as to achieve sustainability across all three pillars --- economic, social, environmental --- at the same time. With such a broad trans-disciplinary and long-term focus, sustainable development is prone to varying philosophical, ethical and disciplinary interpretations. Different social actors use their philosophies in ways that suit their ideologies and political agendas…. To achieve sustainability, transformations at least three levels --- individual, organization, and society --- have to take place. Institutions, social structures and relationships have to change to increasingly integrate social and environmental into economic planning and decision-making.

The remainder of this paper includes suggestions on how to teach such a complex topic at the University level. Again from an advocate's perspective, it would be ideal to teach this complex topic with multiple, varying, complex, and intense learning experiences, but I will concentrate (for the most part) on teaching it in one graduate course. The

remainder of his paper is in four sections. In the first and very brief section, I will provide an overview of the class, including its intentions and a summary of its parts including those that are not experiential. In case it needs to be said, these are my choices given my priorities. To a reasonable degree, I will present here what I intend to do. In the second section, I present how I want to handle the controversies associated with sustainability, and that section includes my arguments that my methodologies for dealing with the controversies are experiential. Section three includes cases I plan to include and why, and the last section includes a summaries of some available simulations and experiential exercises, including the ones I intend to use. This last section is less focused on what I will do, as it describes available experiential activities that I cannot use. Thus this section is kind of a library for instructors interested in experiential activities focusing on sustainability, some of which are presently being offered that cannot be contained by what most of us consider a course.

COURSE OVERVIEW

The course is a two-unit graduate course and is one of the courses available to all students from the University of Wisconsin-Whitewater's Social Responsibility Module. The course will first be offered in the Spring of 2012, and six weeks of the course will have been completed by the time this paper is presented. It takes place 3.25 hours a week for eight weeks. At the time of writing, course contains nine units or topics:

1. Introduction, extreme views, and controversies including a discussion of whether or not the presence of greenhouse gases is worth attending to as a society.
2. Supply chain considerations taught by a member of the UWW Supply Chain group.
3. Marketing considerations taught by a member of the Marketing department.
4. Implementation. This will include an outside assignment for students to review institutions that are successfully becoming more sustainable – including companies such as Kohls, Johnson Controls, Unilever and Marks and Spenser; Universities such as University of Wisconsin Madison, University of Wisconsin River Falls, and Loyola University of Chicago (Greenreportcard.org, 2011), and organizations that attend to building sustainable living space (Earthship, 2011, Synchronous Design, 2011, Zero Carbon Homes, 2011)). This unit also is likely to consist of students learning how to calculate a carbon footprint and the details of a cap and trade program (Chicago Carbon Exchange, 2009) and it may include the study of how different countries implement society-wide greenhouse gas reduction.
5. Finance considerations taught by a member of the Finance department
6. Sustainability from an Economist's perspective taught by a member of the Economics department.
7. Sustainability in the developing (vs. the developed) world, likely with cases.
8. The food industry as an example of an industry where sustainability efforts are important, chosen partially because there are available cases.
9. Sustainability from a variety of perspectives, taught with a stakeholder exercise.

Student performance will be assessed by participation (including quality of participation in the stakeholder exercise), essay exam results and perhaps presentations of institutions that are becoming successfully sustainable. The exams will include questions about the stakeholder exercise and carbon footprint exercises and the presentations by visiting faculty members. Although, there will be contributions by other faculty members and all contributing faculty members will have input for deciding course content, administratively, the course will be taught by one person.

TEACHING CONTROVERSIAL ISSUES – EXPERIENTIALLY

First I want to make my priorities for exposing controversies to students clear. I am interested in helping students refine their own opinions. It is not my priority to change minds or influence student opinions toward a pro-sustainability position (Shriastava, 2010).

I will focus on three controversies. The first involves whether climate change and the dangers associated with it exist. Especially in the United States, there are many who argue that dangers often associated with climate change are exaggerated and do not believe in the need to do anything about it (American Roundtable, 2007; Durkin, 2007; Lindzen, 2009). The 'don't panic' argument is supported by recent events that have proven eco-alarmists wrong, the facts that the Ozone layer is retreating and the fact that there is enough food for the world's population, as according to the Food and Agricultural Organization (2011), our hunger problem is more one of affordability than one of supply. In addition, there are those that argue that technology will solve any problems associated with atmospheric carbon, and the world does not have to pause and retreat in order to sustain itself (Nordhaus, 2011).

