Abstract

This paper describes how learning sustainability can be integrated into skills-based courses by combining the elements of a new model of sustainability pedagogy with skills-based content. The author argues that educators have a moral responsibility to teach sustainability in all aspects of higher education, including skills-based courses. Using a thematic approach is one way that educators can integrate sustainability learning into skills-based courses.

This paper provides a model for integrating sustainability pedagogy within existing courses designed to teach specific skills. Grounded in a literature base on the nature of sustainability pedagogy, this article describes the process of integrating a sustainability theme into one skills-based course, academic writing. Shifting to a sustainability theme such as sustainable food systems allowed for purposeful learning about sustainability while at the same time engaged students’ interest and led to improved academic writing skills.

Introduction

Are skills-based courses and sustainability compatible? At first glance it may seem that within a skills-based course such as writing, math, or a foreign language, there is neither time nor adequate preparation for teaching something as complex as sustainability. Sustainability courses are often relegated to the areas of the academy such as environmental science, engineering, architecture, agriculture, or urban planning. But considering the urgent social and ecological problems of our world today, postsecondary educators may want to think more broadly about preparing students to live and work more sustainably in the world. We must begin to educate all students to be able to address complex issues and make effective changes. Learners must be equipped not only with knowledge, but with the skills, values and attitudes needed to address current ecological and social realities (McKeown 2002). Education, after all, is a strong influence on the direction of our world as it profoundly shapes learners’ worldviews, economic potential, attitudes and participation levels in the community, decision-making, and interactions with the ecosystem (McKeown & Hopkins 2002). All students should have the opportunity to leave colleges and universities having gained an understanding of
their civic responsibility in the regeneration and sustaining of local places, and should feel empowered to make decisions about their lives and work based on a sense of responsibility and care. While in recent years, institutions of postsecondary education everywhere are indeed recognizing that they do have an ethical responsibility towards the goal of sustainability (Leal Filho 2002), a 2008 survey of colleges and universities found that teaching and learning about sustainability has been in decline since 2001 (Carlson 2008).

Skills-based courses teach content beyond skills, whether or not this is explicitly expressed. An accounting course may focus on corporate case studies, while a French language course may focus on current events in French-speaking countries. Skills-based courses could reach further, however, to address sustainability issues such as global warming, the deepening divisions in wealth and well being, the loss of local economies and cultures, deforestation, appropriate technology, community food security, and the toxic pollution of air, watersheds and soil. While skills-based courses and sustainability can be compatible, this combination first requires a shift in thinking about how we educate.

Postsecondary educators are largely realizing that teaching sustainability requires a shift of educational culture to holistic, systemic, connective and ecological ways of thinking and teaching (Sterling 2002). Wals and Jickering (2002) acknowledge that teaching sustainability requires the integration of theory and practice into systemic praxis. Orr (2004) suggests that in order for postsecondary education to move towards sustainability, it must also emphasize learning that teaches citizenship in the biotic community and the responsibility of human relationships within that community. This responsibility must be rooted in learning that is practical; community-based and problem oriented.

Most universities require disciplinary skill-based courses such as writing, math, public speaking, and foreign languages as part of undergraduate general education and these skills-based courses have specific learning goals that must be achieved within a specific time frame, usually one term. While a shift toward a more holistic, practical, and community-based way of thinking about postsecondary education is an important goal, the disciplinary structure of academia often remains a barrier to teaching sustainability. Therefore, new ways of designing skills-based courses will be important to this end. Based on this author’s experience teaching the same skills-based course over four years, one way that sustainability and skills-based courses can be successfully integrated is by implementing the Burns model of sustainability pedagogy, which applies a thematic approach to learning sustainability. The following offers an overview of the key elements of the Burns model of sustainability pedagogy, a description of the skills-based course in question, and some specific ideas, examples and challenges for creating or redesigning courses that effectively teach sustainability and skills.
The Burns Model of Sustainability Pedagogy: Key elements

The Burns model of sustainability pedagogy is an ecological teaching design that brings together content that is thematic and multidisciplinary, perspectives that are diverse and critically question dominant paradigms and practices, a process that is participatory and experiential, and a context that is place-based (see Fig. 1). As such, sustainability pedagogy holds multiple goals for learners. Through an ecological course design, sustainability pedagogy seeks to: (a) increase learners’ systemic understanding of 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 and experience (process); and (d) increase learners’ understanding of and connection with the geographical place and the community in which they live (context). The ultimate purpose of sustainability pedagogy is to empower and inspire learners to be able to solve complex problems and make changes that regenerate and sustain places and communities. These goals are in line with UNESCO’s Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability (2005).

