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The Role of Community College Faculty in Teaching and Learning for Sustainable Development

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THE ROLE OF COMMUNITY COLLEGE FACULTY IN TEACHING AND LEARNING FOR SUSTAINABLE DEVELOPMENT

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Anouchka Rachelson

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To: Interim Dean Delia Garcia
College of Education

This dissertation, written by Anouchka Rachelson, and entitled The Role of Community College Faculty in Teaching and Learning for Sustainable Development, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Roger Geertz Gonzalez

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Glenda Droogsma Musoba

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Benjamin Baez, Major Professor

Date of Defense: November 10, 2010

The dissertation of Anouchka Rachelson is approved.

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Interim Dean Delia Garcia
College of Education

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Interim Dean Kevin O'Shea
University Graduate School

Florida International University, 2010

DEDICATION

To my family, thank you for your patience.

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The intellectual seed for this dissertation was planted by Dr. Robert Farrell, who introduced me to the issue of sustainability in year one of my doctoral program and to the writings of Thomas Berry, David Orr, and Stephen Sterling. Driving home after class one night, I realized that this would become the topic of my study.

My committee members guided me over the course of the program. Dr. Geertz Gonzalez provided valuable insights into the field of higher education nationally as well as internationally. Dr. Hilary Landorf offered clear constructive criticism, a global perspective, and suggestions regarding education for sustainable development.
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ABSTRACT OF THE DISSERTATION

THE ROLE OF COMMUNITY COLLEGE FACULTY IN TEACHING AND LEARNING FOR SUSTAINABLE DEVELOPMENT

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Professor Benjamin Baez, Major Professor

The purpose of this study was to explore the attitudes, beliefs, and practices of community college professors regarding education for sustainable development (ESD). In-depth interviews with 14 professors from different disciplines were conducted. The participants taught at Miami Dade College, Florida, a Talloires Declaration signatory since 2006, and all had attended Green Studies professional development workshops. Written documents such as assignments and samples of student work were used for triangulation. The annual report of the college's Earth Ethics Institute and its Web site served as additional sources. The interviews were recorded, transcribed, and analyzed for common themes. The Talloires Declaration's 10-point action plan and the key characteristics of ESD (UN DESD, 2006) served as the conceptual framework.

The study found that the professors considered ESD an essential issue. The majority discussed the economic and social aspects of ESD; however, the environmental aspect was mentioned most frequently. The professors' conceptualizations of ESD were influenced by their experiences and evidenced by the metaphors they used. Although their engagement with ESD differed, the professors expressed optimism toward ESD

related teaching and learning. They regarded ESD as compatible with their subjects, and most had already been infusing sustainability into their courses or planned to do so. Additionally, the participants' teaching practices reflected many of the characteristics of ESD. Even though the professors considered ESD challenging, they believed that they could make contributions to the college's effort. The metaphor of "Planting a Seed" was frequently used to describe this holistic approach. The study also found that many professors regarded interpersonal relationships and communication significant factors for the advancement of ESD.

The participants described several challenges to integrating ESD at their college. These related to time constraints, density of curriculum, institutional size and fragmentation, dearth of administrative support and incentives, students' lack of academic preparation and sustainability awareness, students' inability to focus on ESD because of personal, social, or economic circumstances, and professors' frustration about a divisive atmosphere as a result of their engagement with sustainability. Despite these obstacles, the professors believed that ESD could be successfully woven into the community college experience.

TABLE OF CONTENTS

LIST OF ACRONYMS

AASHE	Association for the Advancement of Sustainability in Higher Education
EEI	Earth Ethics Institute at Miami Dade College
EFS	Education for Sustainability
ESD	Education for Sustainable Development
ESL	English as a Second Language
MDC	Miami Dade College
UN DESD	United Nations Decade of Education for Sustainable Development

CHAPTER I

INTRODUCTION

> We stand at a critical moment in Earth's history, a time when humanity must choose its future…We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace.
>
> (Earth Charter Initiative, 2000)

This study seeks to explore how faculty members at community colleges in the United States are interpreting the challenge of *education for sustainable development* (ESD). This chapter presents the background to the study, statement of the problem, purpose of the study, significance of the study, and a rationale. These are followed by the theoretical framework, definitions of key terms, the research questions, delimitations, and a brief introduction of the researcher.

Background to the Study

Our planet's natural systems are being depleted and degraded at a disturbing rate while the population is increasing rapidly. Today, as I am submitting this dissertation, the official world population count stands at almost 6,876,902,755 (U.S. Census Bureau, 2010), which is almost 120 million more than last year. It is incomprehensible how so many people can inhabit the same space that a mere 310 million had to share in the year 1000 AD (Leonard, 2006). In the year 2020, when my youngest child hopefully graduates from college, it is projected that 7,667,090,000 people will live on this planet (United Nations Population Division, 2006). The Earth will not be able to sustain so many people without serious consequences.

The United Nations has officially declared the period of 2005-2014 as the Decade of Education for Sustainable Development (UN DESD), and partially as a result of this

international consensus, ESD has emerged as one of the critical issues in higher education abroad as well as in the United States. In fact, in their 2005-1 *Highlights Report*, GlobeScan published the results of a worldwide survey of sustainability specialists, stating that the experts considered "education" as the most urgent social area that needed to be addressed in order to transition to sustainable development (GlobeScan, 2005, p. 5). A publication by the Society of College and University Planning (SCUP) asserts that mounting evidence about the impact of humans on climate change will only increase the demand for higher education institutions to become involved in transforming human behavior toward a more sustainable lifestyle (SCUP, 2006). Yet, if one examines the most educated societies today, one quickly finds that they "leave the deepest ecological footprints" (Hopkins & McKeown, 1999, p. 25) because their consumption patterns contribute to rapid degradation of the environment worldwide. This pattern cannot continue indefinitely. In short, education must be reoriented toward a "sustainable future" (Tailloires Declaration, 1990); one in which resources are no longer consumed until they are depleted and in which our children and their offspring can live healthy, productive, and fulfilling lives.

Although advertisers and media reports make it seem as though "green living" and "sustainability" embody a new trend, the idea is far from new. Edwards (2005) traces the beginning of what he terms the "Sustainability Revolution" to the United Nations Conference on Human Development in Stockholm, Sweden, in 1972. A year earlier, climate scientists had gathered in Stockholm at a conference titled "Study of Man's Impact on Climate" and produced a report in which they delineated the risks of future climate change and possible consequences (Weart, 2003). The delegates of the United

Nations conference were required to read this paper; and, acknowledging the convincing data, they devised a cooperative research program focusing on the environment and climate. As a result, the Global Atmospheric Research Program, which had formed in 1967, initiated an extensive series of experiments that involved many different governments and a variety of academic institutions. The Stockholm Conference also prompted the founding of the United Nations Environmental Program (UNEP) in 1974, which is charged with fostering collaboration among nations and leading the international community toward improving people's quality of life while considering the environment and generations to come.

According to Edwards (2005), the idea of sustainability in its present-day form took shape when the United Nations created The World Commission on Environment and Development (WCED), led by the former prime minister of Norway, Gro Harlem, in 1983. The idea gained further momentum when the WCED published the Brundtland Report *Our Common Future* (World Commission, 1987), a seminal document that named the tremendous poverty of developing nations and the unsustainable production and consumption patterns of the developed nations as the primary culprits of grave global environmental problems (Federal Office for Spatial Development, n.d.). The Brundtland Report produced a framework that sought to protect the world's ecosystems while simultaneously considering economic development and issues of social justice. It clearly stated that sustainable development (SD) was viable if the necessary political and institutional transformations were made (Common & Stagl, 2005). The Venn diagram on the next page depicts the three aspects of sustainable development (Figure 1).

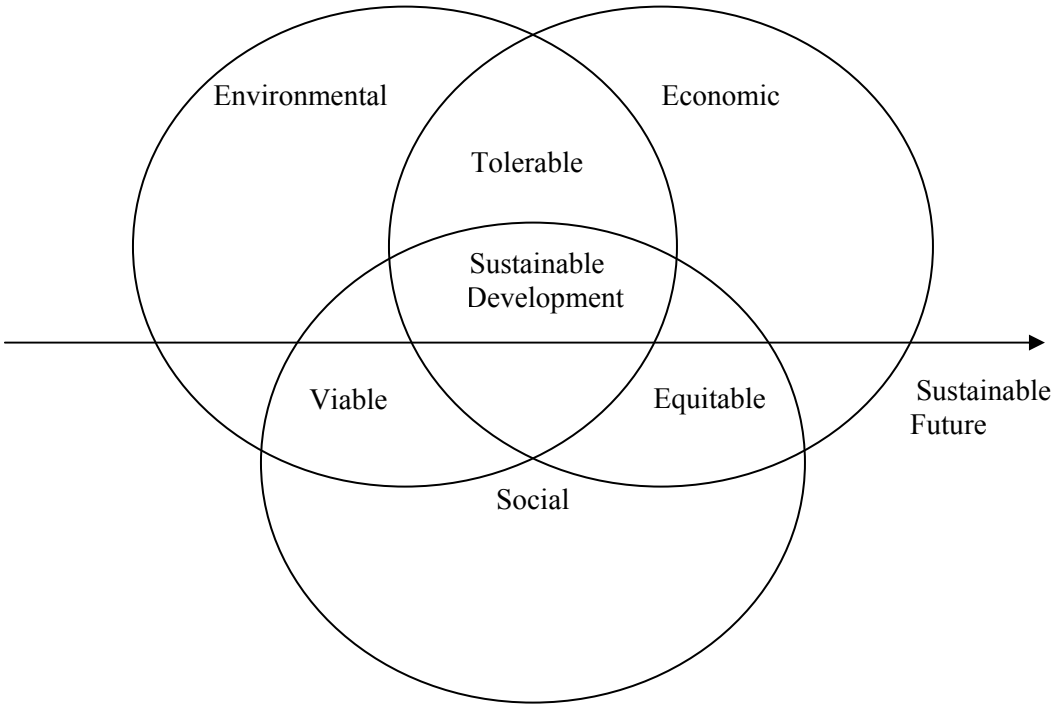

Figure 1. A model of sustainable development representing the interconnected nature of environmental, economic, and social aspects as a prerequisite for a sustainable future. Adapted from commonly available models.

The next milestone for the sustainability movement was reached at the 1992 Earth Summit in Rio de Janeiro, Brazil, at which 182 world leaders and many non-governmental organizations gathered to recommend and decide on further actions. Aside from signing several reports, the delegates adopted Agenda 21, a master plan for achieving sustainable development in the 21st century (Earth Summit, n.d.). In the meantime, a group of international university presidents, rectors, and chancellors had gathered in Talloires, France, to express their deep concern "about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources" (Association of University Leaders for a Sustainable Future, Appendix A). Together they developed and subsequently signed the Talloires Declaration, a 10-point

framework that delineates actions to be taken by universities everywhere in an effort to respond to the immense challenges of unsustainable development. Signatories of the declaration agreed to:

1. Increase Awareness of Environmentally Sustainable Development
2. Create an Institutional Culture of Sustainability
3. Educate for Environmentally Responsible Citizenship
4. Foster Environmental Literacy for All
5. Practice Institutional Ecology
6. Involve All Stakeholders
7. Collaborate for Interdisciplinary Approaches
8. Enhance Capacity of Primary and Secondary Schools
9. Broaden Service and Outreach Nationally and Internationally
10. Maintain the Movement

Statement of the Problem

Even though it is still relatively low on the priority lists of most nations, ESD has gradually gained momentum since the 1992 Rio Earth Summit. However, it still has not reached the point where sustainable development is regarded as a key principle for organizing the economy or education (Calder & Clugston, 2003). Many scholars agree that higher education is a perfect place to initiate changes, develop policies, and influence future generations. For example, the 2005 report on environmental literacy in America, published by the National Environmental Education and Training Foundation, states that more than half of all American adults will spend some time in higher education and that

these institutions are "ideal" places to expose students to issues concerning the environment (National Environmental Education and Training Foundation, p. 94).

As Herremans and Reid (2002) note, signing a sustainability declaration is one thing, but implementing a broad framework into actual classroom work requires a different level of commitment. According to these scholars, improvement can begin when educators focus on those issues that are most likely to motivate students to see themselves in the role of citizens who accept responsibility for the environment. Instructors need to show students how an abstract concept such as sustainability can apply to daily life and shape policymaking. Teaching students to consider environmental, social, and economic viewpoints can be constructive in helping students understand how sustainability applies to real situations.

Yet, few institutions have committed themselves to teaching sustainability, and even those that have signed official documents, such as the Talloires Declaration or the Halifax Declaration, are just beginning to implement changes in a significant manner. For the most part, colleges and universities continue to conduct their daily affairs as if they are not convinced that their role is to educate students for a future that will be defined by harsh realities. According to Hawken (2007), our generation will be the first to experience the world population doubling in a lifetime, which means that by 2050 every person on the planet will have only half of today's available resources. As Newman writes, "Educators are now teaching learners whose prospects seem to be darkening year on year" (2009, p. 99). The world is changing rapidly, and higher education institutions, which are charged with the task of creating, transforming, and transmitting knowledge, must catch up quickly.

Many notable initiatives promoting sustainability are currently under way at university and college campuses around the country. The electronic bulletin issued by the Association for the Advancement of Sustainability in Higher Education (AASHE), for example, highlights individual institutions' water conservation efforts, waste reduction programs, energy efficiency policies, and even a foodservice sustainability award. In addition, the bulletin features links to articles that inform about excellence in green building curriculum awards and grants. A trend toward sustainability is clearly visible when it comes to the more tangible aspects of campus greening and ecological footprint reductions that can be measured in definite quantities such as kilowatt-hours, cubic meters, or gallons saved. Haigh (2005) praises the latest efforts to improve campus operations but cautions that these initiatives alone do not impact the quality of the formal programs of study. Indeed, despite these vital efforts, the integration of ESD across the entire curriculum, which Martin and Jucker (2005) regard as perhaps the most significant aspect of the sustainability agenda, still remains to be addressed by most institutions. Elusive in nature and far more difficult to compute, the incorporation of sustainability principles and concepts into all disciplines, not only those traditionally related, presents a great challenge.

Purpose of the Study

The purpose of this study was to explore, describe, and analyze how full-time faculty members at community colleges are making sense of the current debate about education for sustainable development and what they are doing to infuse sustainability into their curricula. By adding to the limited body of research on ESD in higher

education, this study may offer new insights on integrating sustainability across the curriculum of community colleges, a hitherto neglected area of ESD research.

Significance of the Study

To this day, most of the literature has focused on 4-year colleges and universities and not on community colleges, which not only educate vast numbers of students for transfer to 4-year institutions but also train the local workforce, offer non-credit programs for the community, serve as a springboard for international students and immigrants who study English as a second language, and overall have a significant impact on their communities. Forty-six percent of all U.S. undergraduates are enrolled in community colleges, according to the American Association of Community Colleges (AACC, n.d.). For many students, the limited time they spend studying for a certificate or an associate's degree is the only contact they will ever have with higher education. Catering almost exclusively to commuters, community colleges are directly connected to the local community they serve. This strong connection presents a unique opportunity for community colleges to have a positive impact on the immediate community regarding environmental issues and awareness of sustainability concepts.

Rationale

By signing the Talloires Declaration, the presidents of the institutions on the list of signatories have signaled their strong commitment to sustainability. Moreover, in 2004 the Board of Directors of the American Association of Community Colleges passed a resolution in support of the UN DESD (Rowe, 2005). This seems to indicate the trend that more community colleges will begin to look for ways to implement ESD. For instance, in 2007, Miami Dade College, Florida, instituted a set of 10 new General

Education Learning Outcomes, the last of which states that students will acquire the knowledge and skills to "Describe how natural systems function and recognize the impact of humans on the environment" (Miami Dade College, 2007). In order to mobilize efforts and bring about significant changes, the institutions' leadership will need to learn more about the current state of their faculty's involvement in ESD. Most research on faculty in higher education, however, has examined those employed by 4-year colleges and universities (Hardy & Laanan, 2006). Once decision makers understand faculty members' attitudes, beliefs, and practices in regard to sustainability, they may be more inclined and also more equipped to use their limited resources to establish policies that effectively move their college and their students toward a "sustainable future" (Talloires Declaration, 1994). At the same time, this study also contributes to the ongoing international ESD discourse in which appropriate models for achieving a sustainable future are debated.

Theoretical Framework

This study is based on the idea that sustainability needs to be achieved to solve the ongoing degradation of the planet's ecosystems and the related issues of poverty and economic injustice. ESD requires a holistic approach; therefore, any study of the topic ought to consider the three domains: environmental, economic, and social sustainability (UNESCO, 2004). Since the concept officially gained recognition in the form of the Brundtland Report, merely 20 years have passed. Unlike scholars in more established fields, who find decades and even centuries of studies and reports available for perusal, people who conduct research in this emerging field can only look back at two decades of published work to justify or support their studies. At the same time, ESD encompasses a

vast number of disciplines (Sherren, 2007). One could even argue that any scholarly field is relevant to be studied in the context of sustainability research.

The theoretical frameworks that have been developed in the sustainability literature mirror this situation. After a multidisciplinary review of literature on sustainable development, for instance, Jabareen (2006) concluded that there was a dearth of comprehensive theoretical frameworks even though one could argue that scholars like Orr and Sterling, whose ideas will be examined later, have contributed rather extensive frameworks to the field. Furthermore, Jabareen found that few working definitions existed that were precise and unbiased. He then applied conceptual analysis to derive seven unique themes that form a sustainable development framework that can serve as a theoretical basis.

Jabareen's framework consists of six categories, *natural capital stock*, *integrative management*, *utopia*, *eco-form*, *global agenda*, and *equity*, which form a circle around the seventh aspect, *ethical paradox* (p. 10). The key feature of Jabareen's design is the position of the *ethical paradox* in the center of all the other aspects. The fact that the terms, *sustainability* and *development*, which many people consider paradoxical, have actually been fused into the phrase "sustainable development" is thereby effectively expressed by Jabareen's diagram. Whether this linguistic quandary impedes international efforts to attain sustainable development will be discussed later.

The conceptual framework that informs this study is based on the seven key characteristics of ESD described in the *Framework for the UNDESD Draft International Implementation Scheme* (2006). According to the document, ESD aspires to a "high-quality learning experience, with the additional criterion that the process of

learning/teaching must model the values of sustainable development itself." ESD includes environmental education but extends the perspective to encompass "socio-cultural factors and the socio-political issues of equity, poverty, democracy and quality of life" (p. 17). ESD is not meant to be taught separately. Instead, its complexity demands that it be infused into the entire curriculum. The table on the following page (Table 1) displays the key characteristics of ESD in a shortened version.

Definitions

"sustain / v – to make something continue to exist or happen for a period of time"

"sustainable / adj – able to continue without causing damage to the environment"

(*Longman Dictionary of Contemporary English*, Bullon et al., 2003, p. 1675)

Since the term sustainability and its adjectival form "sustainable" appear in many different fields and contexts, ranging from architecture and design to business and tourism, it is imperative to clarify and offer a definition for the purpose of this study. The most widely quoted definition stems from the Brundtland Report that first coined the phrase "sustainable development." It defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43). Calhoun and Cortese (2006) use this definition, and Cortese (cited in Calhoun & Cortese, 2006) augments it in the following way:

> Sustainability is about remaking the human presence in the natural world in a manner that will allow all current and future humans to be healthy; have strong, vibrant, secure and thriving communities and nations; have economic opportunity for all; and restore and maintain the integrity of our life-support system – the biosphere. (p. 62)

Table 1.

Key Characteristics of Education for Sustainable Development

Characteristics	Description
1. Interdisciplinary and holistic:	embedded in the whole curriculum
2. Values-driven:	assumed values and principles of SD are made explicit so that they can be examined, debated, tested, and applied
3. Critical thinking and problem solving:	leading to confidence in addressing the dilemmas and challenges of sustainable development
4. Multi-method:	teachers and learners work together to acquire knowledge and play a role in shaping the environment of their educational institution
5. Participatory decision-making:	learners participate in decisions on how they are to learn
6. Applicability:	the learning experiences offered are integrated in day to day personal and professional life
7. Locally relevant:	addressing local as well as global issues, and using the language(s) which learners most commonly use

Note. Adapted from *Framework for the UNDESD International Implementation Scheme* (2006, p. 17).

Cullingford (2004) offers a slightly different description that includes an implicit moral obligation: sustainability means "paying attention to the long-term consequences of actions and, by implication, thinking of others who might suffer from the immediacy of one's personal greed" (p. 17). Finally, according to Solow (1992), the term sustainability communicates the duty "to bequeath to posterity not any particular thing – with rare exceptions such as Yosemite, for example – but rather to endow them with whatever it takes to achieve a standard of living at least as good as our own and to look after their next generation similarly" (p. 15).

According to Sterling (2004), the various sustainability terms and definitions indicate a shift from regarding environmental issues as disconnected incidences to understanding the holistic nature of economic, environmental, and social issues. While on the surface the terms appear to be more or less interchangeable, Sterling argues just the opposite. He notes, for example, that ESD has gained popularity among politicians and economists, who seem to prefer the dynamic connotation of the word "development," which, he believes, is also the reason many educators have tagged on to this. Sterling acknowledges that the positive association that is attached to the term ESD may afford some tactical advantages. However, he sees a danger in accepting a term that may reflect an attitude that does not challenge current educational models and instead offers a conventional definition of sustainable development at the expense of more critical and "radical interpretations" (p. 49) that question the current system on which most educational policy is based.

Sterling contends that these terms have gradually evolved from the original environmental education (EE), which traditionally focused on the quality of the

environment without extending the concern to social, political, and economic issues, to education for sustainable development (ESD), education for sustainability (EFS), and finally to sustainable education (SE). For Sterling, sustainable education means moving from an outcome oriented educational culture, often associated with ESD, to an educational philosophy that is "transformative" (2004, p. 55). Rather than questioning or negating the validity of previous claims each new sustainability term includes previous concepts and expands their application to new areas. Thus, the evolution of sustainability terms represents a desire to accommodate ever wider and deeper aspects of an environmental education whose boundaries are increasingly considered insufficient, Sterling contends.

Clearly, the concept of ESD defies a single definition that everyone can easily agree upon. Several factors contribute to this ambiguity. For one, the combination of the terms "sustainability," originally a concept used in environmental studies, and "development" the deliberate modification of the natural world to ensure economic advancement, appears to present what Jabareen (2006) calls an "ethical paradox" (p. 3). According to Jabareen, most definitions that have been published underscore the key idea of fusing these two conflicting principles, environmental conservation and economic growth, with a slight bias toward the latter. Without a doubt, sustainable development is not a neutral term. On the contrary, when viewed through the lens of ethics, it is difficult not to assign values of good versus bad, depending on where one is situated on the ecology-economy continuum. Like Goethe's Faust, who felt two souls housed within his breast, many people sense an agonizing tension between the path of sustainability and the path of development. However, it is possible to define "development" not only in terms

of economic expansion but also as an improvement of quality (Farrell & Papagiannis, n.d.), a kind of development that constantly seeks to enhance environmental, economic, and social conditions.

Ultimately, narrowing such a complex topic into one phrase that appeals to diverse constituents may not be viable. Corcoran and Wals (2004) argue that definitions for sustainability and sustainable development have multiplied since the late 1980s, possibly resulting in "less coherence and more divergence" (p. 87). One of the goals of this study was to find out how community college faculty members approach this impasse. Ideally, definitions and terminology are meant to facilitate not inhibit communication between people from diverse background. Yet, they often achieve just the opposite, creating rifts and disputes that may divert attention from the importance of the issue at hand: Our current way of life is unsustainable, and we have to change that! On the other hand, a critical examination of existing definitions and associated educational paradigms is necessary to develop new theoretical frameworks that bring us closer to living sustainably.

Lang (quoted in Gough, A., 2006) contends that the terms ESD and EFS should not be used interchangeably because they have slightly different emphases, but also acknowledges that the majority of writers she reviewed disregard these semantic nuances. For the purpose of clarity and cohesion, the term *education for sustainable development* (ESD) is used throughout this document to refer to any educational effort and program whose purpose is to promote the vision of economic, environmental, and social balance within the carrying capacity of the Earth. I chose ESD because it is the term that has been adopted by the United Nations and is widely recognized and frequently used

internationally (ESD Toolkit, n.d.). When reviewing the sustainability literature, however, the corresponding terms used by individual authors have not been changed. Finally, *sustainability* is used to refer to practices that allow this generation to meet "the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment, 1987, p. 43).

Research Questions

The key research question guiding this study was: With regard to education for sustainable development, what are the attitudes, beliefs, and practices of faculty members at a community college that is a signatory to the Talloires Declaration and has thus committed itself to promoting sustainable development according to the 10-point framework? This leads to the following set of questions:

1. How do faculty members who have attended Green Studies professional development workshops understand the concepts of *sustainability* or *sustainable development*, and *environmental literacy* with respect to education?
2. In what ways do they think higher education institutions play a role in advancing "global sustainability" (Talloires Declaration)?
3. How do these faculty members understand the function of their community college in the promotion of ESD in academia and the local community?
4. How do they view their role as educators in advancing an awareness of sustainability in their students?
5. What challenges do these faculty members face when they integrate ESD into their curriculum?

6. How do these faculty members learn about ESD and appropriate teaching practices?

Delimitations of the Study

This study focused almost exclusively on the curricular aspects of ESD as opposed to the technical part of campus sustainability such as facilities retrofitting, campus energy efficiency, and green building design. Therefore, the emphasis was on faculty development, curriculum enhancement, environmental literacy, civic engagement, and the human aspects of ESD. However, since faculty members do not teach, research, and interact with each other and students in a vacuum but in brick and mortar classrooms, offices, or conference rooms, all located on a real campus with buildings, hallways, parking lots, and green spaces, the physical environment was considered as well. Furthermore, this study is delimitated to a small sample of professors who have participated in Green Studies at Miami Dade College (MDC).

Introducing the Researcher

Since I work at MDC, a community college, I am especially interested in exploring how community college faculty interpret the issue of ESD, and to which degree the concept has become integrated within the community college. I have been teaching English for academic purposes at the community college for 9 years, and one of my roles within the department was chairing the United Nations Day Committee. In preparing the event every year, I became more familiar with many pressing global issues, the UN Millennium Development Goals, and the work of UN agencies such as UNESCO, the lead agency promoting the implementation of the Decade of Education for Sustainable Development. Whenever the Earth Ethics Institute (EEI) offered one of their Green

Studies professional development courses, I participated, and for the past 4 years, I have served on the college-wide EEI Council. As a campus liaison, I coordinate lectures, movie screenings, and other events for the EEI. I also oversee an organic garden on campus that several professors and I use with our classes.

Through these activities, I have gained a general sense of what types of opportunities and obstacles present themselves at a community college with regard to educating students for a sustainable future. To broaden my perspective, I have also taken part in the monthly conference calls of an initially small but rapidly growing group of community college educators and sustainability coordinators that was formed at the first conference of the Association for the Advancement of Sustainability in Higher Education (AASHE) in the fall of 2006. At the same time, I continued reviewing the literature to grasp the theoretical concepts of ESD and to learn what other institutions were doing nationally and internationally. It was then that I became aware of the absence of empirical studies, reports, and commentary concerning ESD at community colleges.

Summary

This study sought to investigate the attitudes, beliefs, and practices of community college faculty with respect to the issue of ESD. This introductory chapter included the background to the study, statement of the problem, purpose of the study, significance of the study, and rationale, followed by the theoretical framework, definitions, research questions, delimitation, and introduction to the researcher.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study is to understand how full-time community college faculty members at institutions that signed the Talloires Declaration respond to the challenge of education for sustainable development (ESD). Therefore, I have attempted to find out (a) what researchers have written about the relationship between ESD and higher education, (b) what type of ESD initiatives exist in colleges and universities, (c) how ESD is treated across the curriculum, (d) how professors understand their role concerning ESD, (e) how they learn about ESD, and (f) what impact professional development initiatives have on ESD curriculum development. The literature review concludes with a section on community colleges and their faculty.

Criteria for Literature Selection

It is the objective of this literature review to explore the historical and theoretical background of education for sustainable development and to examine it in the context of contemporary higher education around the world and in the United States. The review began with a close reading of seminal works by leading sustainability researchers (Berry, 1988; Orr, 1994; Sterling, 2001) and was then extended to reports, for example, the *United Nations Decade of Education for Sustainable Development 2005-2014 Draft International Implementations Scheme* (2004) and related documents published by UNESCO. In addition, key terms of the Talloires Declaration such as sustainability, sustainable development, environmental literacy, sustainable future, environmental sustainability alone or in cross reference with higher education, community college, professional development, curriculum, and education were searched electronically using

Web Luis, Illumina, ProQuest, and WilsonWeb. This search yielded different types of documents: empirical studies, meta-analyses, opinion articles from refereed journals, and edited books featuring chapters on sustainability in higher education. Finally, the Dissertation Abstracts International portal was searched for current dissertations on sustainability issues in higher education. Aside from these sources, documents and reports made available by various sustainability organization were included if they pertained to the research questions.

ESD and the Role of Higher Education

According to Simpson (2003), colleges and universities need to address the ongoing environmental crisis with fervor. Calder and Clugston (2003) believe that it not only makes economic sense for campus planners to adapt eco-efficiency in daily operations, but that colleges and universities must go beyond that because they are the institutions charged with conveying values to the next generation, advancing the search for truth, and generating sophisticated knowledge. Their responsibility lies also in preparing students to take on an active role in improving society. Santone (2004) stresses the fact that sustainability education allows students to become better citizens who are not only knowledgeable but also concerned about their society and their natural environment. She rejects the idea that it is simply a disguised form of traditional environmentalism; neither does she believe that integrating sustainability education means that more content will be added to already dense curricula. Instead, Santone argues, sustainability education promotes lifelong learning that integrates a variety of competencies students will need to live prosperously and peacefully in the future.

The concept of sustainable development is based on the realization that everything in our environment, economy, and society, is connected and interdependent. Ideally, our educational system should reflect this principle of balance. However, in reality the current system assigns higher value to economic success at the expense of environmental quality and social equity. Since the release of *A Nation at Risk* in 1983, which bemoaned the infamously mediocre state of education in the United States, reforms have emphasized increased accountability with the goal of educating students to be competitive in a global economy (Wheeler & Byrne, 2003). Unfortunately, this has led to curricular changes that focus on attaining higher scores on select subjects, such as math, science, and reading, while they neglect to educate the next generation for a sustainable future.

In 1994, during the Clinton administration, a special council developed a plan titled *Education for Sustainability: An Agenda for Action* as part of President Clinton's Council for Sustainable Development. It laid out how schools were to integrate sustainability into their curricula so that students would become responsible and environmentally conscious citizens. According to Wheeler and Byrne (2003), however, funding for institutions and programs that are helping schools learn about sustainability is insignificant, and as a result, ESD is anything but firmly established in U.S. K-12 school systems. The authors believe that higher education will play a vital role in redirecting educational goals and standards to address the issues of sustainability. They recommend that colleges of education graduate prospective teachers who possess the necessary "knowledge and skills that will help them contribute to a more sustainable world," and ensure that these new educators are able to apply what they have learned about

sustainability once they enter the classroom (p. 28). In summary, any efforts to address the U.S. K-12 system's approach of ESD need to also consider the larger educational system, higher education, and the economy and society within which it is embedded.