The second controversy concerns the degree to which extreme methods are necessary to reduce green house gases, methods which significantly change our priorities and alter the way we live. Those that argue such methods are needed include those who advocate a 'no growth economy' (Kalis, 2011; Martinez-Alier. 2009) and the perspective that EVERYTHING needs to be either100% organic or recycled (McDonough, 1998).

The third controversy involves arguments between developing and developed countries. Most in the

developed world want world-wide action toward battling climate change, while many in the developing world want poorer countries excused until their economies are developed enough to be able to spend the money (Holzer, 2010). Scholars are mixed on this issue. Aassan et al (2009) and Namen et al. (2009) argue that sustainable agricultural diversity improves economic conditions in the developing world. On the other hand, Adeoti (2008) argues that environmental efforts inhibit economic and social sustainability in Nigeria. The reader might wonder why I think this controversy is important. I believe it is in part because sustainability solutions are often different in different lands. In developed countries solutions are often technological while in developing countries, solutions include traditional endeavors that produce little or no carbon footprint such as organic farming and weaving without machines and transporting freight on the backs of animals.

These controversial issues are abstract or intellectual. Teaching such issues usually involves students being exposed to them and discussing perspectives. There are at least two traditional experiential teaching methods that can be used to teach controversial issues, the case method and exercises where different stakeholders with contrary opinions and priorities must make a decision or complete a project. I intend to use both those methods in this course. I propose a third, which I believe is not typically considered experiential. I simply will expose students to those controversial issues and ask them to write down their opinions. I'll ask them to participate in a discussion and when the discussion ends I will ask them to write down their opinions a second time taking into consideration other opinions they have heard. My goal is for opinions to become more refined, grounded in fact and complicated. In utilizing this process I believe students will go through an experiential cycle similar to the 'The four stage learning cycle' proposed by Kolb (Kolb, 1984). Expressing opinions is a concrete experience. After a discussion, students will be expected to think about what they said and consider other opinions, a process that involves reflection and should include some abstract reasoning. Restating their opinions should include a reformulation of opinions, which should be based on their reasoning. The reformulation can be thought of as active experimentation with ideas.

CASES

My goals for cases is to focus on situations where it appears impossible to pursue all three sustainability pillars harmoniously, where protecting the environment and maintaining social fairness would seem to hinder economic growth and vice versa. Two industries seem to fit the preferred situation. One is the food processing industry where efficient and profitable growth often creates greenhouse gases, and abuses both the land and labor. The other is land development, where growth might mean resource depletion and protecting the environment may inhibit economic growth.

EXERCISES AND SIMULATIONS

There are exercises and at least a few simulations which emphasize sustaining resources and/or protecting the environment, and I will use two types of exercises with the above foci in my course. The first type involves helping students to learn to calculate carbon footprints. They will learn to calculate personal carbon footprints and footprints for institutions. There are helpful websites for helping individuals calculate their own, for example, one sponsored by the Nature Conservancy (www.nature.org), and another which involves a game and a comparison between the player's country and great Britain is sponsored by www.zeroyourcarbon.com**.** There are also sites showing how individuals can reduce their own carbon footprint, for example, http://www.zeroyourcarbon.com.au/info/carbon_footprint/79/1. I also want students to learn to calculate a more complex footprint, the kind which businesses and other institutions use, in part because doing so will help them better understand all the variables that contribute to a carbon footprint including transportation costs, energy, material costs, and packaging. The resources I intend to use are provided by US Environmental Protection Agency (2008) and the British Standards Institute (2008).

The other kind of exercise I intend to use involves negotiations among stakeholders. Descriptions of experiential exercises involving stakeholder interactions appear fairly often in the experiential learning literature. Such exercises that deal with sustainability include *The Ecollaborative* (Welch and Murrray (2003), and *OneMBA* (Roome, 2005) as well as the one I intend to use (Collins and Kearins, 2007), which has no title.

Such an exercise is appropriate in today's complex environment which demands managerial sensitivity to a wide range of social concerns and settings, which means that decision makers have to take into account and balance a broad range of non-traditional interests and concerns (Chisolm and Warman, 2005; Roome, 2005). According to Collins and Kearins (2007), stakeholder/negotiation exercises foster joint working relationships and stimulate competitive imagination.

In their exercise, Collins and Kearins (2007) recommend a local issue for students to negotiate and for students to choose the focal issue. It's helpful for students to be interested and invested in the issue, and the issue should be simple enough so that so it can be dealt with adequately in available class time (for my class, less than four hours). Collins and Kearins (2007) offer choices as to whether or not students do their own prior-exercise research and whether or not to assign students as exercise facilitators, and they recommend articles for students to read on stakeholder engagement. The exercise should span

two class periods, the first for negotiations and the second during the next class period for debriefing. Participation should be graded according to the authors.