Dimension I: Content

The first dimension of the Burns model of Sustainability Pedagogy is Content. The objectives of a course can be reoriented to sustainability in a multidisciplinary way through its content. The choice of a sustainability theme can allow learners to explore a sustainability topic in a multidimensional way, while at the same time learning new skills. Sustainability content (information, issues, perspectives, connections, beliefs, and values to be gained), can be centered around a specific sustainability learning theme.

The current Western mechanistic worldview and language typically cause us to perpetuate dichotomies such as local/global, humans/nature, cause/effect, and create categorizations such as political, economic, and social (Sterling 2002). As a result, Sterling points out, “we often fail to see connections and patterns” (p. 16). In contrast, Smith and Williams (1999) emphasize that education must involve a cultural shift that takes into account “the ineluctable relationship between specific biosystems and culture” (p. 4). Learners must be introduced to a holistic understanding of pertinent issues because, as Dresner and Seamans Blatner (2006) note, “… policy decisions reflect social values, political considerations, psychology, economics, and global processes.” In order to be equipped to understand and make decisions about important issues that face local communities, students must learn about these issues in a non-fragmented manner. In order to fully understand and address the interrelated issues we are facing today, course content must therefore provide a multidisciplinary approach to learning sustai-
nability. Focusing on one sustainability theme in a skills-based course can pro-
vide this approach.

Fig. 1: The Burns model of Sustainability Pedagogy

Dimension II: Perspectives

A second dimension of the Burns model of sustainability pedagogy is that diverse perspectives must be incorporated into the design of a course. When incorporating a sustainability theme into a course, diverse perspectives should be included in order to provide multiple ways of understanding a sustainability issue. This includes questioning and reflecting on dominant ways of seeing the world. Cortese (2005) posits that doing so requires reflection on the systemic causes of unsustainable practices, noting that in a world where physical, social, ecological and economic impacts are often largely invisible, it is important to make these impacts visible. By questioning and examining dominant ways of seeing the world, sustainability pedagogy recognizes that many aspects of ecological crises can be attributed to human behavior and are cultural in nature (Bowers 1999). Without questioning and criti-
quing the underlying cultural assumptions and economic and power relationships that create unsustainable and harmful practices, there can be little hope of change.
Problems within local communities and places are complex and not easily understood from a single perspective. According to Dresner and Seamans Blatner, (2006) the types of problems that are routinely encountered in life are fragmented and therefore require the learner to consider information about the problem, and adjust perceptions about the problem as more information is gathered. Many perspectives are therefore needed in order to interpret the information, and there is no single right answer. Learners must identify multiple stakeholder perspectives, positions, and preferred solutions. Cortese (2005) suggests that including a variety of less-heard perspectives including intergenerational, multicultural, local and ecological perspectives will be important to the process of understanding local issues.

Dimension III: Process

The third dimension of the Burns model of sustainability pedagogy is process. In this model, process signifies opportunities for direct participation and experiential learning. In adopting thematic sustainability content, and by challenging dominant assumptions and power structures and considering diverse perspectives, sustainability pedagogy is inherently focused on change, and making change requires engagement with one’s self, with others, and with places. Within a sustainability paradigm, change is viewed as finding new ways (or adopting more traditional ways) of living and working so that human systems are in harmony and balance with ecological systems. This change will require a transformational learning process that will prepare students to take action for sustainable change.