Calhoun and Cortese (2006) are convinced that postsecondary institutions have the "responsibility to increase the awareness, knowledge, skills, and values needed to create a just and sustainable future" (p. 3). The authors claim that colleges and universities prepare many future professionals who will assume vital decision-making positions, thereby influencing society's institutions. For instance, these institutions educate architects, engineers, managers, and scientists who can all include sustainability principles when they enter the workforce. Like Wheeler and Byrne (2003) Calhoun and Cortese also point to teacher training and elementary and secondary school curriculum development programs that can exert an enormous influence on the structure of K-12 education. Moreover, they argue that colleges and universities possess and control vast areas of land as well as buildings, whose development can serve as a model to surrounding communities, students, and visitors alike.

Cortese (2003) laments the fact that sustainability is not high on the agenda within the formal educational system. Although an increasing number of individuals and groups are engaged in some form of ESD, Cortese thinks that it is often the graduates of the most prestigious universities who become leaders that adopt an "unhealthy, inequitable, and unsustainable path" (p. 16). For instance, the Aspen Institute's 2003 report of MBA students' attitudes about business and society showed that almost a third of students in top MBA programs in the United States, Canada, and the UK believed that the environmental responsibility of a company did not extend beyond abiding by the law

(Thomas, 2005). Four years later, when the Aspen Institute conducted its third online survey to which 1,943 MBA students enrolled at 15 business schools responded, these attitudes had not changed significantly. In spite of the ongoing public debate about global warming and environmental issues, when students were asked to define "a 'well-run' company," they ranked the fact that a company "adheres to progressive environmental policies" (Aspen, 2008, p. 5) as second least important of twelve descriptors. In its report summary, the Aspen Institute concluded that MBA programs and businesses had not been able to convince students that "environmental and social responsibility contribute to corporate financial success" (p. 2). Cortese reasons that higher education emphasizes individual learning and competition, resulting in graduates who are unprepared for cooperative efforts. In addition, faculty members are often too preoccupied with tenure, promotion, and research to question existing structures of academic fragmentation, or to initiate interdisciplinary collaboration. All this hampers the much needed paradigm shift toward creating a sustainable society in the future. Cortese stresses that the concept of sustainability is highly complex, and thus requires willingness to cross these supposed disciplinary boundaries, in other words, to promote interdisciplinary approaches.

On the brighter side, Cortese (2003) points to the fact that higher education institutions do possess several critical features that endow them with the means to raise the awareness and understanding that are necessary to redirect society. Not only do colleges and universities wield influence over a very large number of people, they also offer a multiplicity of skills and talents that permits them to research and experiment with sustainable concepts. In addition, academic freedom allows institutions of higher learning to examine and critique deeply set cultural beliefs that stand in the way of more

sustainable modes of living. However, embracing and promoting the shift toward sustainability asks for nothing short of a complete transformation of the schools, and this dramatic change may simply seem too radical to institutions that are traditionally adverse to risks and uncertainties. Despite this perceived apathy, Cortese acknowledges that many positive examples exist, such as the University of Northern Arizona's Ponderosa Project, a 5-year program that asks faculty to integrate sustainability concepts into 120 courses, or the Environment Across the Curriculum Program introduced at Carnegie Mellon University, which offers basic environmental education to every student.

Perceived Obstacles

The notion that the fragmentation of higher education into disciplines inhibits a shift toward sustainability is also addressed by Orr (1996) in his foreword to *Greening the College Curriculum*. Even though institutions profess their interest in interdisciplinary approaches of learning, the leading model of effective scholarship continues to be the advancement of highly compartmentalized subject areas. The community of scholars does not appear to be concerned about its producing slivers of knowledge that are often insignificant or fail to make a meaningful contribution to "an intelligible whole" (p. 10). The exponential growth of information in the computer age has only increased this propensity for pigeonholing in the academy. This inability of seeing things holistically presents a tragic barrier to implementing an environmental agenda. Orr notes that a major obstacle for the advancement of a broader ecological perspective in higher education is the institutions' historical mission of dominating nature, an idea promoted by Francis Bacon, which became engrained in the modern research universities during the Enlightenment. As products of this era, colleges and

universities continue to regard progress with unequivocal optimism. While this approach may have been advantageous when the population was still limited, it is now causing significant disruption of ecosystems and the biosphere. Higher education institutions, Orr explains, do not operate under the assumption that there is a point at which rendering nature "subservient" (p. 10) becomes problematic or even destructive to humans. If they did, these institutions would be markedly different from what we regard as a typical research university.

Furthermore, Orr identifies the schools' dependence on outside funding, often through contracts with businesses and large corporations, as a hindrance to solving environmental problems. Pressured by profit-minded administrators, departments conform to commercial methods to produce knowledge that can be turned into a profit; however, they often fail to critically examine the origin of ecological disarray. Orr (2003) asserts that higher education has modeled itself after businesses to become an industry that contributes to societal and global problems by proudly churning out graduates who have the potential to earn high salaries in an economy that is essentially unsustainable. This notion will also be examined in a later section that deals with sustainability and neoliberalism.

Finally, Orr (1996) blames college presidents and trustees for their failure to provide adequate leadership and vision to deal with the looming ecological crisis. Instead of recognizing the significant positive role higher education could play in solving this crisis, colleges and universities continue to produce specialists who then endeavor further exploitation of the planet. Compared to the paradigm shift that occurred during the period of the Enlightenment, the current sustainability movement represents a far more

encompassing revolution, he argues. It is important to mention that Orr, who has been at the forefront of the sustainability movement in the higher education arena in the United States, now regards higher education institutions as increasingly engaged in whole systems thinking that reevaluates the human role in nature (Orr, 2005, p. xiv - Foreword).

Challenges for Institutions and Educators

Rees (2003) supports many of Orr's observations about the impacts of higher education on society. He argues that without a doubt, higher education contributes to the tremendous ecological footprint of the developed world. Research funding too often goes to disciplines, such as science, engineering, and economics that are profit-oriented and produce marketable patents, while the humanities remain underfunded. Colleges and universities have bought into the promises of the global economy, disregarding the fact that our materialistic culture separates people from the natural world. This disconnect traumatizes individuals, erodes communities, and leads to a widespread degradation of ecosystems. As communities around the world are beginning to see the damage brought on by neoliberal forces, Rees sees an opportunity for higher education to lead toward a sustainable future. As will be shown in a later section on ESD vs. neoliberalism, not everyone shares Rees' optimism with regards to society distancing itself from the negative impact of neoliberal policies.

O'Sullivan's (2002) words echo some of that same deep concern about humans' role in nature. O'Sullivan feels that humans now realize that they have the power to cause extinction of life on this planet. He contends that because of the enormity of this responsibility, educators must evaluate how their professional endeavors and decisions impact Earth. When it comes to setting educational priorities, the planet's current

situation must come first. Finally, O'Sullivan expresses hope that higher education can "re-invent itself" (p. 70) in the context of the story of the universe, which Thomas Berry addressed in his seminal work *The Dream of the Earth* (1988) and more fully explored with Brian Swimme in *The Universe Story* (Swimme & Berry, 1992), a science-based tale of cosmic genesis that explores humanity's existence and search for meaning in the evolving universe. At the tertiary level, O'Sullivan believes, students are intellectually capable and sufficiently mature to examine the current stage of human development in the "planetary context" (p. 67). He is convinced that every student should encounter this story at the university and engage with it to learn how to deal with the challenges posed to humanity in the new century.

Bowers (2001) argues that prominent educational theorists such as Dewey, Freire, and Prigogine, whose work education professors often select as assigned readings to inspire pre-service teachers and novice college instructors, have routinely based their recommendations for educational reform on an incomplete viewpoint that seeks the achievement of equality with the dominant culture while ignoring the "cultural roots of the ecological crisis" (vii). In Bowers' opinion, it is imperative that teacher education programs abandon assumptions of the Enlightenment and recognize that parity of individuals within a system that will soon be unsustainable should no longer be a goal of education. To alleviate this fundamental problem, Bowers suggests that educational ideology consider the inherent "double binds" (p. 206) that Western culture presents. If sustainable lifestyles and "eco-justice" (p. 207) are to be achieved, colleges and universities have to rethink their insistence on erstwhile paradigms that promote curricula and modes of instruction that favor abstract and compartmentalized thinking over holistic

and inclusive approaches. In short, learning from non-Western cultures that have managed to sustain themselves in their environment may be more valuable than debating the merits of educational theories that were conceived at a time when uncontrolled population growth, environmental degradation, over-consumption, global climate change, and water shortages were not yet considered extremely problematic.

However, learning to appreciate and embrace the wisdom of non-Western cultures will prove to be extremely challenging. According to Jucker (2004), the middle and upper classes in the West, who are the main culprits of unsustainable development, find the more sustainable lifestyles of less-developed societies virtually incomprehensible. Educators who hope to raise awareness of eco-justice and increase knowledge about sustainable development face an uphill battle since they must not only overcome powerful biases against ideas that do not reflect the conventional view, but also encourage those who accept the new view to move from awareness to action and from theory to practice. Essentially, Jucker argues, educators have to unlearn established thinking patterns first; then they can help their students "delearn, the deep-seated ideologies of consumerism, individualism, growth, development, and progress, and relearn the central values of many vernacular societies; to live well with little, in humility and with respect, within a community of human and nonhuman relations" (p. 10).

Even though their viewpoints and theories about ESD differ, the majority of researchers concur on the notion that higher education plays a major role in advancing ESD. Many regard it as a tremendous challenge for higher education. Raitan calls it a "formidable task" (2005, p. 78) that will entail unparalleled efforts. Yet, they also see a tremendous potential. Moomaw (2003), for example, emphasizes that colleges and

universities "possess the intellectual capital" (p. 164) to find the solutions. Rowe (2005) contends that higher education institutions must play a pivotal role in educating informed and responsible citizens in the context of unbalanced economies, shrinking natural resources, and widespread environmental destruction. If sustainable development becomes the norm, Rowe concludes, the result will be healthier communities with vibrant economies that recognize the value of education and increase access to higher education for more people.

Research on ESD Initiatives in Higher Education

It is obvious that many prominent voices in higher education recognize the unique opportunity higher education presents when it comes to initiating change toward sustainable development. The next step then is to ask what types of initiatives universities and colleges have taken to educate about the merits of sustainable development, to model sustainable practices, and to instill in their faculty, staff, and students attitudes, values and practices that are in harmony with this new ideology. While a fairly large literature exists on the need for ESD and signatories of sustainability declarations (Bowers, 2001; Calhoun & Cortese, 2006; Howe, 1997; Link, 2000; Orr, 1994; Sterling, 2001), fewer researchers have examined the realization of such plans (Moore, 2005a; Moore 2005c; Shriberg, 2002; Brodie, 2006). Given the fact that ESD is a fairly new concept, it is perhaps not surprising to find that not too many empirical studies documenting the creation and implementation of ESD programs exist. The following review presents a variety of studies pertaining to ESD beginning with the field of environmental education (EE) from which ESD evolved (Sterling, 2004).

Teaching About Sustainability - Environmental Education

Until recently, the only place where students were exposed to the concept of sustainability was in environmental education programs, which grew out of rural studies and nature studies. In the 1960s, the term environmental education became increasingly common, and in the following decade, international organizations such as the United Nations and its United Nations Environmental Program (UNEP) started endorsing principles of environmental education worldwide (Sterling, 2004). In most cases, however, environmental education has remained self-contained, its concepts rarely leaking out to other departments. Huckle (2004) even argues that mainstream environmental education positions the environment "outside society" (p. 42), not as an integral part of it.

When educational institutions attempt to respond to ESD, Sterling (2004) writes, the first step is commonly an add-on approach that consists of an extra class or curriculum enhancement exposing students to concepts associated with sustainability such as "biodiversity or carrying capacity" (p. 59). Sterling refers to this approach as "'education *about* sustainability'" (p. 59) and explains that this method is primarily concerned with teaching content as opposed to critiquing and critically examining the existing system.

Sterling's argument might explain why environmental studies programs often serve as vehicles to boost environmental values and increase environmental literacy among students even though previous studies have shown that the mere teaching of facts in formal environmental education classes does not automatically improve students' attitude toward the environment (McMillan, Wright, & Beazley, 2004). Instructors at

Dalhousie University, Canada, a signatory to not only the Talloires Declaration but also the Halifax Declaration and the United Nations Declaration on Cleaner Production considered the idea that facts and values needed to be taught in tandem to prompt a feeling of personal responsibility in students. To examine if an introductory environmental studies class had an impact on students, McMillan, Wright, and Beazley (2004) studied a sample of 161 students enrolled in the class. The team used a questionnaire developed by Kempton, Boster, and Hartley (1995), which had been previously reviewed and commended for its high validity. The questionnaires contained 149 statements, which participants were required to answer on a 6-point Likert-type response scale. The team administered the instrument twice, once at the beginning of the 8-month term and again at the end. A response rate of 30% was obtained for paired responses. The authors attributed this non-salient response rate to the length of the questionnaire and to the fact that students had to complete the survey at home and return it to school. In their analysis of the survey, the researchers used descriptive statistics to determine the difference between pre- and posttest scores. The team then devised question categories similar to Kempton et al.'s egocentric-homocentric-ecocentric continuum, which allowed them to identify changes in the students' values regarding the environment.

The results of the one-tailed paired t-tests showed a significant difference between the pre-and posttest means, indicating that the eight-month class had helped students develop values that reflected a more sustainable lifestyle. Specifically, the researchers established that the perspective of the students who had taken the class shifted from egocentric to homocentric and ecocentric, the latter representing a desirable and more

sophisticated viewpoint that revolves around concern for the environment, not simply because of its importance for humans (homocentric) but because of its "intrinsic worth, independent of its usefulness to humans" (p. 4). The researchers caution that the sample may show bias because the pretest scores indicated that the students already had fairly high levels of environmental values.

Although the response rate precludes the ability to generalize from the obtained results, the findings show that this type of class may be a successful method to enhance environmental values in students. Using a shorter instrument and administering the survey during class time may allow researchers to obtain more representative results in similar studies in the future. The authors recommend that higher education leadership encourage all students to enroll in this type of class to enhance environmental values in future generations and to build a more sustainable society. On the surface, that may appear to be beneficial; however, promoting a class within the environmental studies department to improve environmental values among students may actually impede the process of integrating environmental values across the disciplines. Although McMillan et al. recognize that those students who might benefit the most from taking a class like this often do not enroll in it, they do not suggest any changes or transformations of the existing university curriculum.

In order to expose all students to environmental issues and augment environmental literacy, some higher education institutions have begun to institute mandatory classes. To assess the implementation of such a formal environmental literacy requirement (ELR), Moody, Alkaff, Garrison, and Golley (2005), studied different aspects of the process and its outcomes at the University of Georgia, one of the first

universities in the United States to implement such a requirement for all undergraduate students in 1993. They conducted formal and informal studies as well as surveys with students and faculty and summarized their findings. In informal interviews with faculty, Garrison learned that faculty often interpreted the goals of the ELR program in contradictory ways. Some felt the program should result in measurable behavior change, while others believed that the professor should merely convey knowledge, leaving the decision for change up to the student. Alkaff surveyed 242 students who were enrolled in ELR courses to evaluate their environmental literacy in a pretest, a posttest, and a follow-up test 8 months later. Among the key findings of the investigation were a significant increase in students' awareness of and responsibility for the environment and the fact that the gained knowledge from the ELR coursework was retained for eight months (p. 5). Finally, Moody studied how students and faculty perceived the requirement. Overall, students responded enthusiastically to the new program, whereas faculty members were more critical.

Based on their studies, the writers recommended that an environmental literacy coordinator be employed by the university and that an external review panel be hired to determine more specific objectives and outcomes of the university's environmental literacy program. Since the report does not give detailed information about the methods employed, it is not possible to comment on the quality of the research; however, the findings give a useful overview of issues and problems that can arise when an environmental literacy requirement is first introduced.

Another study documenting the effect of an environmental education course on achieved environmental awareness and increased environmental literacy comes from

Taiwan. Hsu (2004) administered pre- and posttests to 121 Taiwanese university students who were either enrolled in an experimental environmental education class or in a research methods course (non equivalent control group design). As an instrument, Hsu used a 9-page questionnaire developed by Hsu and Roth (1998) that had been used to assess environmental literacy and whose reliability had been tested. In addition, Hsu conducted a follow-up test two months after the completion of the coursework to evaluate retention of the material presented. The results of the ANCOVA test showed that the experimental course promoted the students' responsible environmental behavior (REB) significantly and that the effects could still be measured two months after the course had concluded (at alpha level 0.05). From this and previous studies (Hsu, 1999; Hsu & Roth, 1998), Hsu concluded that affective environmental literacy variables, such as "locus of control, knowledge of and skill in using environmental action strategies, and intention to act" (p. 41) are important predictors of achieving REB and should therefore receive more attention from curriculum developers.

Since Hsu's research was conducted in Taiwan, a country whose educational system and philosophy differs greatly from that of the United States, one has to be cautious not to jump to conclusions. As Hsu acknowledges, researchers in Taiwan tend to believe that more knowledge of environmental issues automatically leads to changes in attitudes toward the environment, an observation that Liang and Tsai (2000) refer to as "knowledge-attitude-behavior" theory. On the other hand, some Western scholars believe that knowledge alone is not enough to produce change (Black & Gregersen, 2008). Even though Hsu was aware of these divergent attitudes and specifically designed the environmental education course so that it would not over-emphasize knowledge building,

students may have resorted to traditional learning approaches. Therefore, the findings need to be understood in their cultural context.

Talloires Declaration Signatories

Worldwide, 378 university leaders in more than 40 countries have signed the Talloires Declaration. In the United States alone there are now 144 institutions that have become signatories of this action plan to incorporate sustainability in higher education (ULSF, 2008). How this implementation process is being put into practice has been the focus of several studies.

Shriberg (2002) surveyed a nonrandom sample (n = 687) of individuals in a number of targeted leadership positions at 59 four-year U.S. colleges and universities that had signed the Talloires Declaration up to the year 2001. Shriberg justifies his decision to study only signatories of the Talloires Declaration with the argument that a random sample of all U.S. colleges and universities would probably show little variability in terms of environmental leadership because few institutions actively pursue environmental goals. Given that ESD is a relatively new phenomenon, this decision seems rational even though the results cannot be used to generalize to other institutions. The leadership positions that Shriberg surveyed included the president or chancellor, senior academic affairs officer, senior business officer, senior operational officer, senior student affairs officer, director of environmental health, energy coordinator, president of faculty senate, and the president of the student government. If the positions existed, Shriberg also sent surveys to participants directly involved with environmental affairs on campus, such as the environmental coordinator, recycling coordinator, and representative of a student

environmental group. A response rate of 36% was obtained (249 individuals from 56 institutions returned their questionnaires).

Using mixed methods, the survey and comparative case studies, Shriberg identified several organizational factors that determine whether institutions emerge as leaders of sustainability while others continue to delay becoming involved in promoting sustainability on campus. Specifically, Shriberg found that "image seeking behavior" (p. 282), a tendency to rely less on top-down and more on collaborative decision processes, a "collegial atmosphere" (p. 283), and a "progressive and liberal" (p. 284) orientation fostered sustainability efforts. The survey results indicated that respondents' overall sustainability awareness level on a scale of 1 to 5, with 5 representing a very high awareness, was medium to high (mean = 3.37). Only 3% of respondents believed themselves to possess a very low awareness of sustainability.

Although it is not possible to generalize from the obtained results because of the nature of the sampling method and the relatively low response rate, Shriberg believes the findings suggest that a "progressive and liberal" (p. 284) as opposed to conservative orientation at the institutional level can be a strong predictor of engagement in sustainability on campus. Among the areas Shriberg suggests for future research are organizational change models, the influence of leadership, and the role of interpersonal relations on campus environmentalism.

Moore (2005b) engaged in a collaborative inquiry project with faculty and staff to learn more about the sustainability initiatives at the University of British Columbia, Canada, which adopted a sustainable development policy in 1997 and signed the Talloires Declaration as well as the Halifax Declaration, a similar document that was

created by an international group of university presidents, NGOs, and senior officials from universities, governments, and businesses in 1991. The purpose was to examine how far the university had moved in the direction of sustainability. Using principles of action research, the collaborators wrote individual reflections on their experiences and then collated their stories during a workshop. After a brainstorming session, they emerged with five major themes and rewrote their essays around them.

The findings delineate five barriers that impede the transformation of the institution toward sustainability: a lack of institutional commitment, diffused power and unclear decision making, difficulties balancing energy and exhaustion, a lack of strategic vision or historical continuity, and difficulties with walking the talk of sustainability. Moore makes an important observation when she writes that creating policies for sustainability is fundamentally different from creating effective "programs and systems that model and develop sustainable practices on the ground" (p. 67).

Based on the findings, Moore recommends that universities find ways to recognize their employees' enthusiasm for sustainability to prevent burnout of engaged faculty and staff. Moore's chosen method of venturing across disciplines to gather insights from a variety of individuals corresponds with the theory that sustainability requires systems-thinking and integrated methods of inquiry. As a result of this preference, Moore never elaborates on the exact number of participants, nor does she disclose their positions or their departments. It is obvious that she places more importance of the group's written collage than individual member's contributions. Therefore, readers do not get the opportunity to learn more about possible differences between departments or divergences between faculty and staff, information that may have

been helpful for those charged with implementing sustainability programs at their own institutions.

ESD Across the Curriculum

As an English language teacher, I am particularly interested in studying how the issues of educating for sustainability and enhancing environmental literacy have been accepted not only in the community of science educators but across the whole liberal arts curriculum. The following research projects present efforts to integrate ESD outside of environmental studies programs.

Teacher Education

The first study comes from the field of education. Operating under the assumption that textbooks are essential means for the dissemination of certain worldviews and ideologies, Bristol (2005) investigated to what extent current pre-service teacher introduction to education textbooks integrated ecological issues or language relating to sustainability concepts. The study was limited to the third editions of six best-selling textbook, and the purpose was to determine whether the textbooks included information that facilitated or hindered a deeper understanding of sustainability.

In order to examine the text, Bristol created 13 units of analysis that where aligned to ecological principles and sustainability. Each text sample was read twice, and the textual data were recorded in a chart. Bristol explains that she tried to maximize consistency by undertaking the entire analysis herself instead or relying on the accuracy of additional content analysts. Nevertheless, soliciting a second person to analyze the same passages and then comparing, contrasting, and adjusting the scores may actually have contributed to more accurate, less subjective results. However, Bristol did test

stability, the ability to achieve very similar results upon delayed review of the same text, in a pilot analysis and found her analysis to be sufficiently precise. The overall findings indicated that although textbooks varied significantly in their inclusion, emphases, and exclusion of the issues pertaining to sustainability, less than one-tenth of one percent of the content in the chosen introductory education textbooks included references to education for sustainability.

Bristol believes that this omission represents a form of "denial" that gives readers a "false sense of a manageable and sustainable future secured through technology and progress" (p. 3). Similar to Sterling's earlier remarks (2004), she stresses that sustainability is not something that can be simply added on in the form of, for example, an additional chapter. Rather, the entire textbook needs to undergo a transformation that reflects a re-orientation toward holistic systems thinking. Since this study was limited to only six textbooks, the results may not be representative of all current textbooks for pre-service teachers. Even so, the results do highlight the fact that sustainability concepts are not well represented in the most popular textbooks for aspiring U. S. teachers, which most likely means that education departments around the country have yet to confront the issue of ESD.

On the other side of the globe, another sizable school system has reportedly begun to revise its teacher education curriculum to incorporate environmental concepts. Serving about 202.5 million school children and employing 5.5 million teachers (Ravindranath, 2007, p. 194), the Indian educational system is responding to the goals of implementing ESD as set forth by the United Nations General Assembly by redirecting the curriculum to infuse environmental education (EE) in a more formal way. As a result of several

policies, Ravindranath writes, Indian in-service teachers are trained to teach environmental studies by state education departments and non-governmental organizations. The National Council for Teacher Education proposed that a mandatory EE course should be established for all teacher education programs and that the topic should further be addressed in the required papers that teachers have to write as fulfillment of their coursework. Yet, aside from exposing teachers to the content of EE, Ravindranath believes it is even more essential to encourage them to think critically so that these novice educators can later select materials and practices that suit the local needs of their future school communities. In short, the aim of the curriculum should be not only to transmit content and appropriate methodologies, but also to actively contribute to sustainable development through innovative project work in the local community.

India's swift response to the demands of the UN DESD can in part be explained by the nation's relative poverty in socio-economic terms. As Jucker (2004) indicated, people in less-developed societies, and India belongs in this category, already pursue more sustainable lifestyles than residents of wealthier nations do. In other words, India's educators do not need to rethink their entire culture and its norms to the same degree as their counterparts in the West do. Bowers (2001) brought forth a similar argument when he wrote that Western culture needed to learn from less-developed countries how to live more sustainably. Aside from culture, as Ravindranath accentuates, India's ancient religions, especially Hinduism, inform people's view of the universe in a way that is quite different from the prevalent Western ethos since the Enlightenment, which elevates humans' needs above animals and plants. The Hindu belief that all species as part of a

system deserve equal "rights and privileges" (Ravindranath, p. 192) may be more aligned with the values associated with ESD. Yet, India like so many other emerging economic powers is undergoing rapid changes that will probably create tensions as traditional and modern values collide. The outcome of India's ambitious revamping of teacher education programs is thus far unknown, but as events gradually unfold, educators around the world may learn valuable lessons from India's model.

Continuing Education for Professionals

The interconnectedness of schools, colleges, and the economy becomes also apparent when one considers the needs of current professionals who are trying to adapt to a changing economy. As companies embrace or delay calls for more sustainability, it has become clear that post-secondary education will not only have to train newly-minted teachers who understand the issues, but also assist established professionals whose companies do not want to miss the proverbial boat that sails towards a sustainable economy. Martin, Brannigan, and Hall (2005) report that professionals in the UK are beginning to realize that they must acquire a new set of skills to flourish within the parameters set by the new sustainable development paradigm. Naturally, they look toward the universities and other accreditation programs for help, which, in return, must examine their curricula carefully for content that addresses ESD.

Despite the perceived urgency, Martin et al. describe an implementation process that is "frustratingly slow" (p. 80). Part of the problem appears to be that many of the skills that professionals will need to possess in a sustainable economy are so called soft skills, such as effective "communication, leadership… and conflict management" (p. 82) that are not easily taught in a conventional higher education setting. To help professionals

better understand sustainability, the researchers developed a day-long workshop that focused on " 'earth as a system'" (p. 84), the laws of thermodynamics that pertain to the flow of energy and finite nature of matter on the Earth as well as issues of intra- and intergenerational equity. While the impact of the workshops on participants' behavior has not been evaluated in a longitudinal study, Martin et al. reported that participants from a variety of agencies and business training programs rated the experience as "extremely positive" (p. 87). Until the results of a longitudinal study, which is currently being negotiated, are available, the most essential point one can glean from this research is the fact that schools, universities, and companies all struggle to adjust to a very different economic future that places new emphasis on holistic thinking.

Infusing ESD into College Courses

In countries where no nationwide curriculum changes for ESD have been launched, it is up to each institution to address the issue. Down (2006) conducted participatory action research at the Institute of Education at the University of the West Indies, Jamaica, to investigate the challenges of infusing concepts of sustainability into two courses, a basic introduction to computer course and a specialist course on Caribbean literature. Using mainly qualitative research methods, such as field notes, journaling, observation, and unstructured interviews, Down acted as researcher and participant simultaneously, instituting action and researching the project at the same time. Other participants included staff and students who took the classes that were infused with sustainability issues.

Down's findings imply that it was challenging to convince the staff to address sustainability in their courses. The project staff was skeptical at first; however, after

researching the issue they also found that strands of ESD already existed in some courses, but that this fragmented method was not very useful because the literature on ESD emphasizes the need for a holistic approach, a transformation of the traditional way of teaching. The findings also suggest that one major challenge of integrating ESD into a course pertains to student expectations regarding course content. According to Down, students select courses with specific expectations about the content, for example, learning basic computer skills, and are disappointed and frustrated when they are also asked to learn about sustainability. In this study, students felt that they had "received an overload of facts and figures on sustainable issues" (p. 395) that Down attributes to the lecturer's "overzealous" (p. 394) teaching style, which instead of using a more constructivist approach, burdened students with too much information on sustainability. Other findings pointed to the challenge of balancing syllabus demands with additional content on ESD and moving from a small and personal initiative to policy affecting the entire college curriculum.

Down's study offers valuable insights into the actual process of infusing ESD into specific courses and across the curriculum. In particular, the information about the students' perspective is invaluable for anybody concerned with the inclusion of sustainability concepts into all college courses. Since Down never mentions how many staff members, or lecturers, and students were involved in the study and how journals and other documents were analyzed, it is difficult to comment on the validity of the study's findings. This lack of more specific explanations regarding data collection and analysis makes it difficult to conduct a similar study at another institution and to compare and contrast findings. As it turns out, this weakness is rather common in studies on this topic.

Corcoran, Walker, and Wals (2004) who conducted a meta-analysis of 54 papers on sustainability in higher education, 28 of which were based on case study methodology, found that many lacked adequate information on data collection and failed to critically analyze the case, thereby reducing their "potential for improving the field" (p. 7).

Another study on attempts to implement sustainability into the curriculum was done by Moore (2005c), whose case study focused on the undergraduate programs at the University of British Columbia, Canada, an early signatory to the Talloires Declaration (1990) and the Halifax Declaration (1991). Moore conducted one-hour long semi-structured interviews with 30 participants. In the first round of interviews, Moore talked to sustainability activists on campus to learn more about their efforts of designing sustainability education programs. In the second set of interviews, Moore sought out those in decision-making positions, whom she considered "change-agents" (p. 181) to find out what they thought about sustainability education. After Moore completed the transcribing, she offered all participants a chance to look over and edit their contributions because she wanted all interviewees to be comfortable with their comments since she planned on publishing her findings. This extra step, which must have been quite time-consuming, shows that Moore strongly believes in the participatory nature of her research. Moore also triangulated data from the interviews with her own observations and policy documents the university had issued.

Moore's findings confirm a concern other researchers (Haigh, 2005; Herreman & Reid, 2002; Martin & Jucker, 2005) have voiced. The fact that an institution signs a sustainability declaration does not automatically mean that the necessary policy changes will be made public and will be enacted on a broad scale. Moore, for example, found that

many people were aware of the visible aspects of sustainability and "were quick to talk about recycling and green buildings" (p. 183). However, only a handful knew that the policy also included a less tangible curriculum component that focused on teaching students, staff, and faculty about sustainability and encouraged them to adopt new values associated with ESD. This narrow interpretation of sustainability is a frequent misconception, Moore writes. She also found that sustainability was not a major concern for most of the participants she spoke with. People were preoccupied with their daily duties and only a handful said that they "had sustainability on their minds on a daily basis" (p. 184). The majority of participants believed that the university could be an important model. At the same time, many expressed their doubts and wondered if the university was ready for it. Most participants also criticized the policy for being difficult to enforce. In the end of her report, Moore poses the question whether universities can ever put theory into action but notes that the movement is under way and that she feels "optimistic" (p. 196). Since Moore decided to remove any job titles or associations of the participants to guarantee their anonymity, one cannot draw any conclusions about differences between the first and second group of interviewees. On the other hand, such separation might not be helpful anyway since the successful implementation of sustainability has to be approached in a holistic manner.