I want to discuss two other kinds experiential activities. The first type involves activities that take place outside the classroom and fill most of or more than a single course. I've found two such activities. The first of these is the Mustard Seed project (Reed, 2010). It features community-based projects initiated and managed by undergraduates who work in teams and collaborate with diverse stakeholders in the community. The projects originate from a course in Social Responsibility. Not all of the projects from the author (Reed, 2010) focus on the environment, but this model is included here because such projects could. The second (Truscheit and Otte, (2004/2005) is a role play of members of a fictional German electricity generating company who have to develop a new sustainable (defined as renewable energy) electricity generating strategy. Students apply into one of three departments (marketing, controlling or legal), receive instructions and background material, and work together to develop the comprehensive strategy. They then present their strategy. Individual students are assessed on their contribution and their actions during discussions and the presentation.

The second kind of experiential activity is the simulation. Two simulations follow the tragedy of the commons (Hardin, 1968) where individuals can derive personal benefits from a resource which is both renewable and depletable. If individuals take more than their share, it is then at the expense of the common good, and the resource becomes scarce, expensive and can disappear. This tragedy appears to be occurring today as many species of fish, land available for trees and farming, and water seem to be disappearing. The first of the simulations that reflect the tragedy principle is the The Ginseng Game (Cassidy and Brozik, 2009). This game takes about two hours to play and focuses on the Ginseng plant that grows in West Virginia. In the game, there are no winners and losers. At the end of the game, the number of Ginseng plants available are either the same as they were at the game's beginning or on their way to depletion. The second is The New Commons Game (Bredmeier, 1995). This takes about 90 minutes, with 6-24 players. Every team chooses privately how to exploit a common resource. As is typical with this kind of exercise, competitive choices maximize individual profit, but destroy the resource, and vice versa. Negotiations and other control mechanisms are provided to optimize the overall performance. The objective is to promote the understanding of the commons dilemma, to illustrate strategies to overcome social traps, and to foster empathy for persons operating in the real world. According to Urlich Creative Solutions (UCS Creative Solutions, 2011) this game has been updated recently and contains information about species extinction.

REFERENCES

ASU Sustainability Program (2009). www.schoolofsustainability.asu.edu/. Retrieved 9/30/09

Adeoti J. O. (2008). Environmental policy and industrial response in Nigeria. *International Journal of Technical Management and Sustainable Development*, Vol. 7 (2), 119-135.

American Roundtable (2007). http:// www.aproundtable.org/tps30info/globalwarmup.html . Retrieved 10/7/09.

Assam, J. K., Laminate, C. and Oberg, F. (2009). Environmental variability and vulnerable livelihoods: Minimizing risks and optimizing opportunities for poverty alleviation. *Journal of International Development* . Vol. 21 (3), 403-411.

Bredemeier, M. E. (1995). New Commons Game. *Simulation & Gaming*. Vol. 26 (1), 113-115.

British Standards Institute (2008). Guide to PAS (publicly available specific standards) 2050: How to assess the carbon footprint of goods and services. Manchester, UK: *British Standard Institute.*

Cahn, M. (2007). Indigenous entrepreneurship, culture and micro-enterprise in the pacific islands: Studies from Samoa. *Entrepreneurship and Regional Development*, Vol. 20, 1-18.

Cassidy, C. and Brozik, D. (2009). The Ginseng Game. *Developments in Business Simulations and Experiential Learning,* Vol. 36, 312-319.

Chicago Climate Exchange (2009). www.chicagoclimateexchange.com. Retrieved 8/26/09.

Collins, E. and Kearins, K. (2007). Exposing students to the potential and risks of stakeholder engagement when teaching sustainability: A classroom exercise. *Journal of Management Education*, Vol. 31(4), 521-540.

DeVry University (2011). www.devry.edu/. Retrieved 8/30/11.

Duquense University (2011). MBA in Sustainability: http://mba.sustainability.duq.edu/ Retrieved 8/30/11.

Durkin M. (2007). The great global warming swindle. BBC documentary; aired March, 2007. http:// www.greatglobalwarmingswindle.co.uk/. Retrieved 8/11/11.

Earthship (2011). http://www.earthship.net/ Retrieved 9/24/11.