According to Cortese (2005), sustainability emphasizes active, experiential, and participatory learning. Serrano (2000) posits that participatory and empowering learning helps build the capacity and power of people to confront problems and change the present situation. This capacity building and empowerment can be specifically expressed as increasing learners’ civic responsibility and desire to work for sustainability. Kaza (1999) suggests that learners must be given the opportunity to engage in the issues, in order to positively apply their feelings to a relevant topic of concern, thereby participating in transforming their world. Service-learning, due to its participatory and experiential nature with goals of civic engagement and leadership, serves as an excellent application of sustainability pedagogy. Steinke, Fitch, Johnson and Waldstein (2002) explain that a sustainable democracy depends on the active engagement of an enlightened citizenry and that service-learning may provide a particularly effective way to give learners a sense of responsibility for civic engagement.

Dimension IV: Context

Context is central to thematic sustainability content, critical questioning and understanding diverse perspectives, and the process of active learning, and is thus an es-
sential dimension of the Burns model of sustainability pedagogy. In order for engagement to take place, effective sustainability pedagogy must be rooted in the place where learning is happening. Therefore, the context of sustainability teaching and learning is critical. According to Cortese (2005) the goal of sustainability education is working towards healthy, socially vibrant, economically secure and environmentally sustainable places. Place-based learning is therefore an application that specifies the importance of context.

Place-based learning specifically focuses on “how the local landscape, community infrastructure, watersheds, and cultural traditions all interact and shape each other” (Sobel 2004, p. 9). By making use of the history, folk, culture, social problems, economics and aesthetics of a community, place-based learning seeks to create opportunities for learners to be actively involved in confronting and grappling with issues of bioregional sustainability. In addition, place-based learning not only incorporates projects that actively connect learners to the local community (Sobel 2004) but questions relationships within that community. Bowers (1999) argues that if educators are not introducing students to a place-based ecological understanding of viewing relationships, then they are maintaining the status quo, which socializes learners to industrial revolution agenda of using technology to exploit and control the environment. Place-based education not only helps learners understand who they are, but to value the places they live and thus to value themselves within that place.

Dimension V: Design

Fifth and finally, the central dimension of the Burns model of sustainability pedagogy is design. The design of a course that is focused on sustainability is an important dimension because this design weaves together the other four dimensions of the pedagogical model. This design is ecological because the dimensions interact with and build on one another. Rather than forming a linear relationship, these dimensions form a web of interrelationships. The design is based on the goals of the Burns model of sustainability pedagogy, but reflects a holistic approach to reaching them. An ecological design reflects sustainability by: not separating knowledge into disciplines, not separating cause from effect, not separating feelings and knowledge, and not perpetuating the standard of humans as separate from the rest of the biological world (Orr 1992). All the dimensions of the Burns model (content, perspectives, process, and context) are linked and interconnected by the ecological design, which is fundamental to providing opportunities to learn sustainability as multidimensional, complex, and meaningful.

Ecological design, according to Hemenway (2000), includes five basic steps which include: (1) observation, (2) visioning, (3) planning, (4) development, and (5) implementation. In the first step, observation, we can begin to ask, what do we have to work with and what are the conditions and constraints? This is the
stage in which an educator should consider what salient sustainability theme could reasonably be incorporated into a course. This includes considering what community and campus resources are readily available can be integrated, and what constraints might apply to instituting this theme. Creating an asset map, lists, or charts may be helpful.

The second step, visioning, includes asking: What should the design do? How should it feel? This includes considering what the most important outcomes of the course will be. At this point, narrowing the sustainability topic will be essential. Choosing to explore one theme in detail will weave together many goals and will create a focal point that is not overwhelming. Considering relationship building between learners and the tone of the course are also important at this stage.

The third step, planning, involves asking: What do we need to implement our ideas? How should the pieces be assembled? At this point the educator can consider what texts, community resources, field visits, speakers, and classroom activities can be incorporated into the course in order to effectively teach sustainability through the chosen theme. Community projects should be carefully chosen for proximity, applicability, and time/energy of the community organization. A detailed consideration of how to incorporate diverse perspectives, active participation, and place-based understanding is key at this point.