Addressing Sustainability in Psychology Courses

As the previous examples of efforts to infuse ESD into the curriculum have shown, there are many challenges. The field of psychology can serve as another example. Surprisingly, the natural environment has not been considered part of psychology because the field has not had a specific subcategory in which scholars studied people's relation

with nature. As Koger and Scott (2007) point out, some researchers (Kaplan & Kaplan, 1989; Cialdini, 2003; Geller, 1987, 2002) in behavioral, social, cognitive, and developmental psychology have researched connections between humans and their environment; however, it was not until the 1990s that a new generation of researchers called *eco-psychologists* started studying the impact of psychological distress caused by prolonged deprivation of proximity to nature.

Still, many instructors of psychology are not aware that environmental sustainability and psychology intersect (Koger & Scott, 2007). For instance, a few years ago when I proposed to write the term paper for an educational psychology graduate class (a required course in my doctoral program in higher education) on the connections between environmental sustainability, human psychology, and higher learning, the professor told me that sustainability was not considered a psychological construct and that I had to select a different topic. I was disappointed about the professor's quick dismissal of my idea because I had been looking forward to examining this aspect of ESD and receiving feedback from a psychology expert. I was also surprised because to me the relationship between educational psychology and sustainability seemed to be a relevant and fascinating topic. I ended up writing my paper about designing effective multimedia learning objects in foreign language instruction, an intriguing area of research but one that is thoroughly tied to the existing neoliberal paradigm of solving problems with the help of technological advances as opposed to critically examining humans' increasing reliance on electricity-powered and petroleum-depended learning tools. I learned from this experience that change happens incrementally and that faculty members' attitudes,

beliefs, and teaching practices concerning ESD play a significant role for the success of the Decade of Education for Sustainable Development.

To encourage psychology faculty to infuse some sustainability content into their courses, Koger and Scott (2007) offer several suggestions for how traditional sub-disciplines of psychology could be used to explain people's environmental behavior. To cite an example from cognitive psychology, they reason that humans evolved in surroundings that differed greatly from today's largely urban experience. Because of these established "perceptual and cognitive systems" (p. 12), people pay more attention to visible threats, such as belching smokestacks, at the expense of reacting to more imperceptible dangers, such as neurotoxins in fish, or delayed perils like global climate change. This theory may also explain why participants in Moore' study above (2005c) showed more awareness of visual evidence of sustainability, for instance, recycling receptacles on campus than of invisible curriculum strands that dealt with ESD.

According to Koger and Scott, programs and therapies that focus on behavior modification can be used to make people aware of their compromised perceptions and lead to healthier lifestyles and more considerate environmental behavior. Pointing to the fact that people's behavior presents the primary reason the environment is being destroyed, the researchers call on all psychology instructors to "start contributing to undergraduate education concerning sustainable solutions" (p. 15).

ESD at a Business and Economics School

The question of how to best address the challenge of ESD at the tertiary level concerns educators around the globe. A case study from the University of Jyväskylä, Finland, conducted by Pesonen (2003) describes and assesses the implementation of a

corporate environmental management program at the university's School of Business and Economics with the objective of detecting distinct phases of the program's development, identifying achievements and barriers, investigating the gradual building of program content, and, finally, creating a set of guidelines that other business schools intending to start a similar program may find useful. Having served as researcher, senior lecturer, and professor in the program, Pesonen, who eventually became responsible for the entire program, used participatory observation combined with document analysis to collect data for this case study. To sum up the findings, during the first phase from 1995-1999, the university expanded its offerings of master's programs that emphasized environmental stewardship and social consciousness as it became clear that companies were looking for graduates who possessed an understanding of the inherent environmental and social responsibilities of businesses in the 21st century.

In the second phase from 1999-2000, a funding shortage briefly challenged the program, leading to cuts in teaching staff until only one member was left. Admittance of new students was suspended and course offerings were drastically reduced. Despite this predicament, the graduates of the program continued to find employment and the employers signaled that they valued the program. This eventually led the school to reconsider its strategic planning and permanent funding for the program was secured. The end of this fiscal crisis marked the beginning of the third phase, which extended from 2001 to the present. During this time, the School of Business and Economics assigned the program a stable position in its curriculum, which now involves all three aspects of sustainability: economical, environmental, and social. A new compulsory course introduces undergraduate students to environmental sustainability issues. In addition, the

school offers some specialized courses in the junior and senior years, and at the graduate level, students can enroll in advanced studies in corporate environmental management.

In relating the history and unfolding of the case in study, the author's personal involvement and interest in the success and recognition of the program at times distract from the actual case study. For instance, several paragraphs showcase the success of the program' graduates in the labor market and the awards that the school received for integrating sustainability into its business curriculum. Then there is the description of the school's exchange student program, which reads more like a promotional brochure than a research report because of Pesonen's choice of expressions such as "extensive exchange student program," "very famous among exchange students," (p. 162) and her asserting that most foreign students come to Jyväskylä because of its unique program in environmental management without giving evidence as to how this information was obtained.

In the second part of the case study when Pesonen writes about the content building of the program's curriculum, a more reflective approach may have worked better. For example, when illustrating the last of three content levels in the graduate program, I expected to read more on how faculty tackle the dangers of corporate "green washing," the deliberate attempt of companies to market their products as environmentally friendly or beneficial when they are really not, and related dilemmas inherent in aligning the objectives of the corporate world with the needs of the environment and people. When summarizing the lessons learned and offering advice about implementing similar programs, Pesonen's passion is obvious as she mentions not only once but twice how "proud" (p. 169) she is of what she and her colleagues have

accomplished. What she does not address is how and why faculty members and administrators bought into the new curriculum, which is most often the greatest barrier to integrating ESD in colleges and universities.

In conclusion, this case study demonstrates how a Finnish university has approached the inclusion of ESD in its business school curriculum, but the author never offers a rationale for why ESD is so vital other than for satisfying the demands from employers and consumers. In other words, the issue is viewed solely from an anthropocentric perspective that understands sustainable development not as a necessary paradigm shift toward a more eco-centric view of the world but as the corporate answer to an economic challenge. In the next section, the underlying reason for this market-driven approach will be examined.

ESD vs. Neoliberalism

The idea to quickly "green" our companies, schools, and entire cities virtually overnight is associated with market-driven policies as promoted by neoliberalism. Neoliberalism is a political philosophy that promotes free markets and privatization while seeking to limit government interference in economic affairs. Adherents to this philosophy emphasize individual responsibility and oppose public welfare; they believe that all economic endeavors ought to be privatized. Aside from privatizing business, neoliberals also support the conversion of traditionally public services, such as "education, garbage collection, prison building and operation, and cultural production" into private for-profit enterprises (Duggan, 2003, p. 12). Some companies specializing in bioengineering have even begun to privatize nature in the form of patented genetically modified organism that can be traded (Girona Declaration, 2002). Furthermore,

proponents of neoliberal policies assert that states should build and maintain institutional structures ensuring that markets can function properly, but they argue that states should not interfere with these markets once they have been created since governments lack sufficient information and are prone to be influenced by "powerful interest groups" (Harvey, 2007).

Neoliberals understand the market as ultimate guide. For example, when consumers demand "green" products, the market must respond quickly or else companies risk valuable market shares to "greener" competitors. Instead of reflecting deeply on the connections between humans, the environment, and the economy captured in the idea of a 'triple bottom line' (people, planet, profit), many business leaders, politician, and school administrators go for the cost-effective, superficial get-green-quick option. Huckle and Sterling (1996) believe that this form of liberal ideology promotes only "weak sustainability" that is based on "egocentric values" (p. 10). While one might expect such a profit-centered reaction from businesses, whose main purpose is to generate money, it is somewhat disheartening to learn that changes in the education sector are mostly cosmetic, too.

After reviewing New Zealand's contributions to the UN DESD, Chapman, Flaws, and Le Heron (2006) concluded that despite being a signatory to the UN DESD, changes in New Zealand's educational curriculum were incremental and limited. New Zealand's curriculum, they write, is largely driven by a neoliberal ideology whose principal objective lies in preparing students to compete in the global economy. Although the environment has been considered an issue that is supposed to be integrated in the curriculum, the New Zealand's Ministry of Education ranked economic development as

the number one goal. In a 2002 document released by the ministry, ESD was recognized as a theme worthy of inclusion, yet when the government issued their Educational Priorities 2003-2006 report, ESD was not even mentioned.

In the primary and secondary school levels, Chapman et al. (2006) found that projects focused on simplistic topics such as "tree planting, litter schemes, worm farming and composting" (p. 287), while they neglected to critically examine social and economic values that perpetuated behavior schemes detrimental to the environment. At the post-secondary level, an increase in courses with the word 'sustainability' or a related term could be documented. By 2004, New Zealand's universities offered 46 such courses to their undergraduate and graduate students. Chapman et al. also looked at masters and doctoral theses published between 1993-2004 that featured 'sustainability' in the titles but concluded that interest in research on sustainability was sporadic and not indicative of the kind of commitment necessary to advance the issue of ESD according to the UN DESD agenda.

The research team's interview with the UN DESD Steering Committee revealed some of the same resistance experienced by other sustainability pioneers who deal with large educational institutions: a general lack of interest in the sustainability agenda, resistance to change, and a clinging to the "existing paradigm" (p. 289), in which global economic competitiveness ranks supreme. At the lower levels, the major obstacles to serious curriculum changes are operational in nature. Here the time schedules and modes of assessment inhibit the implementation of ESD the most. At the university level, the division of disciplines presents the greatest challenge. Overall, Chapman et al. concluded that the goals of the UN DESD would not be achieved as long as neoliberal thinking

continued to shape New Zealand's policy and inform the strategic planning of the Ministry of Education.

Historically, Greenwood and Levin (2003) contend, research in universities has largely been determined by the interests of the researchers and their particular agendas. While academic freedom is vital for research, many professors have dedicated an inordinate amount of time and energy to studies whose results have little application and value outside of the circle of colleagues from the same field. In recent years, public demands for accountability have increased and professors now must show that the funds they spend on research yield "useful" results (p. 135). It would seem that research that enhances our understanding of sustainable development would be considered extremely valuable; however, as Chapman et al. (2006) have shown, this is not necessarily the case.

This is not to say that studies do not consider pressing social issues, but attention is often diverted to topics that further the reputation of the researcher among his or her peers without much conceivable benefit for society. Whether it is because of personal "academic careerism" (Greenwood & Levin, 2003, p. 136) or the more general trend to value neoliberal ideas of letting the market decide what will be useful for society, ESD still has not received the boost it deserves. In other words, communities around the world are still waiting for higher education to make ESD a top research topic of the 21st century. Firmly entrenched in the old paradigm, most universities continue to follow the established road of securing research dollars from businesses and government agencies that insist that the planet is inexhaustible and measure the usefulness of their investment in terms of how well global competitiveness can be attained and maintained.

One of the fundamental principles of sustainability is the idea that environmental damage can reach a point at which it becomes irreversible. Neoliberals often point to the Kuznets curve, which suggests that social inequality is an inevitable and temporary byproducts of developing nations and which posits that countries usually become equality oriented and thereby also more environmentally conscious once they have reached a certain national income level (Common & Stagl, 2005; Reed, 2002). Reed, who works for the World Wildlife Fund International (WWF), however, believes that these assumptions can have disastrous effects because nature, once pushed over the edge, cannot recover. In other words, a developing country may eventually achieve its economic goals, but the loss of biodiversity incurred until then cannot be turned around. When the outcome of a policy can have detrimental and irreversible consequence, Reed argues, the precautionary principle ought to be applied to prevent the worst. Educating current and future generations for the challenges that may lie ahead should be regarded as a sensible and protective measure.

Coté, Day, and de Peuter (2007) express concern about the current state of academia in the age of neoliberalism and globalization when they ask how universities can avoid the push from corporations to graduate students who are nothing more than "docile producer-consumer-citizens" (p. 317) in a market-driven global economy. According to the authors, neoliberalism promotes exploitation and increases social injustice by moving environmental destruction and polluting manufacturing to developing countries, which become producers of cheap but low-quality goods that accelerate unsustainable consumption and environmental degradation. Universities have become a part of this system of "interlocking oppression" (p. 319) because they accept

monies from questionable corporations and kowtow to the corporate mentality. Faculty are witnessing increasing job insecurity as temporary appointments replace tenure track positions, and students have to deal with rising tuition while juggling work, family obligations, and their studies. Given that universities have historically been not only the producers of knowledge considered useful to corporations but also critics of the system, Coté et al. call on academics not to become despondent but to embrace the situation as a challenge and motivation to find alternative solutions.

Not everybody is that optimistic. Kahn (2008), for instance, belongs to a group of critical educators who have begun to doubt that international institutions can envision the notion of growth limitations without drawing on neoliberal policies. Even sustainable development, which Kahn writes is presented as a means to improve the lives of the rich and the poor while protecting ecosystems, is an imperfect strategy since today's average use of resources already exceeds the Earth capacity. In the current climate, ESD could end up as a "seductive pedagogical 'greenwash'" (p. 7) unless critical educators use the momentum to press forward with what he calls "a radical ecopedagogy," which stands in opposition to neoliberal forms of globalization and which promotes "collective ecoliteracy" and "culturally relevant forms of knowledge grounded in normative concepts such as sustainability, planetarity, and biophelia" (p. 8).

It is evident that higher education institutions must address this obvious incompatibility of sustainability and neoliberal policies if they hope to attain the goals set by UN DESD. Solving this dilemma, examining existing and alternative patterns, and creating new sets of knowledge will be something that colleges and universities have to confront.

This confrontation will not be easy because humans are genetically predisposed to oppose change, as Black and Gregersen (2008) suggest. Hence, it will be rather demanding to prepare students for an uncertain future and cure people's inability or rather unwillingness to recognize the fact that the current paradigm is unsustainable. Historically, this resistance to change has helped humans avoid falling victim to the randomness of the natural selection process. For the most part, relying on established patterns, for example, not eating foods that have caused one indigestion in the past is a healthy, invaluable trait. On the other hand, clinging to the idea that humans should consume protein in the form of fish while fisheries worldwide are collapsing does not make any sense at all, yet threatened fish species continue to be caught, processed, sold, and eaten every day.

Change is not only happening faster than previously, its magnitude is growing exponentially, too. Suddenly, the failure to switch to a new operating system does not mean that a company loses customers only locally; now international market shares are at stake. The consequences of ignoring potentially destructive environmental trends are even direr as entire species are at risk of becoming extinct. While Black and Gregersen chiefly examine the issue from a business viewpoint, the principles they describe apply to resistance toward change within educational institutions as well as companies since both are run by human beings.

ESD and the Role of Faculty

A famous quote by Leo Buscaglia states that "Change is the end result of all true learning" (Buscaglia, n.d.). As a professor in the Department of Special Education at the University of Southern California, Buscaglia knew firsthand that becoming educated

meant changing. Faculty members are agents of change, and many sustainability scholars regard them as crucial to the success of ESD.

As mentioned earlier, it is widely assumed that the concept of ESD falls within the domain of environmental education. Acknowledging this presumption, Reid and Petocz (2006) decided to investigate the ways in which academics understand sustainability within the context of their own fields. The proposal to make sustainable development a key issue of all levels of education and across all disciplinary domains as presented at the 2002 Johannesburg Earth Summit served as an impetus for the team's qualitative study. Using a phenomenographic approach that focused on how the lecturers understood and assigned meaning to the phenomenon of sustainability education, Reid and Petocz conducted a series of in-depth, open-ended interviews with 14 university lecturers from a range of disciplines who taught post-graduate students at Macquarie University in Sydney, Australia. All participants were volunteers. The team deliberately excluded those faculty members who were already involved in environmental sustainability because they hoped to gain a better understanding of how academics in other disciplines thought about the ideas of "sustainability" and "creativity" (p. 111).

Reid and Petocz (2006) analyzed the transcribed interviews according to two categories: the lecturers' conception of teaching in the context of sustainability and their conceptions of sustainability in the context of teaching. In the former category, the researchers were able to distinguish three hierarchical conceptions: disparate (teaching and sustainability are entirely unrelated ideas), overlapping (the idea of sustainability can be incorporated into lessons, however, only to a limited extent), and integrated (sustainability is a vital part of teaching and the two are intrinsically linked). In the latter

category, Reid and Petocz also identified three conceptions: (a) Distance (sustainability exists as a concept but engagement is avoided), (b) Resources (the focus is on material, biological or human resource management), and (c). Justice (sustainability represents the idea of fairness between generations and/or different groups and nations). The authors then developed an "outcome space for the conception of teaching for sustainability" (p. 118), a 3 x 3 table featuring the nine possible combinations. They point to the fact that they expected that the participants' answers would place them into the diagonal categories of the table. In other words, a lecturer who felt that sustainability and teaching were disparate concepts would most likely also regard sustainability as a concept but fail to engage with it, whereas a lecturer whose understanding of sustainability and teaching could be called "integrated," would also fall into the "justice" category.

Contrary to the team's a priori expectations, however, the transcripts showed that participants did not always neatly fit into the diagonal categories of the table, meaning that the extent to which professors considered sustainability to be related to their subject area did not always correlate with a deeper engagement with it in the classroom. Additional interviews with these "outliers" may have provided the research team with some explanations for their unexpected findings. To conclude, despite the limited number of participants, Reid and Petocz' study presents a clear framework that can help us understand the different attitudes of faculty members toward sustainability.

Curriculum Development

Cotton, Warren, Maiboroda, and Bailey (2007) examined how university lecturers view the issue of ESD in the context of curriculum changes and appropriate pedagogies. Operating under the assumption that for ESD to be infused successfully across the

curriculum it is essential that faculty not only comprehend the concept of ESD but also consider it significant and suitable for the higher education curriculum, the team researched what lecturers' positions regarding sustainable development actually were. The case study was conducted at the University of Plymouth, England, an institution that serves 30,000 students on three campuses. Cotton et al. approached the study in two stages: with an online survey of lecturers across the university and through in-depth, semi-structured interviews with a stratified random sample of 20 lecturers who had volunteered to participate. (Due to the fact that the analysis of the interview data had not been completed at the time the article was published, the results are not included here.) The survey instrument consisted of statements concerning views on key elements of and attitudes toward ESD. The third category of the questionnaire focused on lecturers' beliefs about incorporating ESD into the curriculum. It was sent to all lecturers in the institution's eight faculties/schools in the fall of 2005. Although the survey was available for a month, a response rate of only 29% (n=328) was obtained. Admitting that the rate appears low, Cotton et al. contend that when compared to similar online surveys, the response rate ranks within the acceptable range. Regarding the balance across disciplines, response rates were found to be overall relative to the number of lecturers in each department.

The results showed that when rating their understanding of sustainable development, most lecturers selected the middle positions of the 5-point Likert scale. Only 5% rated themselves as having poor understanding of the concept, while about twice as many lecturers (11%) felt they had a very good understanding it. No significant difference between males or females could be detected, and surprisingly, there was also

no significant difference between the various disciplines even though ESD is clearly more associated with some faculties than with others. Most respondents agreed strongly with those statements that focused on the environmental aspect of ESD. The least agreement was found with statements that called the existing economic and social systems into question. The latter also drew the highest numbers of 'neutral' answers; a finding that Cotton et al. believe to reflect participants' "significant uncertainty" (Cotton et al., 2007, p. 586) regarding the more radical positions of the sustainability continuum. Concerning the attitudes toward ESD, 60 % of lecturers found ESD to be a "good thing", and 20% even chose the "passionate advocate" category to describe themselves. A mere 2% considered ESD a "waste of time and effort" (p. 587-88). As for the final category of the survey, 55% of lecturers stated that they either agreed or strongly agreed with the idea that ESD was a vital part of their subject area and teaching. Thirty-five percent selected the neutral responses, indicating again a notable doubt as to whether one's teaching was connected to ESD. Cotton et al. note that astonishingly when it came to the individual subject areas, no significant bias could be detected. Contrary to expectations, the obvious relevance of ESD to certain subject areas, such as environmental science and biology, had no impact on the way respondents answered.

Despite the incompleteness of this study due to the absence of the yet to be published results of the interview portion, and the limited generalizability of case study research, the study can point to several findings. First, most lecturers self-reported a medium level of understanding the concept of ESD. Second, a tendency of faculty members to associate ESD with environmental issues as opposed to social and economic ones could be established. Finally, the results suggest that the subject background of

lecturers was not related to their favorable opinions regarding the relevance and importance of incorporating ESD across the curriculum. In summary, this study, though incomplete and perhaps limited due to reliance on self-reports as opposed to more objective measures and observations, provides pertinent baseline data as well as information on general tendencies regarding faculty's views about ESD in higher education.

The conviction that higher education academics play a critical role in teaching sustainability lead Carew and Mitchell (2006) to question how professors' preconceptions of sustainability informed their curriculum development and teaching. Pointing to research on teachers' conceptions about what it means to teach and learn a subject, Carew and Mitchell underscore the notion that an instructor's belief about the subject matter notably impacts his or her decision making concerning the course content and method of delivery. Assuming that sustainability can be understood in multifaceted ways, the researchers felt a need to explore faculty members' understanding of the term. In the study, eight engineering academics from the University of Sydney who had volunteered were interviewed in depth for 45 minutes to 1.5 hours. The goal was to elicit the participants' general ideas and conceptions of sustainability as opposed to assessing their knowledge about the topic. The researchers probed specifically to generate answers that reflected the participants' conceptualization of the three aspects of the issue: environmental, social, and economic sustainability. In their subsequent data investigation, Carew and Mitchell conducted a metaphor analysis to group the academics' preconceptions of the target term.

The analysis identified four distinct metaphors that the participants associated with the term: sustainability as weaving, guarding, trading, and observing limits. The *weaving* metaphor was interpreted to signify that the participants believed that sustainability meant to "create a cohesive but flexible whole" (p. 224). The *guarding* metaphor centered on the assumption that sustainability involved the conservation and protection of limited resources. The *trading* metaphor primarily related to the social justice aspect of sustainability in that the measurable costs and benefits of a transaction became apparent. Here, the ideas of winning, losing, and compensating surfaced repeatedly in the interviews. The fourth metaphor, sustainability as *observing limits,* emphasized the finite nature of systems and the necessity to acknowledge these confines. Unlike the first three metaphors, the last one indicates a shift from an anthropocentric worldview to a bio-centric or eco-centric one that focuses on the natural world instead of on humans.

The findings of this study show that even within a small group of people, considerable disparity regarding the concept of sustainability exists. The authors reason that this suggests that no single metaphor can explain a phenomenon as complex as sustainability, and that students should, therefore, be exposed to the concept through a variety of metaphors. Carew and Mitchell's metaphor analysis enriches the literature on sustainability by adding a new lens through which the concept can be understood. As this study draws conclusions from a very limited number of participants, one might consider replicating it with more participants to either elicit similar metaphors or to generate additional ones. Furthermore, it would be interesting to explore if similar or different

metaphors could be distilled when interviewing faculty from disciplines outside the field of engineering.

Professional Development

The goal of formal education is to pass knowledge from one generation to the next and to construct new sets of knowledge that fulfill the demands of the present and the anticipated needs of the future. Professional development programs can help educators understand the concept of sustainability and also provide them with a forum in which this new concept can be explored. Holdsworth, Wyborn, Bekessy, and Thomas (2008) argue that faculty members play a pivotal role in constructing, or learning, and then teaching the values and frameworks related to sustainability. However, they also believe that content knowledge alone is not enough. Instructors also have to learn which teaching techniques work best. The shift toward sustainable development requires that humans commit to lifelong learning to adapt effectively to their changing environment. For higher education institutions this means that faculty members need to be exposed to ESD and encouraged to address the issue in their courses.

One of the earlier studies addressing professional development for educators was published shortly after the Intergovernmental Panel on Climate Change (IPCC, 1996) had issued a report that underscored the link between human activities and global change. Grounding her research in the belief that education can positively influence people's environmental behavior, Carter (1997) conducted a study to assess the effectiveness of a professional development workshop on participants' environmental behavior and their commitment to curriculum change. The sample consisted of 79 informal and formal educators from the United States, Canada, and the U.S.-affiliated Pacific Island entities

who attended a two-and-a-half day videoconference that was held in seven locations and consisted of live and pre-recorded programming on issues related to climate change, ozone depletion, resource management, and ecosystems. The program offered a national component as well as regional workshops that consisted of discussion with local experts on regional topics and other activities. Of the 315 conference attendees who had responded to the surveys consisting of a questionnaire with open-ended questions that were administered at the beginning and end of each videoconference session and at the end of the conference only 79 replied to the post-test eight months later.

The results revealed that 65% of respondents reported that they had made personal behavior changes such as recycling more and 56% answered that they had made professional changes, for example, using teaching materials provided at the conference. As a result of attending the conference, 95% of the participants felt more confident discussing global environmental change issues, and based on that increased confidence, a statistically significant number reported that they had revised their curriculum to reflect their newly gained insights. In discussing these findings, Carter points out that for professional workshops such as this one to have an impact on educators, they need to be interdisciplinary, contain both national and regional elements, provide comprehensible scientific content, and use a variety of teaching strategies to accommodated different learning styles.

Although the results of the study document the impact of the workshop on this sample of educators, the non-salient response rate of 25% limits the generalizability of the findings to the population. The fact that even after prompting, only a quarter of the workshop attendees chose to respond to the follow-up questionnaire could also indicate

that those who took the extra time were more satisfied with the workshop and therefore more inclined to attribute their behavior to the impact of the workshop. Furthermore, because participation in the workshop was voluntary, educators who selected to attend may have been biased toward caring about environmental issues. On the other hand, a certain bias can be expected since most professional development workshops, except for a small number of mandatory ones, are attended intentionally and therefore reflect the interests and biases of participants.

Around the same time, Green (1997) conducted a related study to measure the effectiveness of a series of environmental literacy workshops for instructors at Broward Community College, Florida. Participants in the experimental group consisted of 20 full and part-time faculty who had voluntarily signed up for the workshop and a randomly selected control group (n = 22). Green then created a non-equivalent control group design with a quasi-experimental pretest and posttest as well as a second delayed posttest, which participants had to take four months later, to determine the effect of the series of workshops. To measure the level of environmental literacy of participants, Green used the Wisconsin Environmental Survey (WES), which had initially been developed to assess the environmental literacy of high school students but which had also been used with adults.

Green then conducted a t-test to establish that there was no significant difference in the two groups' pretest scores. After all tests had been administered, the results revealed that the workshop series had successfully raised the environmental literacy level of participating faculty on affective, cognitive, and behavior-related dimensions. On the posttest and the delayed posttest, the scores of workshop participants were significantly

higher than those of the control group, suggesting that the workshops had been effective and that the attained level of environmental literacy persisted four months after the completion of the series. Since Green conducted the research a decade ago, when the concept of sustainability was not yet widely discussed, the study mainly focused on the aspect of environmental sustainability and not on the economic and social facets of sustainable development, which are now considered integral parts of the sustainability discourse. On the other hand, the study is unique in that it specifically focuses on faculty at a community college, a group of educators that has been largely ignored in other studies on education for sustainability at the tertiary level.

At Emory University, Georgia, the Piedmont Project has been a vehicle to present information on ESD to faculty and to cultivate teaching practices that encourage sustainability and promote community engagement. The project, which was inspired by the Ponderosa Project at Northern Arizona University, began in 2001 with a group of 20 faculty members (Eisen & Barlett, 2006), who each selected to either develop a new course or enhance an existing one around the issue of sustainability. The project includes a two-day workshop in early summer facilitated by Eisen and Bartlett and participants from earlier sessions during which sustainability specialists present. The participants also engage in group discussion and a guided field trip. Over the summer, faculty members then develop or enhance their courses and also write a rationale explaining their decisions. They are compensated with a stipend once they submit their assignments. At the end of the summer, the faculty members visit several locations significant for sustainability education, and they also talk about their curriculum development experience. The Piedmont Project concludes with a follow-up dinner two semesters later,

which allows participants to discuss the outcome of their sustainability courses and learn from others' experiences.

Eisen and Bartlett assessed the impact of the Piedmont Project on the five cohorts that had participated since the inception with a mixed methods study that included an e-mail survey administered a few days after the workshop and 30-minute to 2-hour in-depth interviews with all participants of the first and second cohorts. The surveys, which featured qualitative questions and ratings of specific workshop modules, received an average response rate of 76.6%; however, the authors did not specify what those ratings were or what type of scale they used to measure responses. An additional online survey measuring the long-term effect of the project was given during the 4th year to the first three cohorts (n=51). A response rate of 82% was obtained. The researchers found that over 100 new or enhanced courses at different levels had been developed by faculty who had participated in the Piedmont Project. Moreover, one project participant began a revamping of the university's medical school curriculum in order to connect health issues to the "biosphere" (Eisen & Bartlett, p. 30).

With regards to pedagogical innovation, 75% of participants reported that they had significantly changed their teaching methods to include more field trips. According to Eisen and Bartlett, these findings underscore the notion that sustainability education is "experiential, interdisciplinary, problem-based education" (p. 31). Some participants also mentioned that their experience in the Piedmont Project caused them to think about course contents and teaching methods in a fundamentally new and deeper way that made them ponder the ethical impact of their daily lessons and routines. The overall outcome of the Piedmont Project, Eisen and Bartlett argue, is that it has caused a ripple effect in the

community, leading to measurable changes in curriculum and methods and thereby potentially affecting not only gradual institutional change but also change in the personal actions of students, faculty, and staff.

The project also faced some challenges; for instance, it was difficult to gather material that would engage all participants equally since faculty member differed in their previous knowledge of sustainability. Some participants also responded that they had been unable to teach courses that they had designed because of low enrollment or delays in course approval procedures. The authors conclude that the most challenging part of the project is the development of an appropriate assessment tool to measure the impact of the Piedmont Project on students. If one looks at this project within the larger context of the UN DESD, it becomes clear that the frustrations tied to finding adequate outcome measurement tools are experienced by other researchers and program managers worldwide (To, 2006). Despite these inevitable obstacles, the Piedmont Project appears to support the idea that professional development on ESD for higher education faculty, if planned, administered, and assessed properly, is one of the cornerstones of successful implementation of the UN DESD.