Food and Agriculture Organization of the United Nations (2011). The state of food and agriculture 2010-2011, part II: World food and agriculture in review. http:// www.fao.org/publications/en/. Retrieved 10/13/11.

Frankel, C (1998). *In Earth's Company*. Gabriola Island BC: New Society Publishers.

Green Report Card (2011). http:// www.greenreportcard.org/. Retrieved 9/22,11.

Hardin G. (1968). Tragedy of the commons. *Science*, Vol. 162, 1243-1248.

Hinite, K. (2011). Will Sustainability take root. *Business Officer.* www.nacubo.org. Retrieved 8/30/11.

Holzer K. (2010) How to stay competitive in a world of carbon restrictions: Solutions for developing countries. *International Trade Forum.* Vol. 1, 28-29.

Johnson Controls (2009). www.johnsoncontrols.com/publish/us/en/sustainability/working_towards_a/we_are_green__always.html. Retrieved 9/06/2009.

Kallis, G. (2010). In defense of degrowth. *Ecological Economics, Vol.* 70, 873-880.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Kohls Sustainable Buildings (2011). http://www.kohlsgreenscene.com/Building/BuildingDesign.html. Retrieved 10/11/2011.

Lindzen, R. (2009). Resisting climate hysteria. *Climate Realists.* 7/26/2009. http://climaterealists.com/index.php?id=3771. Retrieved: 9/17/11.

Matinez-Alier, J., Pascual, U., Franck-Dominique, V., and Zaccai, E. (2010). Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm. Ecological Economics, Vol. 69, 1741-1747.

Marks and Spenser (2009) http://plana.marksandspencer.com/about/the-plan/sustainable-raw-materials/1/. Retrieved 9/06/2009.

McDonough, W. (1998). A Boat for Thoreau. In P. H. Werhane and Laura Westra (eds.), *The Business of Consumption*. Totawa MD: Rowman and Littlefield.

Namen, A. A., Bornstein, C. T., and Rosenhead, J. (2009). Robustness analysis for sustainable community development. *Journal of the Operational Research Society*. Vol. 60 (5), 587-597.

Nature Conservancy (2009). www.nature.org/initiatives/climatechange/calculator/?src=fI. Retrieved 9/01/2009.

Nordhaus, W. (2011). Designing a friendly space for technological change to slow global warming. *Energy Economics*, Vol. 33 (4) 665-673.

Reed, L. (2010). Mustard Seed as a means for creative problem solving, ethical decision making, stakeholder alliance, and leadership development through experiential learning and management development. *Developments in Business Simulations and Experiential Learning*, Vol. 37, 3120-320.

Roome, N. (2005). Teaching Sustainability in a global MBA: Insights from the OneMBA. *Business Strategy and the Environment*, Vol. 14, 160-171.

Sharma, A. and Kearnis, K. (2011). Interorganizational collaboration for regional sustainability: What happens when organizational representatives come together. *Journal of Applied Behavioral Science*., Vol. 47, 168-203.

Shrivastava, P. (2010). Pedagogy of passion for sustainability*, Academy of Management Learning and Development.* Vol. 9 (3), 443-455.

Syncronos Design (2011). http://www.buildingwithawareness.com/. Retrieved 9/14/11.

Truscheit, A. and Otte, C. (2004/2005). Sustainable games people play. *Greener Management International,* Vol. 48, 51-56.

UCS Creative Solutions (2011). http://www.agrarerdumwelt.ethz.ch/game/support/Vortrag_Transformation.pdf. Retrieved 10/11/2011.

Unilever Sustainability (2011). http://www.unilever.com/sustainability/. Retrieved 10/11/2011.

US Environmental Protection Agency (2008). Climate leaders greenhouse gas inventory protocol offset methodology. http://www.epa.gov/climatechange/emissions/index.html. Retrieved 9/27/11.

University of Oregon Sustainability Leadership Program. http://sustain.uoregon.edu/. Retrieved 10/11/2011.

Welch, M. A. and Murray, D. (2003). The Ecollaborative: Teaching sustainability through critical pedagogy. *Journal of Management Education,* Vol. 27 (2), 220-235.

World Commission on Environment and Development (Brundtland Commission, 1987). *Our common future.* Oxford, UK: Oxford University Press.

Zero your carbon (2009). http://www.zeroyourcarbon.com.au/info/carbon_footprint/79/1. Retrieved 9/1/09.

Zero carbon house (2011). http://www.zerocarbonhouse.com/Home.aspx. Retrieved 10/11/2011.