In the fourth stage of development, it is important to consider what the design will look like and how it will be implemented. This stage involves focusing on the details of the design and how content, perspectives, process, and context will be incorporated on a day-by-day basis. This involves making decisions about assignments and learning activities. It also involves writing a syllabus that reflects the ecological design of the course and the chosen sustainability theme. Will there be weekly themes? Will all learning center around one main project? How will the learning be structured and sequenced?

The fifth stage, implementation, involves teaching the course, and in doing so, making adjustments based on further observation, visioning, planning, and development to enhance sustainability learning. Implementing the design also involves assessing whether or not the design is flexible enough to meet potential surprises in the classroom. Assessment provides ongoing opportunities for development of the course, and changes to the design.

The Burns model of Sustainability Pedagogy provides an ecological course design process brings together content that is thematic and multidisciplinary, perspectives that are diverse and critically question dominant paradigms and practices, a process that is participatory and experiential, and a context that is place-based. The Burns model of sustainability pedagogy can be one way to effectively integrate sustainability learning within skills-based courses.
One Example of Integrating Sustainability into a Skills-Based Course

The skills-based course that this author teaches is an introductory level semester-long college writing course at a small private Catholic university in the Pacific Northwest region of the United States. The skills-based goals of this course are for students to learn to write several kinds of academic essays, and to improve their communication skills. The primary assignments of this course include reading, reflective journal writing, in-class discussions based on the reading, four major essays, and several short essays.

This course was redesigned by first deciding on the content, or sustainability theme. The theme sustainable local food systems became readily apparent, because Portland Oregon, where the course is located, has a thriving local food system, and because of the author’s own community involvement with this issue. A second step was to consider new goals for the course. In addition to the skills-based goals above, additional goals for students were: to know more about, and feel more connected to, the place that they live (context); to understand how food production can impact the sustainability of places/communities in complex ways (systemic understanding of content); to think critically about how food is produced and who has access to locally-produced food (perspectives); to understand how their own choices relate to sustainability (process); and to know how food systems are related to the sustainability of local ecology, economy, culture and communities (systemic understanding of content). Some explanation about this theme was included in the syllabus.

In developing the course content based on both the sustainability learning goals and the skills-based learning goals, the two were integrated as much as possible. For example, students were given a list of articles related to community food systems to read for weekly reflective journal writing assignments and discussions. For each article, students responded to several specific guiding questions. The major writing assignments in the course were also changed to reflect this sustainability theme. For example, for an expository essay assignment, students visited and wrote about a local farmers’ market. For another assignment, students researched and wrote about one local community organization that is enhancing the local food system in some way. Students have written about a local educational farm, a community grocery store, and nonprofit organizations that promote gardening and food security. For an interpretive analysis essay, students developed their own analysis of the differences between global food systems and sustainable local food systems. Students have written about the difference in food miles, ecological stewardship, marketing, and economic impacts on local communities. For an argument essay assignment, students created structured arguments related to the theme on topics such as genetically modified food, meat production, developing local economies and immigrant farm workers.
In addition, other writing projects and class activities were developed that related to the community food systems theme and the identified sustainability goals. In one class session, students visit a nearby grocery store that sells locally produced food. In small “family” groups students were instructed to buy a lunch of locally produced products on 3 dollars, the typical amount a minimum wage worker in the U.S might be able to spend per meal on her whole family. Students then wrote and reflected on the difficulty in accessing fresh local products on a low-income wage. Guest speakers were invited to other class sessions. The general manager of the University’s food provider, a company that spends about 40% of their budget on local products, spoke to students about his relationships with local farmers. An urban farmer also spoke about the development of his Community Supported Agriculture (CSA). A staff member from a local food bank spoke to students about community food security and the root causes of hunger. A local food scavenger hunt, a neighborhood food assessment, and films have been other activities that have served as springboards for reflection, writing and discussion about sustainable food systems. Assigned readings and classroom/community activities provided a wide range of perspectives on the topic of community food systems. Indeed, discussions on the topic were rich and often delved into politics, economics, ecology, history, community, and culture.