The last study on professional development programs that will be discussed here is a very recent one conducted in Australia, where many institutions have either signed the Talloires Declaration or become members of the Australasian Campuses Towards Sustainability (ACTS). Since Action 2, Action 4, and Action 7 of the Talloires Declaration directly pertain to professional development, Holdsworth et al. (2008) argue, one would expect that professional development programs for sustainability existed. In order to examine this hypothesis, the team conducted a web-based survey of 38

Australian universities to examine how many and what type of professional development programs with a sustainability focus there were. Based on the assumption that universities show their commitment to sustainability by creating and maintaining Web pages with related content, the team used the key words "sustainable, sustainability, or environment" (p. 138) to analyze and count any formal professional development opportunity mentioned on the schools' teaching and learning Web pages. The researchers also looked for evidence that the universities' were either signatories to the Talloires Declaration or belonged to Australasian Campuses Towards Sustainability. The results revealed that information on professional development was available online at 36 institutions; however, only one university offered a professional development course on sustainability to its faculty.

One could argue that Holdsworth et al. would maybe have been able to find other professional development dedicated to ESD if they had included other sources besides the universities' Web pages. On the other hand, the fact that all but two schools did publish information on available professional development courses online makes it difficult to discredit their choice of method. This is after all the computer age, so I would assume as well that signatories of the Talloires Declaration or members of the Australasian Campuses Towards Sustainability would have everything they considered important information for faculty, students, and staff available on their official Web site.

Holdworth et al. close their article with the same argument other sustainability researchers such as Orr, Sterling, Eisen and Barlett have made before: the necessary change toward sustainability depends on changes in curriculum and teaching practices, which will only occur if institutions of higher education move beyond lip service and

mere document signing. To infuse sustainability into all levels of education, a goal the Australian Government has officially declared, faculty must be provided with professional development opportunities focusing on sustainability and suitable teaching methods.

In conclusion, professional development is a cornerstone of advancing the goals set forth by the UN DESD. In *My Pedagogic Creed,* Dewey (1897, Article V) wrote:

> I believe that it is the business of everyone interested in education to insist upon the school as the primary and most effective interest of social progress and reform in order that society may be awakened to realize what school stands for, and aroused to the necessity of endowing the educator with sufficient equipment properly to perform his task.

Sufficient tools, be they a blackboard and chalk or professional training, are indeed central to the transformative possibilities education provides. Institutions need to provide faculty with ample opportunities to explore what ESD means to them and to create chances for professors to enhance their knowledge, exchange ideas with other educators, begin networking, and discover new teaching methodologies.

Community College Faculty

The notion that the attitudes, beliefs, and practices of community college faculty differ from the perceptions of faculty at 4-year institutions is an underlying assumption of this dissertation. The idea is based on my personal experience as a community college professor who regularly interacts with other professors from a variety of higher education institutions, and it is supported by the reports and studies discussed below.

As previously mentioned, community colleges represent a significant portion of the higher education pie in the United States. They employ 43% of all faculty members, and they are charged with educating almost half of all undergraduates (Townsend &

Twombly, 2007, p. 1). Because increasing numbers of students enroll in community colleges to satisfy some or all of their freshmen and sophomore year requirements and sometimes even to obtain baccalaureate degrees in careers such as teaching or nursing, which have been identified as being in high demand in many communities, it is crucial to learn more about the faculty who teach them. In spite of this reality, community college professors have received less attention in the higher education literature, which tends to concentrate on faculty teaching at four-year colleges and universities (Hardy & Laanan, 2006; Townsend & Twombly, 2007). Furthermore, most research on community college faculty is conducted and published by professors who work at 4-year institutions, and who, therefore, tend to use frameworks that have been devised for 4-year schools. These scholars regard research university faculty as the "norm of all faculty" (Townsend & Twombly, 2007, p. 4), a perspective that often portrays community college faculty as outsiders that are somehow inferior. As this literature review has shown, the dearth of research on community colleges and their faculty in the sustainability literature reflects this imbalance as well.

Community colleges differ from four-year colleges and universities in significant ways. For one, since the primary mission of community colleges is teaching as opposed to advancing scholarship, faculty at community colleges carry much heavier teaching loads than their counterparts at the other institutions. They typically teach five courses during the major semester, and many take on overload classes to boost their salaries. In addition, community college professors are usually required to hold ten office hours per week and to serve on department or college-wide committees. Second, unlike most 4-year colleges and universities, which admit students based on their academic merit and ability

to pay the tuition, community colleges operate under the open-door principle, which means that any student with the equivalent of a high school diploma can enroll. Community college tuition is low compared to other institutions, and the majority of students receive financial aid. Extending the opportunity of a postsecondary degree to a wider population of students is the primary mission of community colleges.

Because working conditions and expectations at community colleges are different from 4-year institutions, it is perhaps not surprising that faculty differ as well. For one, more women hold full-time positions at community colleges than at any other types of higher education institutions. In fact, female professors now make up 50 percent of all community college faculty (Townsend & Twombly, 2007, p. 14). Townsend and Twombly's report *Community College Faculty: Overlooked and Undervalued* names several contributing factors to this trend, most of which lie beyond the scope of this study. One issue, however, is noteworthy as it pertains to a key element of ESD. A study based on interviews with 30 female full-time faculty from 12 community colleges on the institutional factors influencing female professors' decisions to seek employment at a community college (Wolf-Wendel, Ward, and Twombly, 2007, cited in Townsend) found that the women's commitment to "social justice," one of the three components of sustainable development, along with their "love for teaching" (p. 15) was an important factor in their seeking a position at a community college as opposed to applying to 4-year schools.

Another difference between community college faculty and their counterparts at 4-year schools is the ratio between full-time and part-time instructors. Although they still teach about two-thirds of the courses, full-time instructors are decreasing in numbers. In

2003, they constituted just one-third of all faculty at community colleges (Cataldi, Fahimi, and Bradburn, 2005, cited in Townsend & Twombly, 2007). According to a report by the American Federation of Teachers (AFT), the highest percentage of courses taught by part timers was found in education departments at community colleges, in which adjuncts were assigned to teach 77 percent of all courses (Inside Higher Ed, 2008). While this hiring strategy affords community colleges, which are ever more pressured by dwindling state budgets, some financial advantages and flexibility, it also increases the workload for the shrinking minority of full timers, who now have to divide crucial work related to curriculum development, textbook selection, and student advising among fewer and fewer faculty members. In contrast, at public research universities, full-time faculty members (tenured or on tenure-track) still constituted 41 percent of all instructional staff (Inside Higher Ed, 2008).

Finally, community college professors have to face some unique challenges. For instance, more of their incoming students test into developmental courses as a result of the open-door policy. To illustrate, in the fall term of 2003, only 20 percent of freshmen entering public 4-year colleges had to enroll in a developmental course, whereas 42 percent of new students at community colleges needed remedial coursework (Townsend & Twombly, 2007, p. 35). For faculty members at community colleges, working with these students from lower socio-economic backgrounds presents a special challenge as instructors have to find ways to effectively bring them up to the required college entry level even though many students lack the necessary academic preparation and study skills. Actively contributing to student success is a major obligation and professional goal of community college instructors. Most community colleges require professors to be

available to students for extended office hours, usually 10 per week, outside of instructional contact hours.

This contractual requirement and the typical teaching load of 12 courses per academic year leave community college faculty less time to be involved in non-teaching activities and research. The average community college professor spends roughly 85 percent of his or her time on instruction-related activities. University professors, in contrast, dedicate only about 66 percent of their time on teaching, grading, and preparing for classes. Partly because of their heavy teaching load but also because of a lack of institutional support, few community college faculty members regularly engage in research for publication (Townsend & Twombly, 2007, p. 37), which may explain why to this date so little scholarly research on ESD at community colleges is available.

Summary

This review of the literature on ESD in higher education has shown that scholars from around the globe have begun to focus their research on ESD. The United Nations' efforts to bring the issue to the forefront and its announcement of an official Decade of Education for Sustainable Development (2005-2014) has lead to an increase in sustainability declarations and programs in higher education institutions, whose impacts are now being examined. From the limited selection of studies discussed here it appears as though researchers employ qualitative, quantitative, and mixed methods in about equal proportions, with a slight tendency toward qualitative analysis. Of 17 studies reviewed here, seven used qualitative methods, six used quantitative methods, and four were found to have relied on a mixed methods approach. In the qualitative area, case studies, action

research, and interviews were preferred, while surveys dominated in those studies that used quantitative methods.

As is often the case in survey research, low response rates marred the validity of achieved results. Except for Eisen and Bartlett's surveys conducted to study the impact of the Piedmont Project, which achieved 76.6 % and 82% response rates, all others had non-salient rates (ranging from 25% to 36%). This sobering fact is partially the reason I decided not to use surveys in my own study. On the other hand, some of the qualitative studies lacked the clear information on number and background of participants that quantitative studies usually describe in detail. Down (2006) and Moore (2005c), who both conducted action research, for example, opted to blend the responses of their participants into collective results, in part to protect the participants' anonymity but also to draw a general picture of their findings. This can be frustrating if one wants to find out more about how particular sub-groups of participants answered.

Above all, however, the literature's preoccupation with universities, except for Green's study of environmental literacy enhancing workshops for instructors at Broward Community College (1997), is the main reason I decided to place my research in the context of the community college. In the United States, 46% of all undergraduate students attend a community college, and 43% of all higher education faculty members teach at one. These are simply too many students and faculty to be ignored. Although universities arguably conduct most of the research on sustainable development, the success of the UN DESD depends on the infusion of sustainability across the curriculum of all higher education institutions, not only 4-year schools and research universities. With their immediate impact on the local workforce, continuing education programs, and

visibility in their communities, community colleges hold a unique position in higher education. The more we learn about how faculty at community colleges understand the issue of ESD in terms of curriculum development and teaching methods, the better we can help advance ESD in the field of higher education. Therefore, this study is aimed at examining the role of community college faculty in teaching and learning for sustainable development.

CHAPTER III

METHOD

The truth of life is only revealed through exchanges between many individuals.

(François Cheng)

The purpose of this study was to understand how full-time faculty members at a community college that is a signatory to the Talloires Declaration are responding to the challenge of education for sustainable development (ESD). Specifically, how they conceptualize ESD, reflect upon their role, connect ESD to their subject area, learn about sustainability and Earth Literacy, and infuse ESD in their curriculum. This chapter is organized as follows: First, the research method and a rationale are introduced. Then, the research design, the setting, and the sample are presented. This is followed by a detailed account of the instrumentation, which includes an interview guide and sample questions (Appendix D). Lastly, the data collection and analysis methods are outlined.

Theoretical Perspectives on Qualitative Research and Case Studies

Denzin and Lincoln (2008) have classified qualitative inquiry into "eight historical moments" ranging from the "*traditional*" to the most recent "*fractured future*" phase, which they claim began in 2005 (p. 3). At times overlapping, these periods represent noticeable changes in style, method, and focus evident in the narratives of qualitative researchers over the course of time. According to Denzin and Lincoln, the millennium marked the beginning of the "seventh moment," in which the discourse shifted to current issues, most notably, nation-states and globalization, which demand that researchers reexamine more traditional topics, such as race and gender but also democracy, freedom, and community in a new light. In the present phase, the authors

argue, these traditional and current issues ought to be discussed critically within the social sciences and the humanities.

Like many other topics in education, ESD is highly complex and, therefore, needs to be examined in multiple forms. In the quantitative realm, several questionnaires assessing the sustainability of college campuses and individual departments have been developed (ULSF, 2001). The Sustainability Assessment Questionnaire (SAQ) developed by ULSF, for instance, addresses the following seven categories: Curriculum, Research and Scholarship, Operations, Faculty and Staff Development, Outreach and Service, Student Opportunities, and Institutional Mission and Planning. The questions focus on a broad range of sustainability indicators such as energy conservation practices, commitment to green purchasing, recycling of solid waste, etc.

In the future, the results of these surveys can be used to help colleges establish a baseline from where they can track their success as they implement sustainable practices at their campuses. However, the gradual progress a college makes toward sustainability cannot always be measured in kilowatt-hours, tons of CO_2 emissions, or number of low-flow faucets installed. In particular in the area of curriculum development, asking "why" and "how" questions becomes very important. It is impossible to understand the thought processes that drive professional development policy and curriculum change without learning more about the personal experiences the assumptions, beliefs, and values of the people involved in these decisions.

The Issue of Generalizability

Like quantitative researchers, qualitative researchers strive to contribute knowledge to the community of scholars. The latter, however, do not place the same

value on the fact that the results of their studies can be applied to the general population. Many qualitative researchers, especially those conducting action research, claim that they are disinterested in knowledge that exists in a vacuum. Instead, they conduct studies to find solutions to real and specific challenges, focusing on particular problems that exist in an organization, a company, or an educational setting. In other words, they aim at creating "context-centered knowledge" (Greenwood & Levin, 2003, p. 150) even if this localized knowledge diminishes the chances that the results of a particular study can be used to form generalizations. According to Greenwood and Levin, positivist researchers often treat cases with unusual results as threats to a study's integrity. In order to maximize a study's ability to be generalized, these researchers seek ways to discount exceptional results. Action researchers, in contrast, embrace unique results and view them as a sign that a given generalization ought to be reexamined and, perhaps, "reformulated" (p. 150).

I conducted my study hoping that the developing themes would add to the ongoing discourse on ESD. At the same time, I sought to learn more about the particular issues that foster and impede ESD at the institution where I am currently teaching. In other words, I was mostly interested in contributing ideas and theory to the nascent field of ESD in the context of the community college in general while also gaining valuable insights into the situation at Miami Dade College. Although I did not set out to be an action researcher, I now know that I will take action as a result of what I learned.

Background to Case Study Research

The simple question "What is a case study?" that any novice to qualitative research methods may ask does not have a straightforward answer. The entry in

Longman's Contemporary Dictionary (2003) offers this brief definition: "a detailed account of the development of a particular person, group, or situation that has been studied over a period of time" (p. 228). Another definition (Yin, 1994, p.13) describes the case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context." As it turns out, however, the concept is rather vague and defies a quick explanation because different researchers recognize different types of case studies as well as different traditions. Yin (1981), for instance, enumerates three distinct kinds of case studies: the explorative, the descriptive, and the explanatory (p. 59). Depending on the objective of the researcher, he explains, the focus of the case study is tailored to specifically address the research question. In the field of education, Crossley and Vulliamy (1984) also distinguish three traditions of case studies: the anthropological, the sociological, and the type that is used for curriculum and program evaluations (p. 193).

According to Yin (1981), researchers can perform a case study with quantitative and qualitative pieces of evidence. These may include field notes, records from archives, oral reports, observations, interviews, or a combination. Many people believe that case studies are based exclusively on participant observation or ethnographies; however, Yin argues that this is a "common misconception" (p. 59). One of the problems contributing to the misinformation and confusion is that some scholars use the terms case study, educational ethnography, field study, and participant observation synonymously, while others clearly make differentiations (Crossley & Vulliamy, 1984). I have decided to call my research project a case study based on Yin's definition above since I planned to investigate a "contemporary phenomenon within its real-life context" (Yin, 1994, p. 13) in order to gain a more thorough understanding of the issue myself.

Rationale for Method

ESD is a complex contemporary phenomenon that needs to be understood in a variety of cultural, social, and economic contexts. The review of the literature has shown that the community college as a locality for teaching and learning for sustainable development has been largely overlooked. While universities and community colleges share many goals and practices, they do differ in their student body, mission, and role in the community. This case study contributes to the existing literature on ESD in higher education by focusing on the community college context. Corcoran, Walker, and Wals (2004) suggest that the case-study method "is the ideal research tool to investigate sustainability in higher education" (p. 10) because the researcher can explore an issue more deeply and adapt to the circumstances. If planned and executed well, a case study can have "transformational potential" (p. 18), the authors write. The results can be used to advance the institution where it was conducted, and they may also contribute to policy making and improvement in other institutions.

Researcher Bias

The battle over which method, qualitative or quantitative, is superior has not ended and may, in fact, never end. While some researchers recognize that both methods can be used to complement each other, many regard them as incompatible. Among the key issues debated between the two sides are "'objectivity' and 'value neutrality'" (Foster, Gomm & Hammersley, 2000, p. 215-216). In qualitative studies, the bias of the individual case study researcher presents a point of concern. As an example, Foster, Gomm and Hammersley cite several terms that a particular researcher employed to label groups of parents. The words "privileged" and "disadvantaged," the authors argue,

clearly expose the researcher's own judgments because the first term suggests that the group of parents benefited from a situation they did not deserve, while the second group was somehow "deprived of something they had a right to" (p. 217). As this example shows, the connotation of terms can easily provoke misinterpretations, which can then lead to having the entire case study declared as biased or subjective and thus unscientific. According to Janesick (1994), qualitative research "is ideologically driven" (p. 212) and, consequently, never free of bias. Because bias-free qualitative research is not realistic, qualitative researchers commonly proclaim their predisposition in their conceptual framework. Moreover, Janesick argues that researchers whose studies involve human subjects should prepare themselves for problems involving ethics because that is "part of life in the field" (p. 212).

One way researchers can identify, track, and confront their biases is through journaling. Janesick (2003) believes that researchers should use "critical reflection journals" (p. 62), where they can address their inner conflicts and predilections for certain ideologies. Peshkin (1988) also recommends regular monitoring of one's feelings during the course of a research project. He compares subjectivity to a piece of clothing that one cannot take off, a permanent layer clinging to each person. Subjectivity, he argues is always present in people's lives, whether private or professional. Peshkin contends that researchers ought to address their subjectivity during all parts of their research instead of treating it as something unavoidable. By regularly engaging in reflection activities that help them "systematically identify their subjectivity" (p. 17), researchers can become aware of their personal biases. This awareness and constant "monitoring of self" (p. 20) can help them steer clear of common pitfalls of qualitative research such as avoiding and

favoring certain types of participants or becoming too emotionally entangled with their lives. In short, when it comes to dealing with researcher bias, the solution is candor, not denial. It was, therefore, imperative to become aware of my personal values and potential biases and to consider them when selecting participants, phrasing questions, and formulating ideas.

There are several reasons why I believe that I was qualified to conduct this particular study. For one, I have an international background that allows me to view the issue of sustainability from different perspectives. I grew up in Germany, where the environment has played an important role in the political and civil agenda for many decades. I also lived in Japan for several years. It is there that I learned firsthand what the consequences and challenges of population density and limited resources mean. Many of my views about the necessity for sustainable development were shaped after I experienced much tighter living quarters, smaller automobiles, relentless recycling, fast and reliable mass transport, and a political system that actively seeks to control unbridled capitalism and uncontrolled growth.

While residing in Japan, I traveled extensively in Asia. This allowed me to see the plight of developing countries, and it also taught me to appreciate the Eastern perspective, which is based on philosophical and religious roots such as Buddhism, Confucianism, Hinduism, and Taoism. Revindranath (2007), for instance, posits that Hindu philosophy gives emphasis to "the interconnectedness between the natural environment and the human community" (p. 192). Japan's ancient Shinto religion is also grounded in an intense reverence for the natural world, endowing living beings and inanimate things with a spiritual essence, or *kami*, a term that is often translated as "god."

An awareness of these diverse viewpoints helps me better understand the cultural nuances in the sustainability discourse and allows me to grasp the magnitude and complexity of this global issue.

In preparation for this study, I conducted pilot interviews with three faculty members who had participated in Green Studies in the past. These interviews helped me in two ways. First, they allowed me to become more familiar with the technical aspects of interviewing, such as adjusting the recording settings, uploading the digital voice files to my computer, sending the files to the transcriptionist, and checking the transcribed interviews for completeness and accuracy. In one instance, the transcriptionist heard me say "emergence" instead of "immersion." Therefore, the transcript read "outdoor emergence," not "outdoor immersion," which is an extended field trip. This phonological mistake showed me that one must read and check every transcript carefully before coding can begin.

The pilot experience also permitted me to improve the interview questions and the style of the dialogue. For instance, during the interviews I noticed several superfluous or ill-worded questions that I then eliminated to improve the flow of the conversation. With each new pilot interview session, I also practiced moving toward a more flexible and constructivist style, allowing the participants to tell their stories and not controlling the direction they were taking me by relying on a rigid script. As I became more familiar with the interview questions myself, I was increasingly able to just glance at a one-page list of prompts, which then enabled me to be a more attentive listener. As a result of this practice, I felt better prepared.

The Construction of Knowledge

The Positivist assertions that reality is quantifiable and can be known solely through scientific reasoning has been challenged by postmodern and constructivist ideas that favor the notion that any experiences or events defy objectivity and therefore need to be told through multiple stories. To use a simple example, one can objectively measure the temperature of a room in degrees Fahrenheit or Centigrade, but whether this setting means that the room is cold or warm will have to be decided by each individual. I know what I consider a comfortable thermostat setting, and I can maybe gauge from people's reactions (wiping their brow or reaching for a sweater) whether or not they agree with me; however I cannot issue an objective statement saying, "This room is cold." All I can objectively state is that that the thermostat reads 68 °F.

Constructivism assumes that people perceive reality differently. Since each person interprets his or her surroundings subjectively, people often arrive at dissimilar conclusions. Constructivists believe that knowledge is "socially constructed" (Golafshani, 2003, p. 603) because people interact with their environment in diverse ways. This is relevant to this study because local knowledge plays an integral part in creating a sustainable society. To illustrate, people who live in the desert need to have a somewhat different set of skills and insights than people who inhabit a rainforest. The former need to be experts at finding and conserving water, whereas the latter must be able to recognize and fend off venomous snakes and poisonous insects. A person's cultural, economical, and physical environment influences how and what he or she learns. Moreover, Adomssent and Michelsen (2006) stress that dealing effectively with sustainable development and the ensuing changes requires "many kinds of knowledge"

(p. 86). In higher education, these new types of knowledge will have to be constructed not only through interdisciplinary efforts but also by applying more basic research. Reaching out across one's discipline to other academics will become vital; in addition, new ways of conducting research that make use of existing expertise of various professionals and laypeople need to be created. The issue of *how* knowledge is constructed by people in general and faculty in particular, therefore, represents an important component of this study.

Another point to consider is the question of *who* constructs knowledge. For example, do faculty members consider students' life experience and "prior knowledge" (Lotz-Sisitka, 2004, p. 326) as valuable, or do they lean toward a less democratic and more hierarchical pedagogy that seeks to transmit information in a top-down fashion? In an article on internationalizing curriculum inquiry, Gough (2003) notes that textbook authors notoriously fail to "question the privileged status of Western knowledge systems within which their truth claims are produced (p. 56). With respect to environmental change, for instance, cultures from non-industrialized nations observe reality and monitor changes in ways that are equally "formal" (p. 60) yet often get called anecdotal by those who claim that Western science is superior and more valid.

Bowers (2008) holds a similar position, arguing that knowledge created over generations by non-Western cultures is routinely dismissed as inferior by professors who then socialize their own students to think like this, thereby perpetuating "the cultural patterns that are major contributors to the current acceleration of the environmental crises" (p. 82). Bowers believes that many professors formed these opinions because they attended graduate school at a time of limited environmental awareness. The issue of

who constructs knowledge that is deemed valid and worthy of being learned by others deserves contemplation.

Next, one also has to pay attention to how people interpret knowledge. Depending on *who* the audience is, identical facts often generate wildly different meanings (Gough, 2003). To clarify this point, Gough cites a curious example from a summit on climate change during which participants repeatedly stumbled upon seemingly simple words such as "forest." The negotiators had trouble agreeing on one definition that satisfied everyone probably because forests differ greatly depending on their location. According to Gough, the participants were trying to come up with a single definition hoping that "some useful scientific truth claims" (p. 62) could be made when in reality this idea was fated to fail from the beginning since it was based on the erroneous assumption that forests everywhere had equal characteristics. In sum, when knowledge is created and interpreted, semantics, or the meanings of human communication, must be considered.

Finally, the issue of external influences on knowledge construction merits attention. For example, one must ask to what degree the physical environment, the college campus itself, contributes to teaching and learning for sustainable development? The notion of a hidden curriculum should be addressed in any educational research project. Wojciechowski (2003) argues that students quickly identify disconnects when what they are being taught in the classroom differs significantly from the institutions' practices. For example, the "irony" of distributing a test about the cancerous effects of chlorine bleaching and dioxin on non-recycled paper that has been bleached does not escape them (p. 72).

According to To (2006) quantitative methods alone are not sufficient or meaningful enough to follow the gradual implementation of goals set by the UN DESD because for one, needed data are often not collected from participating countries or agencies to produce consequential statistics and secondly, many issues such as changes in people's behavior and adoption of values demand a qualitative form of evaluation. To recommends a constructivist approach, whose aim is to "observe, understand and interpret social phenomena as a part of on-going social processes, mechanisms and relationships" (p. 2) and believes that conducting small case studies with limited numbers of participants and asking lots of "how" questions can shed light on people's understanding of a particular phenomenon and allow researchers to learn from these interpretations and experiences.

Since no statistical data to adequately measure the changes in attitudes that are the ultimate goal of the UN DESD are available, constructivist approaches may be the most suitable tool to estimate how various inputs can eventually affect broad attitude changes of entire nations. Like a moving target for which no clear road map exists, ESD challenges all those involved in the implementation process to create a useful map themselves. "We are actually constructing ESD even as we now brainstorm possible effective approaches," claims To (p. 4). When it comes to successfully implementing ESD, everybody has to become involved in the process as a learner and a teacher. In this study, the constructivist research approach was used to understand how faculty members respond to the challenge of ESD, arrive at decisions, build and interpret knowledge, and disseminate what they have come to know to their students, their colleagues and their community.

Interviews in Qualitative Research

According to Rubin and Rubin (2005), qualitative researchers often conduct topical interviews to explore a situation that occurs "in a specific time and place" (p. 11) with the goal of assembling snippets of information from a variety of sources in order to create a whole picture. Since this study sought to find out how a selection of faculty members felt about the specific topic of ESD, the interviews included more elements associated with the topical interview style, which is considered more "directive" (p. 11) than the cultural interview style, in which the interviewer purposely takes a backseat and lets the interviewee take him or her in any possible direction. Researchers who employ the topical style are also more likely to target specific participants who they believe will be able to elucidate a situation and who may hold clues to solutions for specific problems. Finally, when discussing the outcome of the interview sessions, researchers leaning toward the topical interview method are more likely to include fewer long interview excerpts and instead focus more on synthesis and evaluation of the information gleaned. Hence, the researcher's opinion and voice are more obvious in the discussion chapter of a topical study than a cultural one.

One important aspect of qualitative research is the understanding that participants are equal partners as opposed to anonymous subjects that one puts through a battery of tests or whose behavior one examines under specific conditions (Rubin & Rubin, 2005). This assertion is not meant to imply that participants in quantitative studies are not treated respectfully; however, because qualitative research usually involves fewer participants and often compels researchers to ask about sensitive and personal matter, digging deeply

into the interviewee's thoughts, the relationship between interviewer and interviewees has to be built on mutual trust and partnership.

According to Mason (2002), the way in which a researcher approaches an interview is directly related to how the researcher understands his or her role in data collection. Researchers who assume that certain ideas about issues simply float about in society may regard the participant as someone through whom these ideas can be captured like a butterfly in a net. In this model, the interviewer engages in what Mason calls "knowledge excavation" (p. 226), bringing piece of information to light, one by one. On the other hand, if researchers think that these beliefs and values cannot be found in the open because they are internalized by people and only become visible in a specific situation and in a unique context, then the interview takes on a different function. In this case, Mason contends, the interview serves as an opportunity for the interviewer and the interviewee to construct new knowledge.

Implications of This Study

The principal aim of this study was not, using Lincoln and Guba's paradigm positions (2003), to explain, predict, or critique faculty members' attitudes toward ESD. The primary goal was to understand their unique experience and from that understanding begin to create a picture of what is happening at a Talloires signatory college with respect to teaching and learning for sustainable development. Documenting this emerging discourse has several implications. First, administrators and their appointed sustainability coordinators, in particular at community colleges, can use the results of this case study to see how some professors interpret ESD and how they perceive their role as teachers and learners. Is there, for example, an equal comprehension and emphasis on the three key

sustainability components (environmental, economic, or social), or does one aspect receive more attention while others are ignored? Sustainability coordinators will benefit from such insights since they can then reconsider their education and awareness-raising efforts. Second, professional development planners can design, augment, and evaluate their workshop offerings based on suggestions from professors participating in this study. ESD is an emergent phenomenon; no standardized method of implementing it on a local, national, or global level exists (To, 2006). Thus, this study will become one of the many stories contributing to a holistic picture of ESD in higher education. Third, the interview process itself may possibly raise participants' awareness of ESD, bring the issue to the forefront, and perhaps influence instructors' curricular decisions in the future.

Setting of Study

Miami Dade College (MDC) is an urban state-supported community college that has been serving the South Florida community since 1960. In the 2007-2008 academic year, 161,668 students were enrolled at the college, which has eight campuses and multiple outreach centers. The college currently employs 723 full-time faculty members, who teach 49 % of all classes. With respect to degrees awarded, MDC awards more associate degrees than any other community college. Furthermore, the college is the leading institutions in the United States in awarding associate degrees to Hispanic students and Black/non-Hispanic students. Seventy-six percent of students who graduate with an associate degree transfer to a 4-year institution. Recently, the college added three baccalaureate degrees in the fields of education, public safety management, and nursing to respond to a perceived need in the community. The college also offers several technical and vocational certificate programs and continuing workforce and adult

education. After they graduate from MDC, 90 % of students stay in the community (Miami Dade College, 2009).

I selected this site for several reasons. First, MDC is one of the 15 American community colleges that had signed the Talloires Declaration as of October 28, 2008 (Appendix B). Second, as an employee of the college, I have an intrinsic interest in learning more about the institution itself and the people with whom I work directly and indirectly. What I can glean from this study can potentially help me and others improve the integration of ESD into various courses college wide, and the results can also be used to create or advance similar workshops at other community colleges. Finally, my familiarity with the community helped me interpret the collected data in their local context. In terms of its purpose, this study mainly falls into the category of an *instrumental case study* as it is meant to "provide insight into an issue" (Stake, 1994, p. 237), in this case how faculty members at a community college that is a signatory to the Talloires Declaration interpret ESD.

Seidman (2006) argues that the dangers of easy access can include that the interviewer is too involved in a project to be impartial (p. 41), or that the hierarchical structure of a school inhibits subordinates. Another concern is that doctoral students feel shy about interviewing strangers, partially because they "don't take themselves seriously as researchers" (p. 43) and continue to believe that research is something only others do. Bogdan and Biklen (2003) also advise against conducting studies with people the researcher knows because it may be "confusing and upsetting" (p. 52). This advice is certainly reasonable; however, as mentioned above, conducting a study in a community with which I was familiar also offered considerable advantages.

Selection of Participants

This study focused on full-time faculty members of Miami Dade College who had participated in at least one of several Green Studies professional development workshops offered through the institution's Earth Ethics Institute (EEI). The EEI, which was founded in 1993, "provides resources, workshops, and programs for the Miami Dade College community that encourage the integration of the knowledge, values and skills needed for a sustainable way of life into all practices and disciplines" and functions as "a catalyst for introducing administrators, faculty, staff and students at Miami Dade College to a new way of thinking called 'Earth Literacy'" (Earth Ethics Institute, n.d.).

The reason I selected from this pool is that I assumed that these professors would have some awareness of the concept of sustainability, or sustainable development, and that they would have an interest in participating in my study. Potential participants were selected from the most current database, which included any faculty member who had attended a workshop in the time from the inception of the EEI in 1993 up to the end of the 2009 spring semester.

In order to obtain a sample that included faculty from a variety of departments, I limited participation in the study to a maximum of two professors from the same discipline. Since participants need to give their consent, "an element of self-selection" (Seidman, p. 51) is always involved. According to Seidman, randomness can and should not be a goal of an in-depth interview study; therefore, I attempted to use "purposeful sampling" (p. 51) to the degree that I would be able to provide readers with a wide variety of experiences and perspectives without losing focus. In other words, I selected

cases that could help me understand the phenomenon of ESD at a community college and that offered me the best "*opportunity to learn*" (Stake, 1994, p. 243).

In the end, seven men and seven women agreed to take part in my study. Before the first interview, participants completed a brief demographic survey in which they were asked about their *ethnicity*, *years at the college*, *department*, *rank*, and *number of Green Studies workshops attended*. Regarding ethnicity, four professors described themselves as Caucasian or White, four selected Hispanic, and six wrote multiple ethnicities or other. The number of years participants had been working at the college ranged from 4 to 32. The following departments were represented: Architecture & Interior Design, Physics, Chemistry & Earth Sciences, College Prep, Education, English, ESL & Foreign Languages, Law Center, Mathematics, School of Entertainment & Design Technologies, and Social Sciences.

The faculty members' ranks ranged from instructor to full professor. Except for the part-time instructor, all professors were on a continuing contract, the equivalent of a tenured position. Some professors had only attended one or two Green Studies workshops, while others had gone to all nine workshops listed on the survey. Besides attending the Green Studies workshops, some professors noted that they had been enrolled in graduate level courses offered through the EEI. On average, participants had attended 6 Green Studies workshops.

In addition to 13 full-time faculty members, I decided to include one part-time instructor who had taught at the college for over 30 years because I felt that this person's insights and experience would add to my study. In addition to teaching, this participant had served on the Earth Ethics Institute Council, co-developed Green Studies courses,

and facilitated several Green Studies workshops. Unlike many adjunct professors, this instructor was very involved in curriculum development at the college and knowledgeable about the mission of the Earth Ethics Institute.

Altogether I interviewed 14 volunteers, a number that reflects the sample size of other qualitative studies that involve interviews (McMillan, Wright, & Beazley, 2004; Reid & Petocz, 2006; Stocker, 1999). A table displaying relevant information about the participants is shown on the next page (Table 2). Before interviewing the faculty members, I spoke with the director of the Earth Ethics Institute to learn more about the program's underlying philosophy and objectives. I also examined relevant documents such as the EEI's Web site and its annual reports.

Ethical Issues

Before submitting my research proposal, I completed the required Responsible Conduct of Research course and sent my research plan to the Institutional Review Boards (IRB) at Florida International University and Miami Dade College. In addition, I created an informed consent form (Appendix C) that participants signed before the interviews. The consent form ensured participants that their names and contributions would be kept anonymous using aliases (Creswell, 2003), and it informed them about the procedures of the study so that they knew what to expect during the process. It also notified participants of their right to withdraw their information at any time.

Data Collection Procedures

The primary research procedure I employed in this study was in-depth interviews with faculty who had participated in professional development workshops offered by the

Table 2

Participant Demographics

Pseudonym	Department	Rank	Years of Employment
Alice	ESL & Foreign Languages	Assistant Professor	5
Annabelle	Architecture & Interior Design	Assistant Professor	6
Arianna	Physics, Chemistry, & Earth Sciences	Assistant Professor	6
Charles	English	Professor	22
Chris	Social Sciences	Professor	10
Dan	ESL & Foreign Languages	Professor	29
Ellen	College Training & Development	Instructor	32
Ethan	Architecture & Interior Design	Associate Professor	6
Laura	Communication, Arts & Philosophy	Associate Professor	9
Leonard	Social Sciences	Professor	17
Nadine	Education	Associate Professor	4
Natal	Entertainment & Design Technology	Assistant Professor	6
Thomas	Mathematics	Assistant Professor	6
Yvonne	Law Center	Professor	10

college's Earth Ethics Institute (EEI) in conjunction with College Training and Development. I chose the method of in-depth interviewing because I believe that it is the best technique to understand how faculty make meaning of the current challenge that ESD is posing to higher education institutions in general and to community colleges and their institution in particular. Morse (1994) recommends using the phenomenological method of "audiotaped 'conversations'" when the research focuses on "meaning questions" and "experiences" (p. 224). All interviews were scheduled in the Summer 2009 and Fall 2009 terms. Interview schedules were developed after professors had completed the course selection process and knew when they would be available.

Interviews

This study consisted of one long interview session and a shorter, follow-up session in which the interviewer engaged each participant in conversations centering on the research questions. Before the first interview, I collected some demographic information from participants to learn what kind of courses they taught, how many years they had worked at the institution, and which Green Studies workshops they had attended. When I initially requested faculty members' participation, I informed them of the general research topic; however, I did not give them any definitions of sustainability, or sustainable development, since I wanted to find out their own interpretations.

The interviews followed a semi-structured format with many open-ended questions. An interview guide (Appendix D) was used to help the interviewer stay focused on particular areas of interest. The interview guide was not meant to serve as definite script that had to be adhered to, but rather as a guide that laid out the general direction of the conversation. This method allowed me to adjust to the participants and

thereby collect information that enriched the data set. According to Fontana and Frey (1994), each participant is a different individual, and interviewers need to be flexible to adjust to unexpected developments during the interview. Highly structured interviews that are supposed to reduce errors often fall short in that they draw "rational responses" while neglecting the affective aspects of communication (p. 364).

In the first interview, I asked participants to talk about how they became faculty members at the community college and what type of education they felt students needed at this point in time, the beginning of the 21st century. From there, I moved on to questions about their experience in Green Studies courses and with ESD in higher education. I asked the participants to define the terms *education for sustainability*, *education for sustainable development*, and *environmental literacy*, and I inquired about the terms' connotations and differences in meaning. Then we talked about the challenges the participants faced when they tried to infuse ideas pertaining to ESD in their classes. Finally, we discussed how they learn about ESD and appropriate teaching methods.

In the second interview, I asked the participants about their ideas and suggestions to improve professional development and to enhance students' knowledge of environmental literacy at Miami Dade College. The second interview session also served as a time for clarification and for the participants to bring up anything they wanted to add. Moreover, this follow-up session gave me the opportunity to explore the themes that were developing.

Supporting Documents

In addition to interviews, I wrote reflective journal entries directly after each interview. These notes were used as supplements to support the audio recordings. They

also helped me to monitor my subjectivity and, thus, limit my researcher bias. The goal was to produce an informative narrative that included as many details as possible. Other documents that I collected and analyzed were handouts and student assignments created by participants. I also perused the Earth Ethics Institute's *2007-2008 Yearly Report* and the EEI Web site.

Data Recording Procedures

The interviews were held in the participants' offices or in conference rooms on campus. To record the interviews, a digital recording device was used with a microcassette recorder for backup. Before the interview, I asked participants if they would mind that the interviews would be recorded. Participants sometimes worry that once their voices are recorded, there might be negative repercussion later on (Bogdan & Biklen, 2003). Therefore, I assured the professors that the recordings would be treated confidentially and that their names would be changed to protect their privacy. One participant did not want to be recorded, so I took notes during the interviews. All recordings were coded with a combination of names and letters to assure confidentiality of the participants' names. The audio files, transcripts, and notes were stored on my home computer, which is password protected.

Timeline

Regarding spacing, Seidman (2006) recommends that interviews be scheduled 3 days to 1 week apart. This proved to be very difficult to arrange since college faculty teach different schedules and are often busy attending meetings, holding office hours, or preparing for classes. While it is important not to "lose the connection" (p. 21) between the two interview sessions, it is certainly better to spend some time at the beginning of

the second interview to reconnect if the alternative is an unrewarding interview because the participant or the interviewer felt sick, stressed, or distracted. In the end, most of the second interview sessions were conducted within 2-3 weeks of the first.

Concerning the length of each interview session, Walcott (cited in Griffee, 2005) suggests "stopping when the desired data are elicited" (p. 36). However, I felt that setting a time limit was helpful for both parties. Therefore, I restricted my interviews to one 60 to 90 minute-session and one 20 to 30-minute follow-up session. If a participant volunteered to go over a set time limit, and the additional information was highly relevant, then the session was extended for a few minutes.

Data Analysis

Data analysis began after the first interview. The "emergent" (Merriam, 1998, p. 155) nature of qualitative research design requires that the researcher analyze data as they are collected and not wait until all interviews have been transcribed and all documents have been gathered from the various sources. Immediately after an interview, I wrote down some personal reflections, questions, ideas for the follow-up interview, and evolving themes (Ruona, 2005). These first impressions and intuitions helped direct the data collection and the continuing data analysis process.

The recorded interviews were transcribed in their entirety by a hired transcriptionist. To get a better understanding of the process, I practiced transcribing a 15-minute pilot interview with a colleague as part of a requirement for a qualitative research class. The experience was invaluable. While I was transcribing, I felt that I was capturing something important and preserving it. Regarding transcription modes, I mainly wavered between "naturalism" and "denaturalism" (Oliver, Serovich & Mason, 2005, p.

1273). Finally, I learned that I leaned more toward denaturalized transcription because I was more interested in the content than people's accents and involuntary utterances, such as coughing, sniffling, etc. Therefore, I advised the transcriptionist not to note such involuntary expressions, except for long pauses and laughs. The transcriptionist used highlights and time markers for inaudible parts of the recordings, which helped me retrieve them quickly (Maloney and Poalisso, 2001). In most cases, I was able to understand the meaning of those marked names and expressions upon listening to the recordings again. Some of the participants spoke with a foreign accent and used non-standard English forms that I edited in the excerpts to improve comprehensibility. For the conversations that were not recorded, I used the notes I had taken during the interview to write a thorough report immediately after the interview so that I would be able to include the details while they were still fresh on my mind.

Analysis

After the first interview was transcribed, I began my data analysis. As I read and reread transcripts, I got a general sense of the data (Creswell, 2005), which helped me develop codes and from there themes, around which I organized my writing. To begin with, I read each new interview transcript several times and made notes in the margins. Then, I compiled a list of all my notes and organized them into preliminary codes. For example, the words "contacting others," "talking with colleagues," "making a connection," and "fostering a sense of community" turned into the code " relationships," which eventually became the theme "Establishing Connections and Nurturing Relationships." As I moved on to more transcripts, the list of codes and subcategories

initially expanded until it became too long for me to handle efficiently, so I examined each code and was able to group some together to form a new set of codes.

After coding the transcripts by hand, I used Microsoft Word software to help label, sort, retrieve, and analyze the data (Creswell, 2005). I followed a method suggested by Ruona (2005), which involved creating a Word table in landscape format into which I pasted each entire interview transcript. The table consisted of seven columns that were labeled as *codes*, *ESD framework*, *participant identification number*, *research question number*, *turn number*, *transcript data*, and *notes*. Using the codes that I had developed, I split the participants' responses into meaningful chunks, creating new rows for each coded piece of data. Whenever participants referred to something that pertained to the seven key characteristics of the ESD framework, I labeled it accordingly in the *ESD framework* column. Responses that appeared to be relevant to one of the 6 subsidiary research questions were labeled from 1 through 6. In the transcript data column itself, I boldfaced and highlighted important passages. Finally, I wrote my own notes, for example, "compare to participant 07-1" or "this seems to bother him" into the last column.

By sorting the table according to each column, I was able to gauge the frequency of certain responses. This function also helped me structure the follow-up interview because it allowed me to see if I had neglected a particular area in the first interview. One time, for instance, I noticed that I had apparently forgotten to ask a participant for a definition of environmental literacy. I had not noticed it when I read and hand-coded the original interview transcript, but once I sorted the codes in the Word table alphabetically,

I immediately realized that this particular code was missing, and I wrote a memo to include this question in the follow-up interview.

When analyzing data, one also has to pay attention to what has not been said. LeCompte (2000) contends that data analysis also includes noting what has been omitted. Acknowledging and documenting the "absence, rather than the presence, of a phenomenon" (p. 149) is of equal importance. The more the researcher is involved in the actual data analysis, the more likely he or she is to notice possible omissions.

Throughout the data analysis process, I sought feedback about the coding of transcripts, the detection of patterns, and the interpretation of emerging themes from my major professors as well as from my mentor, a colleague who has been teaching Green Studies workshops and graduate courses in Earth Literacy for many years and who is familiar with the field of higher education and the ESD discourse. In addition, I asked some participants to review sections of my analysis to make sure that I got the facts right. This was also an opportunity for me to see if they agreed or disagreed with my interpretations. In case an interviewee disagrees, Rubin and Rubin (2005) advise researchers to consider the merit of this alternative interpretation. Should researchers choose to stick with their original interpretation, the authors suggest that they mention the fact that some of the participants disagreed. This can be done, for example, by adding "a footnote" (p. 268).

Strategies for Validation of Findings

Lincoln and Guba (1985) assert that requests for internal validity of qualitative research assume that only one reality exists, and that this reality can be falsified or misrepresented. However, the naturalistic researcher believes that there are multiple

realities. The essential task for researchers is to represent these realities sufficiently and with rigor (Hoepfl, 1997). Instead of internal validity, Lincoln and Guba propose the naturalistic term "credibility," which can be achieved by enhancing data through triangulation.

Triangulation is based on the idea that to establish a fact, one needs several sources of information (Bogdan & Biklen, 2003). Bogdan and Biklen advise against using the term "triangulation" and instead suggest that researchers simply state that they collected data from a variety of sources. However, the term is well accepted in the literature and to me it represents the idea that one should support what participants say during the interviews with other pieces of evidence, such as books chosen for course adoption, syllabi, material created by the professors, just as one would support a topic sentence with supporting details in an essay.

Several forms of triangulation were used. For example, I confirmed information participants had given me regarding Green Studies course content. Furthermore, I asked participants for some of their assignments, textbooks, syllabi, or online course material that pertained to ESD. Finally, I contacted several participants after the second interview to clarify details (Creswell, 2005, p. 252).

Final Thoughts on Data Analysis

As it typically happens in qualitative research, the data analysis was rather iterative in nature. I set out with a short list of questions that gradually grew and changed over the course of the study. My analysis of the earlier interviews informed the later interviews in that I began to ask participants more specifically about certain themes that I sensed were developing. Each faculty member's personality, cultural background,

academic inclination, and familiarity with ESD directed the interviews in unique ways. I learned more than I ever thought I would. In the hours I spent reading the transcripts and listening to the recordings, I realized how exceptional each person's case was; at the same time, I sensed familiar aspects. Because I tried to relate the experiences of 14 participants, the narrative focuses more on the themes themselves and less on the individual lives of the participants. While this technique may obscure the distinctiveness of individual characters, in part to protect their privacy, I have still attempted to let each person's voice shine through.

Summary

This case study centered on the phenomenon of ESD in higher education. The study was designed to examine how full-time faculty members who participated in Green Studies professional development courses at a community college that signed the Talloires Declaration responded to the phenomenon of ESD. Interviews, written notes, and other forms of documentation served as the primary method of data collection.

CHAPTER IV

ESD AND ITS METAPHORS

When I started my research, I was hoping to understand what community college faculty from different departments thought about education for sustainable development (ESD). From informal conversations with colleagues, I had a superficial idea of some of their opinions, but I did not know why they felt that way or how their attitudes and beliefs influenced their own teaching and learning. From monthly Community Colleges for Sustainability conference calls with an ever growing number of faculty and administrators from across the nation, all somehow involved in sustainability projects at their institutions, I knew that increasingly community colleges were beginning to address the issue of sustainability. However, I wanted to learn more about the people who were directly engaged in creating the curriculum and whose daily contact with students put them at the forefront of ESD.

While I was interested in community college faculty in general, I was particularly curious to gain a better understanding of the people who taught at my own institution and who experienced very similar opportunities and constraints as I did. The faculty members I eventually interviewed graciously shared their thoughts and feelings with me. It is important to note that their stories are neither intended to be representative of all faculty members at Miami Dade College (MDC), nor to speak for community college professors in general. However, what these personal accounts capture are some of the inner conflicts that get played out when an institution grapples with its position toward a global issue like ESD.

This chapter begins with the major theme, "I Don't Think People Know What It Really Means," which explores how the participants conceptualize ESD. The narrative opens with a brief summary of the participants' initial interpretations of the term ESD that is followed by a discussion about the issue of terminology, in particular the distinction between two similar expressions, education for sustainable development and education for sustainability. Then the participants' extended conceptualizations and metaphorical interpretations of ESD are presented in sequence. In the second theme, "Planting the Seed," the recurring metaphor of ESD as a collective and holistic educational effort is explored in detail. The chapter closes with a summary of the first two major themes.

"I Don't Think People Know What It Really Means": Conceptualizing Education for Sustainable Development

As previously explained, the terms *sustainability* and *sustainable development* appear in a variety of contexts such as architecture, agriculture, business, and design to mention only a few. More recently, sustainability and sustainable development have become buzzwords that many businesses, government agencies, and school districts use strategically to communicate that they are "going green." For example, the Web site *Sustainable Florida* features a link titled "Working on the Green – Markets, Profits, Branding" (Sustainable Florida Collins Center, n.d.), while another site offers information on "Green Investing" and "Green Dream Jobs" (Sustainable Business, n.d.). There even exists a Web site that generates "sustainability buzzwords" to "impress colleagues, industry contacts and clients with your sustainability know-how" (Sustainability Buzzword Generator, 2008). Upon entering the term "business meeting"

in the sustainability buzzword generator, the program offered the catchphrase "green team tactics," and instead of "teaching students," the program suggested using "stakeholder readiness initiative." Visitors are invited to continue clicking until they find a term they deem appropriate.

Pepper and Wildy (2008) contend that many times, "the term 'sustainability' appears in documents because authors are including the latest 'hot topic' or jargon" (p. 622). In addition, Pepper and Wildy criticize the fact that those who deliberately include this term to add a contemporary flavor rarely clarify what sustainability means to them, and they believe that a superficial understanding of sustainability ultimately inhibits leadership in the field.

Clearly, the terms sustainability and sustainable development have experienced an unprecedented upsurge in their usage. However, the fact that more and more people pepper their conversations and business meetings with references to sustainability and sustainable development does not mean that they all agree on what the terms signify. In the introductory chapter, I discussed the evolution of the terms education for sustainable development (ESD) and education for sustainability (EFS) in the literature, and I opted to use ESD for the purpose of clarity and coherence. In the interviews, I asked participants what ESD meant to them. The prevailing sentiments are presented in the following pages.

Initial Responses

To get an idea of how familiar the participants were with the term ESD and how relatively certain or tentative they felt about the concept, I analyzed and compared their initial responses during the interview. Some of the professors seemed to have a rather clear idea of what ESD meant to them and responded with conviction; others were

slightly more hesitant as if they had heard the term before but were not completely sure of its exact meaning. The third group seemed to hear the term for the first time. They paused longer than the others, used more conditional forms, and appeared cautious when they replied. Several participants also substituted ESD with EFS or only referred to sustainability.

Those holding a comparatively firm belief regarding ESD gave answers such as "What comes to mind for me is the Salzburg Institute, where I went for about a week, and it had a big impact on me because that was the theme when we were there" (Charles), "A bunch of Capitalists sitting in a room attempting to figure out how to get a greater profit margin" (Leonard), "It means knowing about broad concepts of sustainability, global warming, what the future with global warming might look like" (Yvonne), and the slightly sarcastic "It depends on who you ask" (Dan), with which he indicated that he was well aware of the ESD discourse.

The second group included more tentative answers that indicated that the participants were still in the process of constructing meaning. Examples of these types of responses were "Well probably…I think it certainly includes the best scientific understanding that we have of the nature and of physical reality, the origins of the universe, how systems function to the best of our knowledge now, and knowing that knowledge is always provisional, and always revised and changes" (Chris), and "Well, there's a lot of different things in there. Educating for sustainability, I think, is a little different than sustainability for, I mean, education for sustainable development, because development is actually a kind of oxymoron" (Ellen), "Education for sustainable development, yeah. I think that what comes to mind is teaching people how to connect

with their local environment because I think that the key to sustainability is one of them" (Natal), "Well, I think it's educating the population as to how to have more of a green imprint in daily lives" (Nadine), and "When I think about development, I'm thinking about creating" (Ethan).

The remaining five participants seemed to encounter the term for the first time, and some asked me to repeat it. These faculty members had heard of sustainability, but they seemed less familiar with the term ESD. Many paused to think before giving answers such as "Well, I think it's a broader concept, right?" (Annabelle), "Well, it would mean that I would somehow incorporate in what I am teaching an awareness of the environment and of the need to protect it for future generations," (Alice), and "I would say teaching different people how to sustain their livelihood, for example, by farming," (Arianna), and "To me, well, I think the first thing that I would do if I were to even introduce that term to my class is to define sustainability" (Laura). One participant even deconstructed the term ESD, saying "There's a number of words, but the education part of it obviously implying that we're conveying this info, and sustainable being the fact that we need to lighten our footprint" (Thomas). Gauging from the initial responses, some participants were more familiar with the term ESD than others. Five appeared unfamiliar with the term ESD, yet all were aware of the term sustainability.

The Issue of Terminology

During the interviews, quite a few participants used the terms education for sustainable development (ESD) and education for sustainability (EFS)

interchangeably; therefore, I asked them if they felt that these terms had different connotations. When I asked Charles, he told me that he liked EFS better. He explained:

> Education for sustainable development is much more of a UN kind of term. I like sustainability, education for sustainability, because I think when you are working with students, you can treat it like a personal issue. You can look at sustainability even in the way that you eat your food, or the way that you monitor your energy during the day, or how you concentrate for your studies. It can apply in so many levels. The environment isn't something that's out there. It's acting all the time.

Laura, from the College Prep department, also preferred EFS to ESD. She pronounced her inclination as follows:

> I actually prefer sustainability. Not that it means much of a difference, but I prefer the term because sustainable development gives me the impression that we have to go beyond, so I prefer sustainability. It's just a preference. Sustainability is learning to live with what you have.

When I inquired if she thought ESD had a negative connotation, she clarified:

> Not that it has a negative connotation, at least not for me, but I'm thinking for students as well. It would be more of an education of how to become sustainable as opposed to learning and using what we already have to be sustainable. I don't feel that there's a difference, and I don't think that the word "development" has a negative connotation. It does, however, tend to lend itself to more of an education environment, but so does sustainability. You're trying to learn how to work with or live with what we have as opposed to making more.

While Laura and Charles expressed a preference for the term EFS, Nadine, from the School of Education, favored ESD. She elaborated:

> When you think of education for sustainability, a lot of people will take that internally, and it becomes a personal kind of "my life" rather than education for sustainable development, which I think looks more globally at the issue. It's not so much "what you're doing," but "What are you and others around you doing to continue to improve?" I think you're going to have to be careful in making sure that everybody can look beyond just themselves.

To Nadine, the two terms differed mainly in scope. She felt that EFS pertains to a more personal or local approach, whereas ESD extends to a broader audience encompassing the international community.

Thomas, who teaches mathematics, shared Nadine's sentiment that EFS assumes a focus on the personal and local. He suggested, "Sustainability could possibly be interpreted as smacking more of closer to home." The word "development" he thought "could be interpreted in a sense of trying to be global." For a while, Thomas dwelled on the word "development.'" He said that he would first associate it with the dynamic of building communities and constructing housing, but as we got further into the conversation, Thomas added that ESD could "ripple out across everything from the food production and distribution to trying to eat locally and all those things." He claimed that "development" could be taken as an "umbrella term" but then returned to his original interpretation, saying that it sounded mostly like an increase in construction.

With respect to differentiating between ESD and EFS, Arianna thought they were "probably the same." The term sustainability sounded a "little broader, she said. About ESD, she added, "Literally, the word 'development' means developing something, for example, curriculum, changing the way we do things. It's a process." Arianna did not think that ESD had a negative connotation because it had, as she put it, "the word 'sustainable' in front of it."

Finally, Natal also initially substituted "sustainability" for "sustainable development" while responding to my question about the meaning of ESD. When I pointed this out to him, he said that he actually preferred ESD because it invoked a certain dynamic that EFS did not. He explained it as follows:

> I like the idea of including the word "development" rather than leaving it as sustainability because it connotes a process, it connotes stages. It's not something that just sort of comes by itself. It also means changing because sustainability is not a static thing. What's sustainable now might not be sustainable in 20 years, so by using the word "development," I think it targets the meaning of it better than just saying sustainability.

Natal's preference for a gradual process could be rooted in his career as a media editor. Editing, he said, is "a process of layers," in which the quality of the final product depends on working through multiple stages.

According to Lakoff and Johnson (2003), metaphors help people interpret new experiences through what they already know and in Natal's case, the effort implied by the word "development" probably means that he regards ESD as a labor-intensive process that helps people improve their lives by making them better adapted to shifting conditions on the planet. ESD then is a way to edit the "rough draft," our current lifestyle, until it fits the demands of the future. It is unlikely, however, that the changes will result in one final version because, as Natal put it, we cannot foresee what will be considered sustainable in two decades.

It is evident that the way in which the terminology (ESD or EFS) is used can cause confusion because people have different associations. One cannot be certain what makes a participant choose one term over the other. It could be familiarity, positive or negative associations with the word "development," or simply a linguistic preference for the shorter *education for sustainability* versus the more cumbersome *education for sustainable development*. Terminology remains an issue, but it is not the focus of this analysis. Therefore, I will now turn to the more another germane question of what ESD means to the participants.

Personal Accounts

The next step I took during the process of analysis was to look for references regarding the three aspects of ESD: environmental, social, and economic. Graphic representations of ESD usually depict three overlapping circles (see p. 4), and it was primarily this image that I had on my mind when I studied the participants' responses. Furthermore, the code keywords Kagawa (2007, p. 326) employed to analyze university students' perceptions of sustainable development and sustainability served as a starting point. For example, expressions such as *environment*, *ecological*, *nature*, *natural*, *green*, *Earth*, and *recycling* indicated a reference to the environmental aspect of ESD. Words like *social justice*, *social issue*, *community, equality*, *ethical*, *culture*, and *people* showed that the social aspect of ESD was understood. Finally, terms like *economy*, *economic*, *fair trade*, *construction*, *produce*, *consume*, *poverty*, and *clients* fell into the economic category of ESD. Furthermore, I searched for references pertaining to the future-oriented nature of ESD. Here I looked for keywords such as *long-term*, *gradual*, *over time*, *in the future*, *future generations*, and *children* or *grand children*. Finally, I noticed that the participants also differed in their perception of the scope of ESD, in other words, whether they understood it mainly as a local, national, or global phenomenon. In summary, my analysis of the participants' conceptualization of ESD focused on the three aspects, the future-orientation, and the scope. In the following pages, I will describe each faculty member's interpretation of ESD.

Ethan

Ethan, who teaches architecture and design, was the first participant I interviewed. He referred to all three aspects of ESD and understood ESD as "helping communities

sustain themselves." The term also made him think of assisting people in developing countries "develop their own economies…without having to resort to the practices and standards of the West." He emphasized the use of "traditional building materials," "natural lighting," and "using methods that are not harmful to the environment." Moreover, he ranked "cultural preservation" and "respect for culture" as important aspects of ESD. To give me an example of sustainable development in his area of expertise, Ethan explained:

> If you're doing architectural work, let's say in Saudi Arabia, you would look for things that are Saudi Arabian and that pertain to the culture. A good example is the airport in Medina, which is designed like Bedouin tents. It goes back to the idea of a Bedouin tent rather than being a standard airport that you find all over the place.

To Ethan, sustainable development in the field of teaching architecture is not "cookie cutter design," and his repeated use of the phrases "traditional," "natural," and "respect" indicates that he associates these qualities with ESD. The fact that Ethan touched on all three aspects of ESD shows that his interpretation of the concept is not limited to the environmental aspect. However, he thinks that others have a narrower view:

> I don't think people know what it really means, or have a real sort of understanding of what sustainability implies. We tend to think recycling. That could be one aspect of it. But just preserving a culture could be another aspect of sustainability.

Ethan said that cultural preservation was a vital part of sustainability, and that even "teaching a language or foreign culture" counted as an aspect of it. He seemed to view ESD in terms of being actively involved in raising students' awareness of these interrelated facets.

Lakoff and Johnson (2003) contend that the way we perceive our surroundings is shaped by internal metaphors, which in turn inform our thoughts and behavior. When we speak, the researchers argue, we often use metaphors that tell us more about the way we conceptualize ideas and take action. In Ethan's case, I noticed that his approach to ESD was very action-oriented. He discussed "creating," "helping," and "dealing" with the development of communities. When we talked about his classes, he often emphasized what he made his students do, saying for example, "I have them design a retreat" and "I have them research an aspect of sustainable design," or "I have them sketch and study." At other times, he described his actions on campus: "I've alerted people about the water taps, for example. The things keep running." When he referred to increasing his students' awareness of sustainability related issues, Ethan often used active verbs such as "show," "start," and "expose." "Reading about it," he stressed, is not sufficient; instead, he prefers to take his students out to the Environmental Center, where they can study the actual location of a project. He also mentioned being involved in initiatives and student clubs that focus on sustainable design. In short, to Ethan, ESD has to be applied and experienced to become meaningful. At the community college, where students attend for a shorter time, he feels the need for ESD is even "more pressing because you have to *do* it now."

Despite his involvement, Ethan is also noticeably bothered by the term *sustainability*. He called it a "catchall phrase" that was "very broad" and "loosely used," and he reiterated his annoyance with the term's vagueness many times during both interview sessions. Ethan seems to care a lot about teaching his students the values that

he associates with ESD, but he appears troubled by the excessive and often insincere use of the terms sustainability and sustainable development.

Dan

Dan, who teaches English for academic purposes, also has a concern. He is troubled by the, as he called it, "anthropocentric" nature of the term ESD. When it came to a definition, Dan said he "held on to the one the UN puts out" (referring to the Brundtland Report) because he felt it was "the most reasonable." However, the idea of not "sacrificing the needs of the future" sounded "human oriented," which he considers "problematic." He asked:

> Are you talking about sustainable now, at this level, where people are around the globe? Well that means that we, as a small percentage of the population, consume five times what we should, and other people are starving to death. I don't want to sustain that.

Here, Dan mainly refers to the social and economic aspects of ESD, the unequal distribution of resources and the problem of poverty and hunger. Later, Dan made a connection to the environmental aspect. We were talking about ways to infuse ESD into his classes when Dan said:

> The UN has a clip that I can send to you that's 3 minutes long. It basically says that poverty is the most toxic element in the environment because extremely poor people are doing these things that are harmful to the environment. On the other hand, extremely rich countries are producing more CO_2 than the poor countries that are just cutting down the trees.

Dan's responses during the interview indicate that he is aware of the economic, social, and environmental aspects of ESD and their interaction. He also addresses the issue of social justice at both, intragenerational and intergenerational, levels. Concerning the scope of ESD, Dan seems to understand it as a global phenomenon.