Course Design: Recommendations and Challenges

When creating or redesigning a skills-based course to incorporate a sustainability theme, the choice of theme is a major element of the design. Sustainability themes can encompass a wide variety of topics but a good place to start would be identifying an important issue in the place that one lives. Undoubtedly, places are a rich learning ground for sustainability. Direct experience within a place can allow for a greater understanding of relationships within that place, and can help identify and change exploitative patterns. A toxic river could be incentive for a healthy watershed theme; a new or controversial renewable energy project in the local community could provide a backdrop for a global warming theme. Immigration controversy within a community could lead to a theme about economic globalization and the alternate local economy within that community. Any sustainability theme allows for a systemic and multi-disciplinary exploration of the topic if learners are exposed to a variety of perspectives on the theme. Assigned readings are one way to introduce a variety of perspectives, but local voices are an especially important part of place-based learning. In addition to indigenous, elderly, low-income and minority members and leaders of the community, staff and faculty “experts” on the theme should not be overlooked as guest speakers on the theme. Building in opportunities for structured controversy can be an especially good way for students to learn about the realities of a particular sustainability issue in their community and can introduce issues of power and privilege.
Linking students to sustainability through participation in a community project can be an excellent way to introduce learner participation that goes beyond reading, writing and discussion in the classroom. Community projects provide practical application and opportunities to practice skills that are being developed within skills-based courses. Depending on the sustainability theme, any number of community projects could be undertaken by skills-based sustainability courses: Grant-writing skills can be learned by working with a local non-profit organization; Students of public speaking could present speeches to a local governmental council or at an educational forum; Art and music courses could focus on sustainable community-building by bringing together diverse elements of the community for music making or the creation of community art such as a mural. Place-based participation will enhance sustainability learning and allow learners to become engaged in what they are learning about, while practicing new skills.

Despite the benefits, implementing a sustainability theme into a skills-based course is not without challenges. It can be time consuming to create or redesign a course based on a sustainability theme, especially if the course is to be community-based. Time and transportation can also be challenges to community-based learning. Inviting guest speakers to class, and taking field trips on campus can help mitigate this issue. In addition, the adoption of a sustainability theme may place a professor in the uncomfortable place of not knowing all the answers. Allowing for a sense of learning that unfolds within a process can be uncomfortable risk. However, learning with students can also provide a rich ground from which to grow a sense of community within the classroom and to create what “Freire (1998) describes as “continuous transformation through which [students] become authentic subjects of the construction and reconstruction of what is being taught, side by side with the teacher, who is subject to the same process” (p. 33).

Balancing the course goals of sustainability learning and skill building can also be challenging. Not trying to do too much at once will be an important element in any combination of skills and sustainability. Wisely choosing and creating learning experiences and assignments for students, or allowing for co-creation of these experiences, is an aspect of course design that benefits from multiple applications of a course.

Another challenge is that students come to a skills-based course with varying levels of the skill they are learning in the course, and will likely have varying levels of interest in sustainability. Integrating the sustainability theme into the skills-based course goals as much as possible will be an important element in mitigating student frustrations. The course can be framed in such a way that sustainability is not a separate or additional thing to learn but rather an important topic to focus on in which to learn the required skills. Communicating the reasons for learning sustainability will be important. In addition, community building within the classroom, especially within the first weeks of a term, will be key to engaging students in the theme and the skills. Early activities that can be done
in pairs and small groups or which help students learn each other’s names can all foster a sense of community and confidence within the classroom, enhancing learning of both sustainability and skills.

**Conclusion**

Sustainability and skills-based courses can be compatible and should be considered by more postsecondary educators. In this author’s experience, most students not only have appreciated learning about a sustainability topic that affects their daily lives, but also have improved their writing skills in the process. Applying sustainability pedagogy throughout postsecondary education, including within skills-based courses, is important to the development of citizens who are empowered to take action for the regeneration and sustainability of local communities and ecosystems. Skills-based courses may in fact be a particularly good fit for a sustainability focus, considering the practical nature of learning skills, and the participatory nature of sustainability pedagogy. As sustainability issues permeate more and more postsecondary courses, the importance of these issues is highlighted for students. Skills-based courses can be an important part of this educational process, carrying the message that sustainability is not relegated to a single department, but can indeed benefit us all.

**References**


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