Since Dan had been actively involved in the initiative of making the college become a signatory to the Talloires Declaration, the 10-point sustainability action plan drafted in 1990 by international leaders in higher education, I asked him to recall how he had first come across the document. He replied that he initially discovered it while searching for "something on the topic of universities and education and the environment" on the Internet. After looking into it more thoroughly, Dan took the idea to the previous director of the EEI, who said that she was aware of it, but that the college was not yet involved. Dan recommended that the college sign the Talloires Declaration, but it was not until the new director came on board that Dan's initiative finally got considered. The process, Dan recounted, took years. A close analysis of Dan's word choices, in particular the word "up," suggests that he sees the college as a large bureaucracy, in which ideas, such as the Talloires Declarations, slowly move up to the top administrators through "channels." In this case, the new director of the EEI "picked it up" and "brought it up" to her superior, who then "passed it on up," to the president, who eventually signed the Talloires Declaration in 2006.

Moreover, Dan's frequent use of the word "impact" indicates that he values actions that result in change or even transformation. For example, Dan said he always tries to find an "experiential base" for his classes because it has a "greater impact" on his students. When we spoke about the Talloires Declaration, he talked about the fact that the document was directed at the top college administrators because of their "potential for greater impact." He feels that smaller colleges could "concentrate that impact," and actually transform students, whereas larger institutions are plagued by inertia that makes change harder. Community colleges, he argued, have "the impact of changing more

people locally." However, he doubts that the changes can be at the transformational level. He explained:

> I think we can make people more environmentally aware, but I'm not sure how much we can make people more socially just without creating encounters like my friend does when he takes kids into Overtown. They have a garden, and they do tutoring, both at the same time. And that destroys stereotypes. It destroys barriers, and it has connected those kids in ways that go way beyond what you would expect it; he got much more than they expected out of that and continues to do that; and those kids are transformed. I think they are transformed in the sense that they will never be the same ever again in how much they continue to move and are active. I think that their perspective, the way they filter information, will not be the same ever again, and that, I think, is essential as we go through this. We have to make transformations that are broader than just, "Okay, we're going to recycle." I have to see the impact.

What this excerpt shows is that Dan visualizes the ideal form of education as a kind of holistic teaching and learning that has not only concrete but long-lasting effects, an education that transforms all that are involved. It is closely aligned with the type of education that Sterling (2001) calls sustainable education, which focuses on practices that are "process oriented," "responsive and dynamic," and "interested in mutual transformation" (p. 38).

Charles

Like Dan, Charles from the English department also mentioned the three different aspects of ESD in our conversation. At first, he talked about the economic and social implications, saying that he associated the gap between richer and poorer nations with ESD. Having attended a global seminar on ESD in Europe, he remembered "the disparity and poverty" as key issues. Similar to Dan, Charles is concerned about the social justice aspects of ESD and the scope, asking rhetorically: "Is it enough to just educate for sustainability in our own bioregion? How responsible are we for the other bioregions of

the world?" When I asked what he associated with ESD, Charles brought the environmental aspect into the discussion. He explained:

> I would probably go back to the elements of education for sustainability. I would go back to how we protect water, air, earth, the energy of fire, and how we deal with that in terms of moving our machinery and absorbing the sun and so on. That's really basic stuff.

For Charles, the key to a more sustainable future rests in helping people understand "connections," a term he used repeatedly. ESD or EFS, as he prefers to call it, can be something of a "primer for how to look at the Earth as a living creature and how to see the connection between the human and the Earth." He wonders how education can not be "for sustainability," saying:

> If we weren't educating with sustainability in mind, then we're really talking about malfeasance or mal-education. So if you're not educating for sustainability and that's not part of the curriculum, it seems to me that you're teaching ecocide, basically.

He also hopes that the "sustainability revolution" can become a way for the college to improve graduation rates and retention by engaging "students in lifelong learning" that will help them "see the connections across disciplines" and thereby make them understand "the relevance of what they're doing in school" in the context of real life. He envisions it as an "overarching kind of green tent" that the college provides to help students see sustainability as being "really integral and connected with their education, their life at home, their life in the future, and the sense of caring for the community." If this were possible, Charles concluded, it "would be very, very kind."

The metaphor of a benevolent "tent" strikes me as unique in that it suggests a shelter as well as a structure that can join parts that will otherwise be seen as disconnected. The color "green," of course, signifies the environment, which Charles

apparently strongly associates with sustainability. Taken together, the idea of a "green tent" spanning the college while protecting and connecting what is underneath presents a powerful image. If ecocide, or the death of the environment as we know it, can be the eventual outcome of not educating for sustainability, as Charles speculates, then a protective "green tent" might be just the right symbol for an education that promotes a sustainable future.

Ellen

Similar to Charles, Ellen, an environmental and health specialist, also prefers the term education for sustainability, arguing that the word "development" in ESD is "like an oxymoron." On the other hand, she said, "If you do need to develop, it definitely needs to be with sustainability in mind." Furthermore, Ellen talked about how the semantics of the term sustainability had changed over time. She recalled:

> Years ago, I had problems with talking about sustainability because every time I talked about sustainability, all the people in the economic brain would say, how long can we sustain this profit level? Sustainability, to me, means not consuming more quickly than the waste can be absorbed, and that we're not doing more damage and generating more pollution than can be resolved within a timeframe.

Like Dan, Ellen is concerned about the impact unbridled economic development continues to have on the environment. She also raised the issue of social justice when we talked about the role of educators in advancing ESD, saying:

> It should be the responsibility of any educator to impart an understanding of one's place in the world and in society, how to be a good citizen, how to develop or … not even develop but to affirm one's sense of ethics and morals.

In addition, Ellen critiqued the focus on humans in the ESD debate, a point Dan had also deemed "problematic." She argued for a more ecocentric approach: "We need to make a

shift in how we care for the Earth by extending our love for ourselves and those immediate people in our families to the natural world." She returned to this idea of reconnecting with the natural world several times during our conversation. The metaphors Ellen used indicate that she envisions a strong relationship to the degree of "being a part of it." Children, she said, "bond" with the environment in which they grow up, but this sense of connection, or "sense of place," is often forgotten. People need to realize that no real separation exists, Ellen contended. When our conversation shifted to pollution, Ellen spoke about the negative ramifications of this intimate connection with the environment, saying:

> It sounds clichéd to say we're in a chemical soup, but we actually are. That impacts our immune systems, and our bodies are adapting and changing. I mean, look at the one in three people that will contract cancer in their lifetime and that doesn't include skin cancer? Those are alarms to me.

Her image of swimming in a poisonous broth and absorbing toxic elements to some degree of mutation suggests that Ellen perceives humans as so intimately connected to the environment that harmful chemicals eventually permeate and destroy their bodies. Having studied nutrition, she is particularly concerned about additives in food and feels that instilling an awareness in people of being connected to nature will make them treat the environment not only with more care for the benefit of animals and plants, but also protect them from suffering the detrimental effects of chemicals in the air, water, and soil. "People spray an insecticide thinking it's going to affect insects. They don't see it as a biocide. 'Bio' means life; 'cide' means kill. Kill life. I mean, I am a biological organism," she explained. To Ellen, human beings are as vulnerable as other organisms to

the intentional or negligent poisoning of the environment because they are "a part" of nature.

In the interview sessions with Ellen, it became clear that she, too, conceptualizes ESD as encompassing all three aspects. However, her own initiatives address mainly environmental sustainability and Earth Literacy, "an understanding of cosmology and ecological principles, as the basis for sustainable living" (Earth Ethics Institute, Mission Statement, n.d.). Having worked with environmental issues over several decades, Ellen is aware of the ongoing discourse regarding the precise meanings of the terms sustainability and sustainable development, and she actually welcomes the recent focus on the environmental aspect that some scholars say tends to overshadow the social and economic ones (e.g., Kagawa, 2007; Pepper & Wildy, 2008).

Laura

Laura, who is a professor in the College Prep department, primarily discussed the environmental and social aspects of ESD. As examples, she listed outdoor excursions, environmental clean-up days, lessons on compassion, and service learning projects in local neighborhoods. To a lesser degree, she also addressed the economic aspect when she said that sustainability meant "to learn how to work with or live with what we have as opposed to making more." Here, Laura refers to the economic activity of producing merchandise. In addition, she also mentioned organizing a "free swap" on her campus, during which used items could be exchanged. This type of bartering combines the economic activity of trading with the environmental concept of reusing goods. Laura understands ESD as a form of compassion toward current and future generations, saying:

> There is a need for students to understand what this means, how this is affecting us, and what's going to happen in the future to your children and your grandchildren. Our student body has a one-track mind. They think that it's their life and their world, and that's it. They don't see 20, 30 years down the road; what could be the possible outcomes, and I mentioned that to them. I say, "This is not our world."

Regarding the scope of ESD, Laura predominantly made references to projects in the local community and environmental systems in South Florida. At one point, however, she mentioned that she had participated in an international exchange program for teachers to Kenya. She recalled:

> I was able to take a lot of what I have learned through EEI and teach in Kenya this past summer, and it was very interesting because I was able to connect the South Florida hurricane patterns to the Africa winds that we get, and I learned a lot from them. And so, globally, we had this unified connection. It was amazing. We are a world apart, and yet their world affects our world.

Like other participants, Laura regards an awareness of interconnection as an integral part of ESD. With her students, she favors a practical approach that includes service learning projects and outdoor immersions. She explained:

> I'm very big when it comes to hands on. I could say that we could research it, we can read, we can dialogue, we can share, we can have a circle discussion, but it still doesn't become real to them until they are part of that research, which is why I send them all over the county. They go to the Federation Towers in Miami Beach to do some service learning with Hospice Care, they go to nursing homes, we go to Overtown and just clean up, and we plant organic gardens for the residents there. Until it becomes part of their world, I don't see a connection because we can read as much as we want. It needs to be applied.

In short, similar to Ethan, who had said that merely "reading about it" was insufficient when it came to involving students in ESD, Laura also advocates for experiential learning.

Nadine

Regarding the three aspects of ESD, Nadine, a professor of education, first talked about "educating the population as to how to have more of a green imprint in their daily lives" and "green habits." She mentioned a family member, a young architect who had recently become LEED certified (Leadership in Energy and Environmental Design), and she added that she had raised her children to be "environmentally sensitive through their diet, recycling, energy and sources, and the kinds of cars" that they drove. For the most part, Nadine focused on the environmental aspect of ESD, but she also discussed its social component when she said, "I have students who are creating service learning projects which have to do with sustainability and helping the community." She also feels that current social issues in the community should be addressed as part of ESD, emphasizing that it is important to make students more aware of "community concerns." Referring to a recent stabbing at a local high school, Nadine recalled that she had immediately reminded her pre-service teachers that a conflict resolution curriculum was available to them. She explained:

> Anything that's happening and that's of relevance in the community, which I feel is an important part of sustainability, directly comes into lessons, no matter what I'm supposed to lecture on. Forget that. Let's talk about this.

While she focused mainly on the environmental and social aspects, Nadine also drew a connection to the economy when she discussed her consumer choices regarding food and cars. About selecting a car she remembered:

> Back in the 70s, I was in gas lines, and back in the 70s, we said, "Why aren't we driving smaller cars?" As my first car, I wanted to buy the smallest car in the market. My parents passed out, but I thought this was my way of doing something for the environment, and I still think that way.

This statement shows how Nadine connects an economic activity, the purchase of a vehicle, with an environmental impact. In short, even though she appears to associate ESD more with environmental and social issues, she still makes some connections to the economic aspect. On several occasions, Nadine compared ESD to efforts made by environmental educators 30 years ago, saying that it comes "in cycles." Now, she said, it is important to maintain the momentum. As for future generations, she hopes that her student teachers will model sustainability to their students.

When Nadine discussed ESD, she often drew on metaphorical expressions associated with a missionary battle. Educators, she said, have to "implant this mission" in students and "get them thinking in a paradigm." The college years, she added, were "a great time for bringing this across" and "a time to strike." Finally, she regards college as the "last chance for students to develop the will to resist and fight and the strength to say what they feel needs to be said." When I asked Nadine if she ever felt frustrated by what was going on in the world, she replied:

> I have hope. I do have hope, but I think hope is also based on huge crises and changing the mindset of corporate America, and that's why I think things are moving slowly but little by little. Until we shoot down oil companies and car companies as far as the realistic aspect of, "You can't do this; you're the ones that are hurting us." I still feel helplessness.

Nadine's sense of feeling powerless in the face of international conglomerates could be the reason why she conceptualizes ESD in such combative terms.

Thomas

Thomas, who teaches mathematics, addressed the issues similarly. He established connections between the environmental, social, and economic aspects of ESD and talked about lightening one's ecological footprint, recycling, reducing consumption, paying fair

wages, improving the manufacturing of cars, and making companies abide by federal requirements to protect the quality of air and water. Thomas emphasized the interconnection of all three aspects and the need for understanding problems holistically. As an example, he brought up the rapid decline in honeybee populations:

> In China, they were so dirty and so polluting that they killed off all of the bees that fertilize the Asian plum, which is a signature item. And of course, in China, where there is not enough value on human life, they basically told the farmers, "You will go out there and pollinate those plants yourself." The farmers got out there with little brushes, and they got to be the bees. That's not an American job. Maybe we'll bring in some foreigners to do that, but we would never do that, and we are not doing anything to prevent it.

In this brief excerpt, Thomas ties together environmental problems (pollution of Asian plum, decline of honey bees), social conditions (inequitable and degrading treatment of Chinese farmers and immigrants), and economic facets (food production, outsourcing of labor). Simultaneously, he addresses the global nature of the crisis and the need for intervention. Thomas also touched on the future orientation of sustainable development when he discussed the degradation of water resources:

> What can be done to terminate deep well injections? How can we get our water for the future? It's not our problem. It's our grandchildren's. And that's, I think, so much of the problem with any issue with green. It is the fact that people think, "I don't care. I need to be dirty and filthy so that I can make a god awful profit and buy my third summer home in the Hamptons. I don't really care if my granddaughter gets leukemia at 13." You know, it's a kind of weird tunnel vision greed, and I don't know how much of it is just plain ignorance about the dangers of chemistry in the food supply and the water supply.

While his example of the honeybees addresses mainly intragenerational fairness, his example of water pollution concentrates on intergenerational equity. Both forms of social justice, involving people alive today and extending to those yet to be born, correspond to

key features of ESD. Thomas seemed visibly disturbed by most people's lack of concern for future generations. "We're selling our soul and giving it away to the highest bidder," he lamented while shaking his head in disbelief. Overall, the interviews with Thomas left me with the impression that he understands the multi-dimensional nature of ESD well, but that he is also extremely frustrated by the "ignorance…greed…foolish inefficient use of resources, and incalculable ignorance" he observes around him.

Leonard

Whereas Thomas' outlook bordered on gloomy, Leonard's attitude toward ESD seemed almost buoyant. Before Leonard started teaching courses on government and international relations in the social science department, he worked for the United Nations, which explains his familiarity with international development issues. When I asked him about ESD, for example, he quickly pointed out that all eight United Nations Millennium Development Goals relate to sustainable development. He explained that he closely follows research focusing on the "underpinnings of environmental entrepreneurship as it relates to economic development consistent with good environment," and highlighting a project in the Dominican Republic, he added:

> They figured out that organic strategies – and they have some real novel ones because that's one of the eight countries in the world projected to meet the Millennium Development Goals by 2015 – work. Growing sugarcane and cashews can be advanced by eliminating the bugs and the devastating effects of bad garbage in the water with lemon juice, tobacco, and one other natural substance. It's organic with greater productivity.

Leonard demonstrated an awareness of all three dimensions of ESD, and more than any other participant, he constantly underscored the global scope of ESD. He was also cognizant of its future orientation and enthusiastically recommended the book *Five*

Minds for the Future by Howard Gardner, whose ideas, he said, inspired him during a guest lecture series in the Philippines. He recalled:

> I was in Mindanao, the Muslim autonomous region, and besides being invited for the original purpose, which had to do with connecting some Sufi Muslim ideas with regard to service learning, by the way, environmentally compatible, my other 28 visits in my four-week visit had everything to do with multiple intelligence, five minds for the future, and then basically the ethics that the individual can use to bring peace through compatibility with the environment…But I mean all of it comes from out of our little crucible called Miami Dade College. So that's what's kind of exciting.

Leonard praised his campus administration for getting the faculty involved in "the study of education" through CASTL (Carnegie Academy for the Scholarship of Teaching and Learning), an initiative by the Carnegie Foundation. He feels that "looking at education as a vehicle to sustain development" and investigating "how we shape what we teach by how we do or don't integrate the environment or the key issues" is "a worthy focus." On the other hand, he cautions that universities receive research grants from large multinational corporations that are more interested in "short-term economic sustainability with specific results that may or may not be compatible with natural development," a situation that Coté, Day, and de Peuter (2007) consider problematic because it encourages a corporate mentality and muffles opposition. Nevertheless, judging from Leonard's frequent use of the word "exciting" to describe the various projects he is involved in, he seems resolved to focus on the positive elements of ESD.

Natal

Natal instructs students in the School of Entertainment & Design Technology. He also exhibited a positive attitude toward ESD, but unlike Leonard, his initial interpretation of ESD centered on local aspects. ESD, he said, means "teaching people

how to connect with their local environment" because sustainability has "so much to do with what's available nearby." It is not sustainable to ship materials from China if they are available in South Florida, he reasoned. People also need to know where they come from, and even more importantly, where they currently live. Having knowledge of their local environment allows people to become more sustainable, Natal added. He elaborated:

> So [knowing your environment] is important, and when you say teaching people about the environment, we're talking about all the aspects of it, not just natural aspects, not just knowing which trees grow here or what kind of rivers we have, but also what kind of people live here and in what kind of culture we live in this environment.

This supports Ethan's argument that preserving cultures and languages should be considered vital aspects of ESD because it goes beyond caring about the environment and improving recycling.

Chris

As a professor of psychology, Chris also views sustainable development as an adaptive process. He elaborated:

> I think that's sort of what we're wrestling with in terms of sustainable development. We can preserve this culture, and other people want to, but it's a ticking time bomb in terms of our current habits. Now if, in fact, we can evolve ourselves past it, we'll be okay.

Like Natal, Chris stresses the importance of helping people understand their position within a system, or as he calls it, "the interconnection." When we spoke about ESD, Chris told me what he felt needed to be addressed:

> I think you need to understand systems, and ultimately it means that by understanding systems, you need to understand this notion of interconnection just on a scientific basis in order to have the personal wherewithal to live that stuff out. I think it's got to be on a deeper level. I

> think that education, and this is a tricky bit of business, has got to be something that is also more heartfelt, more personal. I think it is possible to get to where you really perceive life and all the things around you. I think that you can develop this sensitivity, but for a lot of people, for most people, they are asleep to it.

With his background in psychology, the affective domain of ESD is obviously significant to Chris. He repeatedly accentuated the interconnected nature of everything on the planet, saying, "I'm talking about a spiritual awareness that on the most fundamental level there is no separation between people, plants, and things…we all spring from the same stuff." Like Ellen, Chris understands this interconnection also from a molecular viewpoint. He explained it as follows:

> What I do in my small way, ultimately, affects you. We breathe in and out the same air. We share molecules. We do all those things. My lifestyle is ultimately going to affect you, and all of our collective lifestyles are going to affect each other, and I think that's sort of the darkness that we're struggling against right now. People don't quite want to own the impact of human beings on the ecosphere.

I noticed that Chris often used metaphorical expressions of light and vision, implying that recognizing this interconnection is akin to being able to perceive, a conceptualization Lakoff and Johnson call "Understanding is Seeing" (2003, p.48). In the excerpt above, for instance, he talks about fighting against "darkness." He also said that our culture had a "blind spot" that prevented people from realizing the unsustainable path we were on. People, he clarified, are so entrenched in their culture that they can not "see" it, are "pretty much blind" to it, or can not notice it because they are "asleep." Presumably, he suggests, their eyes are closed.

As a psychologist, Chris explained, he is constantly "working with how people believe things… and how they see things." In his classes, he added, he tries to challenge

his students to look at culture more critically and to try different viewpoints. He frequently poses questions like "Have you thought about seeing it this way?" After the ensuing discussion, his students often admit that they have "never looked at it like that." Chris seems to indicate that culture determines the way people think because it allows certain things, for example, unsustainable forms of agriculture and overconsumption, to remain invisible to the untrained eye. "You can miss things that are just blatantly there and simply not see them because you did not expect them to be there," he said. Because we are taught to ignore certain things from early on, the only way for us to become cognizant of these topics is to "step out" and watch our "own thought processes," Chris concluded.

Over the course of the two sessions, Chris touched on all three dimensions of ESD, focusing heavily on the intersection of the model's spheres, the place of "interconnection." Although he did not use the word "global," Chris nevertheless articulated that the issue pertains to the entire planet. The map of the world, he said, contains all these "artificial boundaries" that do not really exist but that inculcate in people the illusion of separate entities. In reality, the atmosphere and the oceans are not sealed off, and pollution freely travels across those imagined borders. ESD is a way to help people see the planet as one interconnected system, he argued. Chris also referred to the future orientation of ESD by contrasting it with the short-term interest of business, which is solely concerned with "what's good for the next 3 months, for the next quarter."

Annabelle

The notion of systems thinking also came up in my interview with Annabelle, a colleague of Ethan's from the design and architecture department. She saw ESD as

"a much broader approach [than EFS] because development means a process, or that something is going to happen within a certain period of time. It could be years, decades." She had not heard the term ESD before but thought that it meant something that was "happening," had a clear "beginning," and was "developing." The term did not cause her to associate anything negative, she said.

Annabelle's initial interpretation includes some elements of the "journey metaphor," which Milne, Kearins, and Walton (2006) argue is frequently employed when business discourse turns to the issue of sustainability. If one frames the pursuit of sustainability as a journey, they contend, the beginning of the journey, the "embarkation" itself becomes analogous to progress. The problem with this view is that the destination is often "left unstated, or undefined" (p. 813). This allows corporations to proclaim that they have set out on a path toward sustainability without ever clearly explaining what they envision as the goal. By declaring to be on a journey, they can postpone more radical transformations of their enterprises that would be required if they actually intended to achieve sustainability. It is possible that Annabelle associated the phrase "sustainable development" as a prolonged process with a beginning that could take, as she put it, "years, decades, or centuries" because she had been exposed to the *sustainability as a journey metapho*r in the media.

Although the term ESD was new to Annabelle, the concepts of sustainable development and sustainability were not. Annabelle thought that ESD referred to a more extensive endeavor than "only sustainability," which she felt was more applied or practical. In architecture, for example, it was associated with "choosing green materials."

Aside from its specific use in architecture, she thought, sustainability also implied a concern for future generations. She explained:

> Sustainability – one definition that I use for my students in the classroom is that it is like the seventh generation. If you want to make sure that seven generations after you have the same quality of life, then preserve it for the others… It is like you're borrowing. You have to make sure that you're keeping this for other generations, like for your children's and the children of your children, etc.

Because ESD implies a process, Annabelle argued, it pertains to the long-term impact of decisions, for instance, the consequences of an architect's design on a community. "It is a very ethical decision," she noted, "because you're going to be impacting a lot of people." We talked about the economic, environmental, and social aspects of ESD, and Annabelle pointed out that she considers the social justice component crucial because it relates to "the ethical part," which she feels is the "most important." Regarding the scope of ESD, Annabelle understands it as a "broader" concept than sustainability alone, but she does not specifically differentiate between local or global levels, saying only that sustainability appears to be more "applied." In the examples she discussed when we talked about infusing ESD in the curriculum, Annabelle made references to India, Brazil, and Cuba, indicating that she understood it as a global phenomenon.

Alice

While the social aspect of ESD ranked most important on Annabelle's agenda, Alice's first concern deals with instilling in students an awareness of the environment and having them recognize that it needs to be protected for the next generations. Instead of answering my question regarding the meaning of ESD with a lengthy definition, Alice

leaped right into her practical experience with infusing ESD in her English classes for non-native speakers. Many of them, she said, had never been to the beach in Miami, so she felt that outdoor immersions during which they could "sit down and reflect on the sand, the birds, and what's going on around them" were an invaluable way to raise their awareness of the environment.

Alice addressed the environmental, social, and economic dimensions and how they are connected. Regarding scope, Alice seems to understand ESD as a personal, local, and global phenomenon. Even though the environmental aspect is most important to her, Alice stressed that she probably talked more about economic issues than most professors in her department because her background is in economics.

Yvonne

Yvonne, who teaches law, is equally interested in getting her students involved in ESD. She interpreted ESD as "knowing about broad concepts of sustainability, global warming, and what the future with global warming might look like," and considered it a "critical topic" that should become "part of their lives." She feels that not educating students with regard to ESD will mean that they might miss the boat on green jobs. The role of higher education, she contends, is to prepare students for the future, which means that they need to have the potential for green jobs. Her students, she emphasized, always have to research a lot and reflect on documentaries that deal with sustainability. As a result, some have created a "green calendar" with information about local events dealing with sustainable lifestyles. Others have thought about water conservation methods at home and suggested ideas for a "green car wash."

Although these activities relate mainly to the environmental aspect of ESD, Yvonne said she has also taught a unit on "environmental racism," which addresses the social justice dimension of ESD. Finally, she spends a lot of time on the economic aspect in a course on business and the environment. She seems to understand ESD as a phenomenon with local as well as global implications, which all warrant attention. The Kyoto Protocol, the effects of global warming on the Maldives, and a local beach clean-up were some of the examples Yvonne cited during our conversations. Ultimately, Yvonne thinks, ESD should not be something extra but become "second nature." She hopes that students will soon come to view it this way, too.

Arianna

Up to now, the participants I interviewed were all similarly engaged with ESD, albeit with different foci. Many had been involved with sustainability long before the term became a popular buzzword in the media; a few had discovered the topic more recently and were still learning about it. To Arianna, the ESD discourse seemed mostly unfamiliar. She had participated in one of the shorter Green Studies courses a few months earlier, an immersion to a waste management plant, and confessed that although the visit had "really impressed" her, she had not found the time to create a lesson plan integrating the information into her chemistry classes, one of the requirements for earning professional development credit.

Arianna used to live in a rural area, and it was perhaps her bucolic background that made her associate ESD first with "teaching people how to sustain their livelihood through, for example, farming." In addition, she said, it probably meant teaching people to become more "aware of the environment and what we're doing to the environment." In

the follow-up interview, Arianna also said that ESD had to do with "learning not to release so much CO_2." Arianna's focus on the environment is in line with the research of Kagawa (2007) and Pepper and Wildy (2008) mentioned earlier, who found that ESD is most often associated with the environmental aspect.

Regarding scope, Arianna feels that ESD needs to be understood as a global issue. She explained:

> I think that professors need to push more for students to be aware of the environment, not just locally but worldwide, because due to the Internet, we're so globalized that if something happens here now, within five seconds you will know about it in Tahiti or somewhere else.

I got the impression that Arianna conceptualizes ESD more as a solution to environmental problems for the current generation than for future generations because she did not mention any of the key words indicating a future orientation. She is mainly concerned with existing pollution issues, saying that other countries, specifically China and India, are not "interested" in controlling pollution because they do not have the money to invest. The industrialized nations, Arianna thinks, are the ones who are trying to "make sure that everybody is on board," which is going to be "really hard." She also suggests that students do not care much about these issues:

> I think the students have very little awareness about anything that's going on around them. They don't listen to news. My perception is that they have no clue of what's going on other than they go to school, they go home, or they go to a party because you ask them things like "Did you hear what happened yesterday at such and such a place?"-- "No." Do you know about the farmers market that we have today in the Building 4?" -- "No. I just come to class and go back to work." …There's this total disconnect with the college and with everything around here.

This impression of "disconnect" is most likely the reason why Arianna feels that faculty have to "push" students to become more aware of the environment. Arianna used the

word disconnect several times, for example, when she talked about teaching science classes to non-science majors. “It’s totally disconnected,” she said, “and I try to connect it as much as I can, but they think that these courses are from another planet.” She seemed rather frustrated by this perceived disengagement and the difficulty it presents for faculty. Overall, though, she commended the college’s recent initiatives such as cleaning the lake on campus, adding fish to it, and setting up recycling containers. “I see more awareness,” she concluded.

“Planting the Seed”: Making the Case for a Holistic Approach

Of all the analogies that the professors used to explain how they felt about the paradigm shift toward ESD, the comparison to a seed that germinates and eventually bears fruit captured my attention the most. At first, I did not notice the seed metaphor, but when more and more of the participants referred to planting proverbial seeds, I began to pay attention. It seemed that these were important observations and beliefs regarding future outcomes of instructional input. Pepper and Wildy (2008), who conducted interviews with Australian educators, identified “imagining the future” (p. 621) as one of the meta-themes in their multi-case study on the conceptualization of ESD. The way of thinking that these researchers termed “looking beyond the moment” (p. 621) is similar to the long-term approach the faculty at MDC talked about. The following pages describe some of the common viewpoints held by participants.

Ellen, who has been with the college for over 30 years, was the sixth participant that I interviewed. Aside from teaching college students, Ellen also facilitates Green Studies workshops and serves as a council member of the Earth Ethics Institute. When

we spoke about her experience in a Green Studies workshop on environmental toxins, she told me:

> It's like they say in advertising. You have to have 13 times of exposure before it catches somebody's attention. It's like seeds. You plant seeds. You say something, and as that person is ready to sprout or think about that, start noticing, start thinking about all the things on a micro-level, then they might start to consider the chemicals.

This comparison to planting seeds sounded familiar. In an earlier interview, Dan had also used the expression "We're planting seeds" to describe his work with ESD and to underscore the idea that the end product was often not as important as the "processing" of new ideas.

A few days later when I read the transcripts of my first interview with Charles, I noticed the "seed planting" again. Charles was reminiscing about the early council meetings of the Earth Ethics Institute when he recalled that "each faculty member had a different growth rate, depending upon what their experience was." About his experience with students, Charles said the following:

> Over a period of maybe ten years of teaching environmental writing, eco composition I called it, I started to find that there was something in students that awakened. It wasn't just my enthusiasm. Something was there. For different students it would happen in different ways.

Reading this, I pictured a garden with bean plants climbing up a trellis, each spiraling up in its unique way. All this talk of seeds and planting had probably primed me. When I reread more interview transcripts, I noticed that the participants' choices of words suggested that they were engaged in a long-term process that included sowing ideas, watching them germinate, and helping them grow naturally – at their own pace. In my mind, the college turned into a large garden colony with hundreds of small plots

cultivated by faculty-gardeners, each creating the optimal conditions in which their seeds would flourish. “Planting the Seed – important theme!” I wrote in my journal.

Lakoff and Johnson list the seed metaphor in a section called “Ideas Are Plants” (2003, p. 47) as an example of commonly used metaphorical expressions. Our everyday language, they write, includes many expressions that are so commonly used that they no longer seem to count as “speaking metaphorically” (p. 51). Yet, the fact that people choose one metaphor over another can tell us more about how they perceive a phenomenon, the authors posit.

One might dismiss the seed analogy as a cliché, but to me it spoke volumes perhaps because a colleague and I had started a small organic garden with our students at about the same time as I began writing my dissertation. Tending a garden, I have learned, demands regular care, attention to the individual plants and the garden as a whole, resilience when faced with challenging pests, failing irrigations systems, and intruders, mutual support, and – above all – patience. Many seeds get sown, but not every one grows into a healthy tomato plant with hundreds of plump fruit on the vine. For whatever reason, some seeds lie dormant for quite a while before they sprout and produce fruit.

There exists a palm tree variety, Dan told me during our interview, which takes about 100 years to bear fruit. This means that only those with extraordinary longevity might one day eat the fruit of a tree that they planted themselves. Most people probably enjoy the fruit of trees planted by someone else in the past. This particular palm, we agreed, served as a true symbol of the intergenerational aspect of sustainability. Dan thought it was the date palm, but when I researched it, I found that the date palm produces fruit within 3-5 years and continues to grow for more than 100 years (Gepts,

2002). Instead, the female variety of an unusual double coconut palm from the Maldives, *Lodoicea maldivica*, is said to not bear fruit until the tree is "over 100 years old" (Double Coconut, n.d.). When I ran into Dan a while later, I mentioned the date palm story to him, and upon his request, I sent him the links to the Web sites where I had found information supporting the legendary deferred gratification. He replied as follows:

> I think what may have happened is that as the story is told and passed along orally, there is always better storytelling with more specificity, and as the real point of the story is not botanical but rather moral, the actions that positively impact future generations are the moral of the story. So perhaps, it would be better told with the idea that for plants to live long and bear fruit for many years and for many generations, they require care from each succeeding generation.

Siding with Dan, I must agree that the ethics of the story and not the name of the plant render this tale worth telling. In our modern society where instant gratification prevails, the palm story fascinates *because* the anticipated fruit arrives so late.

In addition to the palm tree story, Dan gave me another example of delayed results during our interview. As an English for academic purposes professor, Dan regularly takes students on outdoor immersions to the Everglades National Park because he believes that it offers an "experiential base" for what they talk about in the classroom. Dan recalled how one of his students expressed frustration about the field trip. "I don't know why we're doing this," the student complained to him, obviously doubting the benefits of the excursion. That same semester, Dan then told me, he received an e-mail from a former student who had gone to the Everglades with him 3 years earlier. The student wanted Dan to know "how the trip to the Everglades had changed her life." Dan

paused for a moment and added modestly, “I didn’t change her life – the Everglades did. All I did was facilitate that encounter.”

The awareness of what constitutes a more sustainable lifestyle takes time. Ethan said that he thought over time people were becoming “much more conscious and aware of the impact.” Like Dan, Ethan also had a former architecture student contact him after graduation. The student had transferred to one of the most prestigious design schools in the United States and was dismayed that the program made “very, very little mention of sustainable design,” a prominent topic in Ethan’s class. It seems that once the seed has been planted in students, many think more critically and with sustainability on their mind.

Leonard also keeps in touch with many of his former students, so he knows first hand what directions their lives have taken. He told me that he currently has students in 87 undergraduate programs in universities and 42 in graduate and law school programs. When students contact him for reference letters, he makes them report back to find out if they apply the ethical issues they had discussed in his class. Then he asks why he should invest in them. He said, “It’s amazing to me, both in terms of their recognition and what they also report, that a lot of what we’re talking about doesn’t stop.” One of his former students is now involved with social responsibility at Johnson & Johnson in Switzerland; another student researches environmental sustainability in human habitats in India and Madagascar. Yet another student is working for social responsibility at the agricultural giant Cargill.

Some of the participants specifically stressed that ESD ought to be introduced as early as possible. “It’s important to start with young children. Plant the seed and nurture it,” Yvonne, the law professor, said. “At the college,” she continued, “the problem is,

they either have that seed from home or not." In that case, it falls on the college faculty to instill those values and act as role models, a notion that is supported by Shepard (2008), who contends that the "affective learning outcomes" associated with ESD depend on suitable role models in higher education, a topic that will be discussed later.

Under favorable conditions, the proverbial seeds spread to other areas of the garden, or the community. Laura, for instance, shared a story about one of her College Prep students, who came back after two semesters to tell her professor that she had taken her husband and children to Shark Valley, an area in the Everglades, and that they had enjoyed it a lot. Even though they live so close to the national park, many students had never been there, Laura told me. When they finally get a chance to experience nature up close, they want to pass it on to others. According to Laura, hearing students excitedly call out "I have to bring my wife!" was a typical reaction; this is why she believes fervently in the mission of the Earth Ethics Institute. She is very pleased that the institute provides the funding for sending students on these immersions because on their own, they would not go. Until professors hear back from former students, they may never know if what they discussed about sustainability has taken root. Nadine summed this idea up as follows:

> I don't know if it sustains itself after they leave my particular class. I don't know if it becomes part of their paradigm of thinking. I can only hope, but I know they have the information.

Students may not always show if they have grasped the concept of sustainability or how they feel about it. Thomas, for example, said this about his mathematics students:

> I think it depends on their background and their exposures and their interests, but I think they're pretty quick as a general rule. I mean kids are fast. They know a lot more than they let on, and they know a lot more than

> we sometimes assume, and they don't always raise their hands. Some people are too distracted, some are too busy, some are going to not come, and some are going to be brilliant about absorbing it all and become activists. So if you can get one or three, you did well.

The majority of participants I interviewed agreed that ESD was a process that took time, and several professors specifically stressed that the issue should not be forced because this might weaken the outcome. "I think you cannot change this in a short time, and I think it compromises the result, your outcomes," Annabelle reasoned. Natal expressed a similar sentiment, saying, that one should expect a certain resistance, which was only "natural" and "part of the process." By including the topic of sustainability in their coursework, professors create opportunities for students to participate in this international debate.

Many of the participants feel that these confrontations present valuable "teaching moments" or "teaching opportunities," which allow students to hone their critical thinking and communication skills. The goal is not to persuade students but to expose them to the problem and to provide a platform where they can examine and discuss it. This attitude is in line with the second key characteristics of ESD as it appears in the framework for the UN DESD, which states that ESD is "values-driven" in that the "principles underpinning sustainable development are made explicit so that they can be examined, debated, tested, and applied" (p. 17). Moreover, the framework lists "critical thinking and problem solving" (p. 17) as another key characteristic. The idea, Natal elaborated, is not to "try to get this kid on my side because that's not going to work, not in that time span." Some students may not be convinced that the world is following an unsustainable path, and a few might even be completely opposed to the ideas advocated

by sustainability proponents. This resistance, however, does not mean that they will never change their position, or as Natal put it, "…it doesn't mean that the seed didn't land in their soil."

When professors choose to incorporate ESD, they must be prepared to deal with a certain amount of discord, and they cannot be impatient. Gardeners have to know when to prune and when to fertilize to make their plants grow. Faculty, it seems, also need to find the right balance when they infuse ESD. Chris told me that he did not think one could simply teach that; it had to become more of a realization than a "stick it into somebody's head" approach. He is convinced that one needs to practice to feel that inner connection, which is the reason why he considers it "ultimately a spiritual practice."

Clearly an understanding of sustainability concepts does not take root over night in most people. Ellen mentioned that there is typically a "delayed response." She said she believed in repeating the message and in helping people find individual ways to incorporate these new ideas into their classes and their daily lives. "People have to come to it," Ellen explained. The Earth Ethics Institute, she said, can offer more workshops and ask faculty to submit lesson plans to publish on the EEI Web site so that other people can get ideas. However, one cannot spoon feed ideas about more sustainable practices to faculty and expect them to regurgitate that information in the classroom. "People really need to come up with their own ideas and their own tools," she added.

Ellen recalled that when a senior advisor initially trained her, she started out using his curriculum modules. Quickly, though, she realized that she was using "his stuff," so she modified the lesson plans until they became her own. Ellen summed up the argument like this: "People can't use other people's stuff; they have to make it their own. That's

what the EEI is trying to do. It's just trying to ring people's bells and get them to incorporate it."

In his article *How Does Your Garden Grow?,* Axley (2002) touches on this importance of authorship. He contrasts the gardening metaphor with the machine metaphor to describe different organizational leadership methods. Today's fast-paced global economy, he contends, requires flexibility and a management style that relies less on mechanistic views and more on an organic model like a garden. People respond better when they have personal input in their work, he suggests.

This reminded me of the issue of the inflexible online business course that Alice had talked about. When virtual courses are designed in a mechanistic way, instructors cannot easily include the course content they consider vital, a problem that will be discussed in the next chapter. Monocultures may function like machines, but organic gardens rely on creative planting methods that foster symbiotic relationships between plants. The fifth key characteristic of ESD reads as follows, "Participatory decision-making: learners participate in decisions on how they are to learn" (p. 17). In other words, faculty gardeners need to be able to plan courses that allow them and their students enough room to grow. After all, instructors are learners, too. Crop rotation is a must. What has worked in one semester, may not work with a new group of students. The world changes rapidly, and the curriculum has to be flexible enough to reflect this.

As McNaughton (2007) observes, however, the pedagogy in most educational institutions is still centered on a "product-based" and not a "process-based" approach (p. 634). This adherence to a traditional curriculum that emphasizes skills and knowledge attainment over critical thinking and problem solving is delaying ESD, or sustainable

development education as McNaughton refers to it. Using the metaphor of Sleeping Beauty, she compares the institutions' reluctance to implement ESD to the thorny hedge that obscured the fabled castle for a century. For many years, sustainable development education was looked upon as a "'fringe' issue" (p. 627), while administrators were preoccupied with elevating measurable standards and basic skills. McNaughton considers this the "neoliberal" backlash toward earlier "more 'progressive'" educational endeavors (p. 627), yet she also expresses hope that the sustainable development education curriculum will eventually emerge from its slumber.

At MDC, this seems to be happening. The proverbial hedge shrouding the view of the faculty garden is slowly vanishing, allowing the seeds that the EEI planted many years ago to sprout and become visible at last. "I think the Earth Ethics Institute has finally now become something that the college values," is how Ellen summed it up.

Summary

The community college faculty members interviewed for this study understand the concept of ESD from a personal and professional vantage point. They interpret the term with considerable nuance, often within the context of their particular field. Some prefer the alternative term EFS, while others favor ESD. Rather than offering canned definitions that one might come across in official reports on sustainability and sustainable development, the participants shared their distinct associations and concerns. Some were obviously more familiar with the term ESD than others; yet, even those with prior exposure to the term, and thus a firmer opinion with regards to its meaning, did not proffer final versions of a definition. Instead, most faculty members seemed still to be in the process of positioning themselves within the debate, often posing questions in place

of supplying me with exact answers. Many scholars in the field of ESD have come to the consensus that "no single framework, conceptualization, and understanding of either sustainable development or sustainability" exists, and that the conception of ESD is "an evolving one" (Kagawa, 2007, p. 319). The findings of this study appear to confirm this notion.

Regarding the three pillars of ESD - the environmental, economic, and social –the majority of faculty referred to all three. Despite this inclusive interpretation, the environmental aspect loomed largest in everybody's mind. The fact that many people focus more on the environmental aspects of ESD and less on the economic and social aspects and their interactions has been discussed in the literature. The results of this study appear to back up evidence for this tendency. However, although the environmental pillar of ESD was readily understood and emphasized, many professors also highlighted social justice and economic applications as significant parts of ESD. The gap between rich and poor nations, the issue of fair trade, the interdependencies that arise when human beings live in densely populated urban centers, and the importance of protecting cultures and languages were some of the issues the participants brought up.

Although many participants experience the work toward ESD as challenging, they believe that they can make a meaningful contribution to the college's overall effort. The process of integrating ESD across the curriculum takes time and requires holistic thinking, they think. Consequently, the participants favor an integrated approach in which each professor supplies a small but consequential part to move the college toward sustainability.

CHAPTER V

INFUSING COURSES, ENCOUNTERING OBSTACLES, AND BUILDING INTERPERSONAL RELATIONSHIPS

In the previous chapter, I have focused on the participants' various conceptualizations of the term education for sustainable development (ESD) with a particular emphasis on the recurring metaphors they chose to describe ESD at their community college. In this chapter, I will present three other major themes that developed during the data analysis. The first theme, "Learning to Climb That High Mountain": Putting Green Studies into Practice, centers on the professors' experiences with learning about ESD and infusing it into their courses. Because this is a complex topic, I have divided the narrative into eight sub-sections, each presenting a minor theme. The second theme, "We're in the Belly of the Beast": Dealing with Campus Culture, explores some of the obstacles the professors encounter at their college, in particular relating to conflicting cultures. Finally, the third theme, "I Know What You Did, and I Think It's Good": Establishing Connections and Nurturing Relationships, deals with interpersonal relationships, which the participants regard as a key factor in enhancing ESD in their community.

"Learning to Climb That High Mountain": Putting Green Studies into Practice

The following narrative explores the theme of studying sustainability and incorporating the ideas into one's courses. At first, I illustrate how the participants learn about ESD through the college's Green Studies workshops and personal enrichment. This is followed by a section in which the impressions of four participants who attended a

Green Studies workshop are compared and contrasted. I also write about the sense of despair that people experience when confronted with grim facts about the environment. Next, the faculty members' views on compatibility between ESD and their subject areas are laid out. In an ensuing section, the difficulties of enhancing virtual college courses with ESD are described. After that, I discuss the topic of infusing ESD into courses and inculcating students with values. In that context, I also bring in the issue of perceived indoctrination. Finally, I relate the participants' views on being a role model for students and their concerns about sending mixed messages.

Learning about ESD

Although the Earth Ethics Institute (EEI) has offered professional development workshops to enhance Earth Literacy and promote sustainable lifestyles for nearly two decades, the signing of the 10-point action plan to foster sustainability in higher education (Talloires Declaration) in January of 2006 accentuated the institute's mission. Dan, who was a key actor in getting the college to sign on, thought that this official commitment helped the EEI because they were now able to point to the document's action plan at meetings with the administration and remind them: "We signed on, so we need to come through on some stuff." When the college devised its 10 General Education Learning Outcomes in 2007, members of the EEI Council were instrumental in shaping the tenth outcome: "Describe how natural systems function and recognize the impact of humans on the environment." At present, the Green Studies professional development workshops and immersions are considered an integral part to fostering the needed skills and values in all stakeholders of the college community. In the interviews, I asked the participants about the Green Studies workshops they attended and how they learn about

ESD in general. I also inquired if and how they infuse the ideas presented in the workshops into their own course work. The following section captures their experiences.

For Natal, the Green Studies workshops provided "a window of possibilities" into solving the problems associated with mankind's current, unsustainable trajectory. They were, he said, an important component that made it possible "to climb that high mountain." Before going to EEI workshops, Natal added, he had been aware of sustainability issues, mainly on a personal level. Now he feels encouraged by the EEI to connect these ideas to his teaching. One of the workshops he attended dealt with the Earth Charter, and he is now infusing the ideas presented in that workshop into his editing classes. Of the 19 students in his class, Natal said, not one had heard of the Earth Charter before, but early on, he could tell that they were interested in the project. During the previous year, Natal had asked his students to create public service announcements about global warming, which he said had resonated with them. At the end of the semester, several students told him that the project had been "the best thing" they had done in a long time, and that it had made the class "very interesting."

Aside from Green Studies courses, Natal learns firsthand about ESD from a family member who is building a sustainable house in the Caribbean. In addition, he reads books and subscribes to online newsletters featuring sustainability. While most of the Green Studies workshops were "a very hopeful experience" for Natal, he also admitted that one could feel despair when confronted with the conditions of the planet. "You realize that it's a very high mountain to climb, and that sometimes it can look overwhelming," he said. However, overall, he said, the workshops empower him to face the challenges and "to climb that high mountain."

To Ethan, who teaches architecture and design students, creating awareness for sustainability also involves a metaphorical mountain. It feels "a bit like an uphill battle," he confided. The Green Studies courses he had attended had been "great," and overall he praised the EEI for supporting and funding various projects, exhibitions, and conferences for his department. In addition to participating in workshops, Ethan also conducts his own research and teaches himself different aspects of sustainable design. He has ordered journals, books, and videos on sustainability through the college's library, and often his students share articles with him.

To infuse ESD into his lessons, Ethan has his students create drawings and models of sustainable buildings. They also have to research various aspects of sustainable design that they must then present to the rest of the class so that everybody can learn more about this developing field. Ethan's strategy reflects the fourth key characteristic of ESD, as described in the framework of the UN DESD, because it presents an example of instructors and learners collaborating to gain knowledge.

When I asked Annabelle how she learns about ESD and appropriate teaching practices, she responded that the first Green Studies classes had not directly dealt with sustainability or how one could educate students about sustainability. Instead, they had focused on one's relationship with Earth, which she feels was a "completely different perspective." It was a "very good learning experience," Annabelle added. The biggest impact, however, had been a 2-week visit to Genesis Farm that the EEI had arranged and sponsored. Many of the regular Green Studies workshops the EEI offers present similar information, Annabelle explained, but the intensity of the extended visit to Genesis Farm

really helped her grasp her position as a human being within the universe on a much more personal level. Afterward, she gradually began to change her lifestyle. She recalled:

> After I came back from Genesis Farm, I started composting. I changed my cleaning products, you know, little by little. You need time to do that because everybody's very busy, and it takes time to implement these things. I started implementing more when I came back from Genesis Farm because during the summer, I had more time to make changes to my daily life.

She bought books on cosmology for her kids. Then she hung up the two Earth flags she had received from Genesis Farm, one in her house and one in her office. They serve as daily reminders because "it has to be like a daily attitude toward that," she explained.

These days, the EEI serves as Annabelle's resource. The institute offers the information, and professors adapt it to their curricula, Annabelle clarified. She optimistically projects that in the future, increasing numbers of faculty will turn to the EEI for guidance because the ones who attend workshops gradually disseminate the information among their colleagues.

Alice, the ESL professor, first heard of Green Studies not from a colleague, but in an e-mail from the department of CT&D that was distributed college wide. She had only been employed for a month when she decided to enroll in the 8-hour course, Green Studies I. The course was taught by the former director of the EEI, a Catholic sister who "infused a lot about spirituality," Alice recalled. This first course started her thinking about the connection between the environment and spirituality. Over the next few years, she attended several other Green Studies workshops and immersions. Like Annabelle, Alice also went to Genesis Farm, which was "almost like a ritual experience" in that participants engaged in several activities that celebrated the Earth like the original

inhabitants of the area, the Native Americans, had done for centuries. Some people could be "turned off" by this type of worship, but she did not experience it as something negative, Alice said.

Aside from the Green Studies workshops, Alice enhances her knowledge about ESD by reading publications with an environmental focus and perusing Web sites on sustainability and spirituality. Public radio, she added, was another source of information. She is also a council member of the EEI and attends the monthly meetings.

At this point, the Green Studies courses she signs up for serve mainly as opportunities to meet other faculty who are interested in issues of sustainability and as a refresher. Alice is critical of the fact that they tend to draw the same group of people. "It's sort of like preaching to the choir," she said and elaborated:

> You tend to see the same people over and over. And I know sometimes we talk about reaching out in Green Studies or in the Green Team or even at the EEI to be a more diversified group, and this doesn't usually happen. The aging baby boomer hippies tend to be the ones going to these events.

When I asked how the core group could reach out to other people, Alice suggested getting more students involved. She also thought that organizing more informational luncheons that draw people who have never taken any Green Studies courses could be a promising option. Alice reported the following about the luncheons she had planned in the past:

> I have gotten faculty members who might not have thought of themselves of being green. And they come and see a movie like *Fast Food Nation*, and they say, "My goodness, my students need to know about this. When can I borrow the movie to show my students?"

Food, we agreed, attracts people, and if the food is organic and healthy, it can serve as a talking point as well.

Laura from the College Prep department heard about Green Studies from one of her colleagues. She had been at the college for a while without realizing that the EEI existed. Her first workshop, she said, was "an amazing experience." At the same time, she disclosed, it felt like "a culture shock." Laura recalled an activity called the Cosmic Walk, in which participants walk along a symbolic rope laid out in a spiral representing the 14-billion-year history of the Earth. Featuring lit candles and soft music, the ritual is supposed to bring the knowledge of Earth's history from "our heads to our hearts" (The Cosmic Walk, n.d.). Laura remembered:

> I felt very disconnected in a way. I thought, "This is very weird for me but yet, this is me. This is who I am." And at the same time, I was battling with myself. I was going through an internal transformation because this was instilled in me. I didn't realize this until I wrote my final paper for that class. I didn't realize that I grew up learning sustainability through my father. My father always had rain barrels and I never knew it. I mean I knew it. He collected water in a bucket and …my mother would wash clothes with rainwater. My father would use the rainwater to rinse the dog plates or anything like that. They were teaching me the true essence of what we need to live with and how we should survive. They were teaching me sustainability without me even knowing it, and so that's why I kind of felt like something nostalgic inside of me was coming out as I was a part of that class, and that is where my transformation took place. And I enjoyed that moment so much that it brought tears to my eyes because I realized I always made fun of my parents doing this. I thought they were always very silly watering. I said, "Dad, why don't you just get the water hose?" You know, he's like, "Are you crazy? You need to save this." And I never made the connection, and it took me this long.

In one way, Laura's story is another example of a seed planted early in life that finally comes to germinate years later, a metaphorical theme that was discussed in the previous chapter. Yet there is more to this anecdote. It deals with gaining consciousness about and accepting a part of one's personality that one was either not aware of, or that one might have suppressed because it did not fit one's self-image. "I never knew it,"

Laura says first, only to correct herself immediately by adding, "I mean I knew it." The experience of realizing that this knowledge of sustainability existed in her all along, as a seed sown by her parents, is so powerful that Laura is moved to tears.

In the beginning of the excerpt, she recalls coming to grips with the idea that a pragmatic person like her, prone to dispensing practical advice such as "Dad, why don't you just get the water hose?" instead of bothering with a rain barrel, would even participate in an unconventional ritual as the Cosmic Walk, let alone find it meaningful. Laura experienced the struggle of this "internal transformation" almost like a birth, as if something inside her "was coming out." Also notable is the fact that the transformation does not occur until Laura reflects on her Green Studies experience when she finally sits down to write the paper that is required to receive professional development credit.

Earlier statements by Natal also suggest that reflective activities such as reading a document like the Earth Charter, and then creating and editing a short film about it can result in students emerging with a deeper understanding of sustainability. Natal explained the phenomenon like this:

> It does get into their psyche because they repeat it so much, and it works well because it is their own. It is the message digested through them because they've had to take that writing and adopt it to what they want to say.

Natal's account includes elements that are similar to Laura's. Both describe a psychological transformation that is the result of allowing an idea to enter and pass through oneself. The gradual internalizing of the message allows Natal's students to make it "their own," just as it helps Laura realize who she really is. Laura said she loved the experience so much that she now teaches the Universe Story in her own classes.

When I spoke to Nadine, the education professor, about her experience with Green Studies, she told me that she considers herself an "environmental educator" because she began taking her elementary school students out to the Everglades National Park long before she became a professor of education at the college. When she started working with the pre-service teachers, she realized that they, too, needed to experience their surroundings, so she started organizing field trips to get them "out into the community." One day, she saw that the EEI offered a Green Studies immersion to a section of the Everglades she had not visited in a long time. Nadine decided to sign up. She was curious to find out how that part of the park, which had been devastated by Hurricane Andrew in 1992, had been rebuilt. "I wanted to get reoriented to that area," she explained.

The immersion impressed Nadine in several ways. "The guide was well-educated in the area, and it was a real hands-on experience. I mean, we went slogging out into the cypress islands, which I had never done before…It was great." When I asked her what she had gleaned from the workshop, she said she learned that people still cared and were educating themselves. All too often, Nadine elaborated, people do not recognize the tremendous value of the Everglades as the region's water supply. They will snicker, "Oh, it's a swamp. What's the big deal?" Nadine finds remarks like these frustrating and believes that "we need to raise a population of citizens who are aware of its importance." She said she would be interested in attending more Green Studies workshops because she was "determined" to find a way to bring them into other areas of the teacher education curriculum "rather than just the science education courses."

Of the Green Studies workshops he attended, Leonard, the international relations and government professor, was most impressed by the program that focused on the Earth Charter, he said. The other two workshops were "instructive personally in terms of strategies for the curriculum." The bioregional sustainability course, Leonard elaborated, was led by an "amazing, exemplary environmental educator," and the principal value of the course lay in "seeing for the first time a lot of things that are just totally unique to Florida." He said he considered the workshops instructive and inspirational, and he also had a positive impression of the other participants, whom he found "committed."

Overall, Leonard indicated that the Green Studies courses helped him become better informed. Before attending the workshops, Leonard admitted, he had thought that his environmentally engaged colleagues were "particularly notable individuals." Now he wants to get more active himself. "I realized," he said, "that I've got to do a better job of integrating the ethics of environmental promotion as well as protection." He would like to attend more workshops in the future but finds that his schedule presents a significant impediment.

Yvonne from the law department also thought that the EEI could organize more in-house conferences on how people can personally make a difference on a smaller scale. "Many people don't have time for graduate courses," she said, adding that the short Green Studies workshops such as the one on the precautionary principle were "exceedingly interesting."

One such short workshop on food and the environment had a direct impact on Thomas. "It actually converted my diet," he professed. He said that he enjoyed the

reading assignment, an article by food journalist Michael Pollan, for the workshop and that he found the information presented "fabulous" and "intriguing."

Charles, who has been involved with the EEI for many years, feels that if the school could become an "Earth-based campus, it would change all kinds of things about the way we do things." However, in his assessment, the college was not yet there despite having the privilege of an institute like the EEI. The best thing, he thinks, would be to create a new Earth-focused model from scratch, which he imagines as follows:

> I wish we were starting the college over, and we could build the college with the framework of Earth as the primary educator. Then we would just start to look and say, "Well, how are we going to teach this anatomy class? How are we going to teach this chemistry class? How're we going to teach this ballet class?" We could just go through the entire curriculum and maybe even create a seminar, and we'd say, "What if…" I think that would be a wonderful experiment to do for say a 4 or 6-week seminar, or even start it at a spring break, and then see how that could become realized in the following year, what we could take from that and bring to the college. Slowly, slowly over time, we might find that we are more Earth-centric. I mean, it's so bizarre to think that we teach and we're not that… I mean, so bizarre.

Aside from the idea of building a college based on such exceptional ideals, I find it interesting how Charles personifies the Earth as a teacher. The metaphor of Earth as our mother is widespread (Armstrong, 1993), and mothers are certainly involved in teaching their children. However, the way Charles phrased it did not seem to indicate that he had a maternal role model in mind because the expression "primary educator" carries a more professional overtone. Charles is implying that we need to seriously study how the Earth works scientifically, and what we can learn from this. He is also indicating that this information should be given priority above all else. No longer would ordinary anthropocentric concerns such as preparing students for the global economy or improving

quantitative reasoning skills drive the college curriculum. Instead, the courses would become more focused on the needs of the Earth and its web of ecosystems.

In the absence of such a radical overhaul in the near future, Charles regards Green Studies as a vital component of professional development training. He explained:

> The whole idea of Earth Ethics that we had originally set up was to be a faculty development center. You would reach the students through the faculty. If you got enough faculty trained in Earth Ethics, then that would start to filter into the curriculum.

While he generally praised the work of the EEI, Charles expressed a caveat. As any organization with a mission, the institute needs to be careful not to become too dogmatic, he cautioned. He was critical of tendencies to focus too much on a singular belief system, saying, "Green Studies gets weak when we start to do that, when we no longer challenge ourselves to look at things, to debate things, and to explore differences of opinions." For example, people should not have to feel shy about not being vegetarian, he explained. One of the things he likes best about Green Studies is that it encourages discussions.

Overall, the participants seemed to agree that the Green Studies courses offered important new perspectives, opportunities to learn about the local bioregion, and chances to meet and interact with other faculty and staff who shared similar interests. In the next section, I will compare and contrast four different viewpoints.

One Workshop - Four Perspectives

A tight schedule and the fact that some Green Studies workshops can take an entire day had kept Arianna from participating. She finally decided to sign up for a 2-hour immersion to the local waste-to-energy plant. According to the electronic flyer the EEI sends out to promote the workshop, the objective is to examine the "social,

environmental, financial and health issues relating to waste disposal." In addition, participants inspect a 12-acre wetland restoration project at the facility. To earn professional development credit, faculty members have to submit a written document in which they explain "how they will incorporate into their classes their awareness of the link between waste disposal, levels of consumption, and environmental health issues" (EEI flyer). When I asked her about the experience, Arianna recalled:

> I was really impressed about how they are doing everything they do there. I lived in the rural area for a long time. I always wondered what happened in that plant, and whether we were getting any chemicals that we were breathing everyday. From that perspective, I was willing to see what they were doing there, and I was very impressed with the operation they have. They generate their own electricity.

When I compared Arianna's description to those of three other participants who had attended the same immersion, I was struck by the fact that she focused exclusively on the positive aspects of the workshop and did not seem to be aware or critical of the fact that the plant not only generates electricity but also produces chemical byproducts. She also did not mention anything about the overpowering smell that two other participants clearly remembered.

In contrast, when I interviewed Thomas about his visit to the power plant, the foul odor was the first thing he recalled. "The intriguing thing is you go there, and you show up, and you have this almost instant gag reflex from the smell. It's this weird sickly sweet kind of smell that makes you want to throw up," he explained. Aside from the smell, Thomas also raised the issue of toxins in the burnt ash. He remembered the tour of the facility and a conversation with the staff:

> They were talking about their upgrades to the emissions because they were actually busted for exceeding certain stuff, and so they installed very high

> tech filter bag**,** extraordinary high mesh, to grab all these nasty bits. Then instead of trying to remove the whole assembly, all they have to do is just do a surge shake, and it drops out this extremely toxic ash. I said, "It's fantastic! It's great!" So then what do they do with that? Well, it has high concentrations of a lot of controlled substances, from all the carcinogens to just general toxins. And so the federal requirement is merely keep the PPM below a certain amount. So what do they do with it? They mix it in with the other ash and dump it in the backyard, and I said, "And dilution is the solution. Is that what your plan is?" And the guy sort of, obviously, he didn't want to respond to my question, and obviously they're trying to be nice and spin it. I was just like, "You make it a bigger problem," and they yelled, "There's a pan underneath it, and it contains it." And I replied, "And you think that pan is eternal?" So I mean, it's always intriguing that even when a company, "exceeds the federal requirements for safety and dilution" and all that, our system doesn't want to deal with trash. It's for somebody else.

The third participant who had attended this immersion was Natal. Like Thomas, he recalled the pungent smell and something else that bothered him:

> I never knew that you could actually turn garbage into energy**.** I mean, I had heard about it, but I had never been to an actual plant. I thought the tour was well organized, but the funny thing was that one of the guys who was giving us the tour had us in a room kind of like this, and it stunk there. I was the first one to say it and to ask, "Do you work with this smell everyday?" And some people would say, "What smell?" I said, "It smells like garbage here." And he says, "Yeah, you do get used to it unfortunately**.** When you go away and come back first thing in the morning, it hits you." But that's not what I remember most. I remember him encouraging us to drink a bottle of water, and I thought, "How sneaky!" Because here we are, I mean, when we talk about plastic, we always say plastic is our enemy number one in terms of bottled water, right? So, he's like a plastic water pusher. He's like, "Here, have more water."

I asked Natal if the facilitator from the EEI had said anything about the plastic bottles, and he responded:

> Nobody questioned it. The people thought he was offering us water because they thought, "Ah, he thinks we're thirsty." But nobody questioned it. Maybe they thought about it. Ellen was the one leading the activity. I'm sure, she knew inside, but she didn't want to vocalize it, and I didn't either. I just thought to myself, "Oh, okay, yeah."

Ethan, the fourth participant to attend the workshop, did not make many comments about the immersion. I got the feeling that the workshop had not impressed him too much. He remembered that the focus had been on turning waste into energy. Visiting the plant, he said, reminded him of the fact that our society consumes a lot and produces much garbage. He said he wished there was something more efficient than simply burning the trash and added that he favored recycling. Like Arianna, he did not mention anything about the smell.

By juxtaposing these four viewpoints, it becomes evident how different an impact even a short workshop can have. Faculty members bring individual background knowledge and a special set of sensitivities with them, and each person processes the same information in a personal way. In addition to reflecting on the experience and designing a lesson plan to incorporate the material, it would be interesting to bring participants back together for a follow-up meeting during which they could share what they will be able to use as a result of the workshop. Finding out what other workshop attendees noticed or objected to, actively or passively, would add to the overall professional development experience in that it might prepare faculty to better deal with their students' diverse perspectives. In Arianna's case, a follow-up meeting may have been an incentive to create the lesson plan she had been planning to submit but somehow had not gotten around to.

Dealing with Despair

Creating a lesson plan that infuses a new topic does not pose a problem for most professors. At times, however, the information presented in Green Studies workshops can be disheartening. After all, being confronted with facts detailing the decline of

ecosystems, the potential danger of genetically modified organism in the food chain, or the global depletion of fresh water sources can make people feel depressed. Several participants talked about this sense of despair. A sudden shift in one's worldview, however eye-opening and fascinating, can be deeply disorienting, they said. Faculty must first deal with this despair on a personal level; they must also prepare themselves for the time when they present these issues to their students. According to Sipos, Battisti, and Grimm (2008), the kind of transformative education that many scholars believe is needed to shift toward a sustainable future requires that faculty be ready for potentially complicated repercussions.

As a psychologist, Chris is prepared to deal with perplexed students, but how can an institution prepare educators who have not been trained to handle these difficult situations? Chris was not sure if there was a proper method of preparing faculty to teach ESD. Handing them a lesson plan would be one way, he said. However, when I voiced my concern that this might not work for everyone, he said that he kept taking courses and reading books precisely because he did not know what would work. A key point, he said, was to engage in personal reflection first. He elaborated:

> I don't think I'm quite there yet, but I think…there are moments when you tap into…this spiritual dimension that you really become kind of fearless... and you really kind of believe things are ultimately going to be okay…The more people can tap into this consciousness, the sooner, as a species, we're going to turn a corner.

What Chris described sounded like a personal quest for inner peace that could serve as a resource, a kind of deep underground well one could "tap into" in times of need. He did not describe it as a religious experience but more as a meditative practice. In fact, Chris said that he taught his students how to meditate to help them cope with stress.

He explained, “I teach people how to relax. I teach them how to breathe. I teach them how to get control of their emotions so that they are not getting carried away on waves of anger, which happens to everybody.” At that instant, it made me think that merely asking faculty to integrate principles of ESD into their classes without providing them with emotional support to deal with the consequences was not wise.

When I mentioned this concern to Ellen, she admitted that she had experienced this shift in perspective and the ensuing “grief” not only in students and Green Studies workshop participants but also in herself. She recalled, “I felt so sad for, like a year. I didn’t feel like singing or whistling. It was like a big grieving process.” Ellen was lucky to find a workshop that included a special section that helped her deal with the problem. She remembered it like this:

> It was a whole weekend workshop, and it was a lot of despair and empowerment work, and that really turned a switch in me where I went into mourning. It was probably a couple of years for me, and it took a while to shake it, but I came through it.

As a result of her own experience, Ellen now feels better prepared to help others anticipate the internal struggle lying ahead. “I can see it coming,” she told me. In the environmental workshops, she warns participants by saying: “I’m sorry to have to tell you this, but now your process is going to start. Don’t think that this will come without some mourning and a grieving process. It’s painful. There’s a whole process that you go through.”

According to Mueller (2008) many environmental educators focus too much on impending ecological disasters in an effort to motivate their students to act more responsibly. Instead of leading to the desired result, he contends, this method might

actually drive learners further away from dealing with the environment because they come to associate it with problems. While Mueller is mostly concerned with young people reacting this way, one can argue that such a doomsday approach might also affect adults negatively. Some may fall into an eco-depression like Ellen described it; others, as Mueller suggests, may develop a fear of the environment and avoid the topic altogether.

When I asked Ellen if she thought it would be helpful for faculty to learn techniques or coping strategies, she replied that she would "love to develop that." ESD is not some new content area or skill that faculty can acquire in a few professional development workshops, and because workshop participants are asked to scrutinize their belief systems and examine their most personal values, professional development workshops on ESD should also attend to the participants' affective domain by offering emotional support.

Not all participants talked about such periods of sadness or feelings of hopelessness. Yvonne, for instance, said that she feels called to action, instead. Still, the fact that several participants recalled a period of despair shows that this "side effect" of ESD must not be overlooked.

Integrating ESD across the Curriculum – Perceived Compatibility

Moving from ESD theory to practice requires that professors regard their own field as compatible with ESD. Participating in a Green Studies workshop and creating a lesson plan that incorporates the material is often the first step. I wanted to find out if and to what degree the participants consider their disciplines compatible with ESD. The following section highlights some of the common responses.

Annabelle said that her discipline, architecture and design, is highly compatible with ESD because it draws from many other fields such as technology, art, and environmental studies. Her curriculum, she added, offers enough flexibility to infuse sustainability practices into the coursework. She also thinks that faculty in every discipline can incorporate sustainability and environmental literacy into their classes.

Her colleague, Ethan reacted similarly, saying that his field, architecture and design, is "very compatible with ESD." He takes his classes to a nature preserve adjacent to the campus, which he considers an optimal site for projects. In one of his previous classes, students had to design a "fully sustainable" school for that particular location. As it is common when one introduces something new, Ethan explained, students are not aware of what it entails, and might even "have a little resistance towards it." However, once they start understanding the benefits of sustainability, they actually become "enthusiastic about it."

As an English for academic purposes professor whose students learn English as an additional language, Alice finds it easy to integrate ESD related topics into her face-to-face classes. She explained:

> English for academic purposes is wonderful because I can include readings on the rainforests, talking about the extinction of animals due to climate change, and showing them a book about the North Pole and the melting ice caps. So I can incorporate that as long as I'm covering the competencies.

When I asked if it was possible to infuse ESD into the field of psychology, Chris replied with a resonant "Well, of course!" He went on to say that psychology was "the most important one" because it dealt with topics like "self perception of interconnection" and interpersonal relationships. Sometimes, for example, it is hard to balance personal

convictions with family harmony, Chris suggested. People may want to replace incandescent light bulbs with energy saving ones only to find that it means confronting family members with a different set of sensibilities. Relationships between humans are just one of many ecological systems one has to learn to be sensitive to, he explained. In short, his field offers numerous opportunities to integrate ESD, he concluded.

With regards to compatibility, Laura feels that her discipline, College Prep, is "very flexible," and that she can bring in any article or piece of literature that pertains to ESD and connect it to her curriculum. She does not consider her discipline to be unique. "I think that all of the disciplines could possibly make it relevant," she told me. By carefully phrasing it as a possibility, Laura is suggesting that it would take some creativity and will on the side of the professors; however, it can also be read as an indication that Laura thinks faculty in many disciplines have not included sustainability in their courses yet, but that they might in the future.

Natal, who has been infusing ESD into his media course for a while, shared the following insights. Editing film is "probably one of the most unsustainable careers," he explained, because it depends on computers and TV monitors, all of which consume a lot of electricity and create electronic garbage when they are replaced. On the other hand, the career involves communicating new ideas such as sustainability to the public; therefore, Natal feels that his field is "very relevant" and "very connected" to ESD. "It's not just knowing about it, but it's knowing about it and trying to transmit this information to other people so that it can be more popular," he elaborated. In other word, the emphasis lies in turning theory into action.

While the majority of participants reported having no difficulty with connecting their field to ESD, a few struggled, at least initially. At first, Yvonne said, she wondered how she was going to address sustainability in her law courses. Now, however, she feels "confident." "No matter what discipline you teach, you can weave it in." The metaphor of weaving suggests that Yvonne considers it a task that requires careful planning and strategic positioning of sustainability concepts within the texture of her course curriculum. When I asked her to give me some examples, her efforts addressed many of the ESD key characteristics. They clearly involved critical thinking and problem solving, were meant to incorporate a variety of methods, included elements that could be applicable to students' daily and professional life, and were locally relevant.

Thomas, the mathematics professor, voiced some concerns. Even though he feels that ESD is an important issue for college students, he believes that it requires careful planning since the curriculum is already dense. Like Yvonne, he used the verb "weave" when he described how ESD could be connected to his field:

> With my students, it would be an attempt to possibly weave it in a few more times in the class, make it a thoughtful, more measured component of the curriculum, and readdress a few of those [issues]. I know there's an on-campus recycling group, but I mean more than recycling.

With sufficient preparation, one can infuse ESD components in mathematics classes, he thinks.

Finally, Arianna also has some reservations. She thinks that in general ESD can be incorporated across the curriculum, but not necessarily in her science courses. She explained, "In the basic chemistry courses, you really need to focus on the content because it's a continuation. If you don't cover all the competencies in the first semester,

they're going to be hurting in the second semester." In the physical science courses, Arianna said, instructors have a little more "leeway." In these classes, she is able to bring in some of the general education outcomes. Still, infusing an outcome takes considerable preparation. Arianna elaborated:

> I mean, for us to do that on our own, we have to research that to come up with examples. It is easier for books to incorporate it, and I think books are starting to a little bit, but not too much.

Arianna expressed an interest in infusing ESD in her science classes, but her course load and the associated preparations have discouraged her so far. Overall, Arianna thinks it is fairly hard to integrate sustainability concepts into her classes mainly because of the density of the science curricula:

> That's what really frustrates me, and I think a lot of professors in this field feel the same way. We are so content-driven because of the material we have to cover. These are pre-math, pre-pharmacy, and pre-dentistry majors. These are all the people taking these basic courses, and it's so content-driven. We try to include other things, but I find that when I try to get too much away from it, I get really behind.

When I asked Arianna if other faculty members in her department were infusing sustainability concepts into their classes, she said that she thought nobody in her department was "doing anything." Addressing the tenth or any other of the new learning outcomes was also not discussed at department meetings, she said.

In summary, most participants see a natural connection between their discipline and ESD. For some, ESD is relevant to their field, but they feel that incorporating it requires careful planning to be effective. Two professors believe that the density of their curriculum interferes with their interest in infusing ESD into their classes.

Issues with Online Delivery

Sometimes it is not the perceived density of the curriculum but rather the delivery of instruction that impedes professors' efforts of infusing ESD. As increasing numbers of courses are being delivered in a fully virtual format, the course design, especially the level of flexibility it allows instructors, becomes an issue. One participant talked about her experience with integrating ESD into an online economics course.

Before becoming an ESL professor, Alice earned a master's degree in economics and spent many years working in the financial service sector. These days, she stays connected to the field by teaching some economics courses online. Despite their contemporary delivery method, Alice complained, these courses are lacking a connection to current global concerns because they do not include an environmental component. Alice is very critical of the fact that the virtual course design does not allow faculty to easily alter content, essentially forcing them to follow predetermined modules created by a course developer. Once a course has been devised, she explained, faculty teaching the course just follow the existing layout. To remedy this shortcoming, she plans to "revamp" her course to include a larger environmental part. This is necessary because "economics and the environment are so connected in terms of economics and the science of resources."

Alice regrets that virtual classes offer considerable less flexibility; however, even in these more structured online courses, she said, she tries to find ways to include these topics. Despite Alice's upbeat attitude, I could not help thinking that this trend toward virtual education, in part to give students more options but also to free up classroom space and save the institution money, is an example of how neoliberal tendencies in the

global marketplace can infringe upon academic freedom. In a competitive economy, online courses can help colleges contain costs; however, there exists the risk of homogenized course content and inflexibility.

Sterling (2001) contends that the traditional education scheme focused on transmitting knowledge tends to be "rigid" while the transformative one, which he associates with sustainable education, remains "responsive and dynamic" (p. 38). If ESD is to become integrated in higher education, curriculum development must remain flexible enough to allow individual instructors room for creating learning experiences that respond to the key characteristics of ESD. Alice, for one, decided to include a face-to-face component in her virtual course by planning a field trip to a nearby nature center. Her students, she said, were amazed that a "virtual teacher would spend the afternoon with her students." This, of course, is only possible if students live locally, she cautioned. If you have students who live abroad, a field trip is not an option.

Infusing ESD and Inculcating Values

Even though virtual courses have gained popularity, most of the participants interviewed for this study still meet their students face to face. We talked about their preferred ways of infusing ESD and the issue of inculcating certain values. What the participants hope to impart to their students is the focus of this section.

Several personal values inform Natal's teaching. He would like to teach his students to "question authority, their reality, and the way things work." Moreover, he would like to encourage them not to "take anything at face value" and to realize that "there's always a hidden meaning." His goal is to promote critical thinking, which is aligned with the third key characteristic of ESD.

When it comes to ESD, Alice sees her principal role as an informant and connector to current events that deal with sustainability and the environment. She frequently assigns readings on climate change, deforestation, and other environmental topics. In addition, Alice teaches her students how to purchase and prepare food in a more sustainable manner by engaging them in discussions that involve the ethics of various forms of food production, distribution, and consumption.

Food is also topic Chris uses to infuse principles of sustainability into his psychology classes, and it is one that he thinks many students have trouble with. Human beings need to realize that they need other life forms, for example, trees and plankton, to sustain them, he argued. "This is one of the things you're always trying to teach students that they don't quite get," he said. "Some of them think food grows at Publix. They don't understand that there're consequences." He mentioned the connections between limited topsoil, chemicals and hormones in food. Recently, he said, there's been "a huge uptick in birth defects" affecting the genitals of young boys.

When I asked Charles if he had a preferred method to infuse principles of sustainability and Earth Ethics into his speech courses, he said that he would go back to basic communication skills. Professors should model this behavior for their students, he contended. "We need to practice listening skills. We need to practice dialogue skills where we repeat what the other person says and send it back, and they say, 'Yes, that's what I meant," he suggested. In short, his approach has less to do with incorporating ideas and facts from Green Studies workshops or other sources in his classes and more with developing in students the skills that will help them engage in discussions in which every participant's voice is valued.

ESD needs to be taught in an applied format to help students make the connection, Laura argued. To illustrate, she offered an example of what not to do. Years ago, she said, she had been enrolled in an environmental studies class at the college. Today, all she can remember is the professor's name. The content of the class has been completely lost to her. "I don't remember a single thing because it wasn't connected. There was no hands-on and no outside of the classroom experience," she reported. Now that she is teaching, Laura said, she regularly organizes field trips and incorporates service learning in her College Prep classes. "In essence, you are learning from this live textbook that takes place outside the classroom," she explained. She hopes to teach her students a sense of compassion.

Leonard challenges his international relations and government students to take a stance on issues they believe in. In order to get his students actively involved in changing the environment, for instance, he asks them to raise the issue of recycling at their work places. In the past, this turned out to be a problematic experience for some students. Leonard recalled the following exchange: "Do you know how unpopular it makes me when I suggest to the manager that we should have two different places by which to put things we throw away?" a student who worked for a hamburger restaurant complained to Leonard. Leonard retorted by asking, "But doesn't it feel good?" and inquired if the student had been fired, which he had not. Leonard believes that these kinds of encounters empower students because they learn to become conversant in addressing environmental issues.

With reference to inculcating an awareness of sustainability in his students, Leonard sees his role as "somewhere between annoying and inspirational." One of his

favorite teaching strategies is to "annoy" students by pointing out cases where they have failed to take the environment into consideration. When students ask him why he brings up the natural or social environment when they discuss a topic such as government, he uses sarcasm to illuminate the connection. He likes to pose provocative questions such as "Let's see, social environment, natural environment, human existence, air… I don't know. What do you think? Does anyone have an opinion?"

Furthermore, Leonard assigns research projects and encourages his students to pursue topics that pertain to the environment. He usually gets 3 to 7 students out of a class of 35 who focus on environmental issues in state and local government, he said. Instead of multiple-choice assessments, students in Leonard's classes have to research problems and come up with possible solutions. They then have to brief their classmates on their findings. With regard to the key characteristics of ESD, Leonard's classes directly touch on almost all of them. He promotes critical thinking and problem solving, uses a multi-method approach, invites students to participate in the decisions on how they are to learn, creates learning experiences that students can integrate into their personal and professional lives, and makes the topic of sustainability relevant locally.

To infuse ESD into her curriculum, Yvonne has checked out videos from the EEI and incorporated them in her law classes. For instance, she showed the documentary *The Story of Stuff*, which exposes unsustainable patterns of today's consumer society. Many students, she reported, were taken by the film's message, and many said they would change their behavior as a result of watching the film. Furthermore, she facilitated a panel discussion in which community leaders and students addressed the question "Why are we 'stewards' and not 'owners' of our resources?" She has also organized immersions, for

example, to a local organic farm for her students. After the trip, students had to reflect on their experiences, which Yvonne believes is essential. She shared an assignment with me that included questions such as "What is your assessment of this approach to sustainable farming?" and "How will you take this experience and apply it to your future academic, personal and professional life?" Several students, she said, started a little garden project after visiting the organic farm. In her opinion, teaching ESD needs to be action oriented.

Thomas seemed very concerned about presenting sustainability in a politically neutral way. "I would put it out there and try to do it in such a manner where I was as apolitical as possible, but more focused on just being intelligent and good stewards of the Earth," he explained. Afraid that his efforts might backfire if he is not careful, Thomas employs humor as well. He explained, "I try to keep them laughing, and I mix it up with as much as I can. I try and keep it apolitical, but I also feel that when it comes to Earth-sensitive issues, that it's not political." When I asked whether he had a teaching practice to infuse ESD related topics, he elaborated as follows:

> Again, depending on the situation, I try and tamper it with feedback on my own. I mean I'm always panning the audience. I want to try and get as much eye contact as I can. So when I sense that I'm perhaps straying longer than I should, then I'll foretell, but if it's a carefully crafted topic that's woven into the presentation of the curriculum and moving forward with the syllabus, then, clearly, I have no qualms about carrying it to its end. And so in that sense, it depends on how it's being inserted into the class.

Although Thomas spoke enthusiastically about the issue of ESD, I sensed his uneasiness when it came to addressing the issue in his math courses.

The faculty members' responses show that many try to foster critical thinking skills and an awareness of environmental ethics in their students. To the participants, it is

important that their students recognize and question societal norms and that they make connections between their own lives and the lives of others within and across generations. Many participants believe that one's values need to be discussed openly in the classroom. Moreover, they would like their students to act more compassionately toward other human beings; as a result, many professors encourage their students to show their values by becoming actively involved in their communities.

ESD - Responsibility or Indoctrination?

A facet that is closely linked to the issue of sharing values in the classroom is the question of whether ESD is a responsibility, or whether it can be perceived as indoctrination. In the sustainability literature, several researchers have discussed this dilemma. For instance, according to Qablan, Al-Ruz, Khasawneh, and Al-Omari (2009), who studied the attitudes of environmental science faculty toward ESD at Jordanian universities, professors tended to employ teaching practices that bordered on what the authors perceived as indoctrination even though the instructors proclaimed being opposed to such approaches. Based on their findings, the researchers recommend that professional development workshops deal with this divergence by focusing on "anti-indoctrinating pedagogical practices" (p. 412).

The UN DESD framework addresses this issue in the second key characteristic, which states that ESD pursues the following goal: "Values-driven: it is critical that the assumed norms – the shared values and principles underpinning sustainable development – are made explicit so that that can be examined, debated, tested and applied" (p. 17). In the introduction to the ESD Toolkit, McKeown (2002) writes that the "for" in education for sustainable development specifies that it has a purpose, and that all forms of

education aim at particular outcomes. If they did not, she claims, they would not receive any support from society. "Of course, a few will abuse or distort ESD and turn it into indoctrination," McKeown contends. However, she believes this would negate the "nature of ESD," which is to help people attain the necessary skills to solve the environmental, economic, and social problems the world is facing.

Finally, in a document prepared for participation in the UN DESD, the Southern African Development Community asks, "The big question for educators is how does one educate about values, choices, and politics in ways that don't narrow educational options or simply indoctrinate?" (SADC, 2005, p. 1). The group believes that education ought to go beyond transmitting knowledge and initiating students into a particular culture; instead, education should lead to critical reflection. For educators inspiring students to critically examine the values associated with ESD and engaging them in the necessary discussion without being perceived as an indoctrinator means walking a fine line.

The participants have rather different viewpoints when it comes to this concern. Some feel that all education is driven by values. For example, when I questioned Dan about whether ESD was a form of indoctrination, he replied:

> All education is indoctrination… All education is value laden and functions to enculturate the student to the values of the larger society or in some cases to a small sect within it. The smallest example might be home schooling, which usually is a rejection of the indoctrination of the other schools.

When I asked if he had ever been accused of indoctrinating, he responded with the following:

> I have been accused of most everything teachers get accused of, and in some cases I was guilty as charged. If I am not preaching, how am I teaching? If I don't live what I believe, who am I? If I know that we are killing ourselves and the planet, and I do nothing to inform others, what kind of teacher am I?

Yvonne also feels that not being able to teach students the concepts of sustainability is of greater danger than being accused of indoctrination. Her focus is on preparing students for changing paradigms in the job market. "If we don't tell them, they might miss the boat on green jobs," she argued. Similarly, Ethan believes that teaching students about sustainability is important in his field. "In terms of architecture and design, it makes sense to work with nature," he stated. He does not see his teaching as a form of indoctrination. "When you politicize it," he contended, "it becomes indoctrination, but not the way I do it." Alice said she had the impression that students regarded professors' interest in sustainability as "an outreach of hippie teachers." She is convinced that her students think she is "crazy," but she does not believe they would charge her with indoctrination.

For some participants it is very important to clarify one's bias. Annabelle insists that showing one's values is necessary in order to project integrity even if this is regarded as politically incorrect, and Chris also feels it is best to talk about one's bias at the beginning of the semester. Similarly, Laura explained:

> I make it very clear that this is my opinion and my passion, and I say, "You can have a different view to this, but I just want to show you or give you the opportunity of looking at it at a different way." I never feel like I am pushing an agenda on anyone.

Ellen also thinks that students need to be exposed to these issues carefully. She suggested that professors make a disclaimer along the lines of, "We're going to be discussing some

things where everybody's going to have a different view on it, and everybody's view is valuable." It was important that there existed sufficient rapport between students and the instructor so that everyone could share their opinions without fear of retribution. Some people blame the messenger, Ellen said, adding that she did not think it could be prevented.

Two participants feel that faculty can avoid the label of indoctrination by limiting the time they devote to ESD related issues. To Arianna, not "overdoing" it is a way to avoid the label; however, since she finds it hard to infuse sustainability into her science courses and rarely brings the issue up in class, she does not need to worry about carrying it too far. Thomas is also opposed to focusing excessively on sustainability, but for a different reason. He thinks that one should not belabor any topic to the point where it becomes "the same old song" that students do not want to hear any more. He is not so much concerned with being seen as indoctrinating as turning students off by focusing too much on sustainability. He said, "I don't want any of my students ever thinking that any of these extraordinarily important topics are just the same old tune."

Others think that the key to avoiding perceived indoctrination lies in presenting different viewpoints and allowing students to come to their own conclusions. Natal and Nadine, for example, both talked about exposing students to different opinions in a manner that was not perceived as "having an agenda." When I raised the issue of perceived indoctrination, Nadine said that it was imperative to supply students with opposite arguments for ongoing debates. "Is there global warming? Isn't there global warming? There's literature on both sides, and it's not a matter of what you believe. It's a matter of what they're going to come to believe," she argued.

Furthermore, Leonard also endorsed the approach of presenting multiple viewpoints to students. When I asked Leonard how he dealt with this balancing act between infusing ESD and inspiring students without being perceived as indoctrinating, he replied:

> It's interesting. I even encourage people to bring folks in from a totally different perspective – extra credit – because I don't think anything sharpens your knowledge of a topic more. It's like a knife on a wet stone. I get really dramatic with someone who holds a very different perspective, maybe a different basis of facts but maybe just a different philosophy. If you read Genesis, and a man's supposed to go out and dominate the earth, well, then everything's fair play. And if you're raised an Indian, it talks about the seventh generation…But to respect the fact that there can be legitimate and totally conflicting viewpoints is really important…And so I don't offer any agenda.

Finally, Charles is "very concerned" that when discussions start to favor a particular political agenda without thoroughly examining an issue, it can lead to indoctrination "in the guise of education." He explained:

> So I think one of the things that has to be done is to first of all, create a safe environment in the class or in the school for really looking at issues. So if you're going to be talking about nuclear energy and the value of nuclear energy, if you start to see that everyone is going to one side based upon prior political agenda, and they're really not examining the issues, then I would be concerned that we are carrying in the guise of education – really a kind of indoctrination – and I'm very concerned about that.

Instead of "imposing dilemmas" that he has not even worked out himself on students, Charles prefers teaching them the necessary skills to deal with such moral predicaments

To sum up, the participants agree that there is value to integrating ESD into the curriculum to the extent possible within their constraints. In order to avoid the critique of perceived indoctrination when teaching about "values, choices, and politics" (SADC, 2005, p. 1), the participants have a range of methodological preferences. Some feel that

all education espouses certain sets of values, and that one should not avoid confrontation. Some professors also prefer to state their biases upfront. Others think it is important to carefully gauge how far one can go without setting off alarms or causing students to become bored with the issue. Some believe in presenting diverging viewpoints on sustainability related issues. One participant emphasized teaching students the skills to critically examine issues.

Being a Role Model and Avoiding Mixed Messages

It is often said that actions speak louder than words. Many participants indicated that sustainability has to become a part of one's own personal life if one hopes to inspire and motivate students. Ethan, for instance, said he was certain that when it came to ESD, faculty acted as mentors and set and example. "If you have a professor that talks about it and lives by it, students will pay more attention to it," he argued. Even though Ethan feels that the word "sustainability" is overused and misunderstood, he seems passionate about sustainability. Many times when he discussed infusing ESD into his classes, he added commentaries such as "I like doing that" or "I like assigning it." It is very likely that his positive attitude toward sustainability is catching on with students as well.

Annabelle, who teaches courses similar to Ethan, also believes that professors are important role models when it comes to ESD. She thinks that talking about her values at the beginning of the semester is vital to promoting sustainability. "I have to show my values," she said; "otherwise, I don't think they are going to believe me." We talked about cultural differences between her home country in South America and the United States with respect to political correctness and objectivity. Annabelle said that she knew that in the United States her biased stance was "very controversial" but added that she

had learned to be herself and that she considers it vital that professors state their views. It is up to students to agree or disagree.

If you can be yourself as a professor, Annabelle reasons, students will approach you after class and ask if you do something for sustainability personally, and if so, they want to find out what it is that you do. “They like to know that you do something because you’re a role model,” she said. It felt great to have students come up to her after a presentation on recycling and say, “‘Professor, after your presentation, I started recycling at home,” she reported. Some people even try to convince their families, and if they are successful, they proudly tell Annabelle about it in class. These experiences have convinced Annabelle that showing her values right from the beginning of the semester is the right thing to do. “It puts them in the position to incorporate that,” she explained.

Like Annabelle, Alice sees herself as a role model for her students. She used to initially separate her private life from her academic life, but as time went on, she began to reveal more of her personal values. “If I’m promoting for them to live in a certain way, they need to know more about me and how I live my life,” she explained. For example, she told her students that she saves money and resources by not buying canned garbanzo beans, which contain preservatives and require more energy to be processed and transported. Instead, she soaks dried beans overnight. Her students were surprised because they associated this practice with a time when they were “poor” in their home country. Now they were learning that their professor, who probably made more money than they did, soaked garbanzo beans overnight because it was more sustainable and also tasted better. Alice considers it important to share these personal values with her students.

"I think it makes me a more interesting person. I have relationships with students that go on for years," she explained.

The nature of the teacher-student relationship was also a point in my interview with Nadine, the education professor. She explained:

> We produce the educators of the future. We have to model for them so that they can model for their students. Education to me is a unique discipline. It's one thing to educate sociology students and science students, and they go out and teach content. We teach people to model all kinds of socially acceptable behaviors besides content.

In order to model these behaviors, Nadine explained, it is important to develop a certain type of relationship with students. She clarified, "We have to become people to them because they have to become people to their students, or else the sense of community does not develop, and that sense of community in the classroom is integral for teaching sustainability." Nadine's proposition that teachers "become people" with emotions and personal values as opposed to remaining detached, value-neutral instructors is very interesting because she suggests that teachers and professors must reveal a human side to their students in order to create an atmosphere conducive to learning the values associated with ESD. Nadine's statement shows that she aligns herself more with the transformative vision of teaching and learning that understands "Teachers as reflective practitioners and change agents" as opposed to dispassionate "technicians" (Sterling, 2001, p. 59). Nadine thought that ESD worked best when faculty had a positive attitude toward ESD and felt aligned with its values. "I think to a certain extent you're going to have to affectively believe in sustainability in order to bring it across to students," she stated.

Raising people's awareness of environmental dilemmas, broadening their perspectives, and challenging them to consider alternative views are things Chris is trying to achieve in his psychology classroom. According to Sipos, Battisti, and Grimm (2008), this kind of "perspective transformation" (p. 71) that enables people to think critically about their existing ways of looking at the world is essential to ESD. To be able to do this, Chris feels it is necessary to begin with oneself. "I think you infuse it into your curriculum by infusing it into your own life," he said when I asked him about incorporating ideas presented at Green Studies workshops into one's classes. Like Alice and Annabelle, Chris is convinced that people have to begin with themselves to inspire changes in the world.

How to inspire change in the local community was something Leonard spoke about. Although he did not refer to himself as a role model directly, he implied that his personal actions have an impact on his students and other people, for example, his neighbors. He went on to tell me of a recent effort to improve the water quality of the lake near his house:

> It is important to understand the chemistry, biology, and the implications of your bad habits if you live on a lake like I do. You need to understand why you should not be allowing yourself to use a quick fix for getting rid of ugly plants because chemicals are going to poison what's in the lake. So I constantly try it [the organic approach] out myself and then try to convince the community.

Leonard would like his neighbors to consider organic pest control so that the toxic runoff does not contaminate the local lake; however, he thinks this will only work if can control his own weeds with less harmful products.

Similarly, Charles feels that he has to practice what he preaches. If he tells students that they can lead their own lives, he needs to practice that for himself, he explained. When it comes to ESD, Charles said, professors have to become "more holistic educators." He elaborated:

> We have to see with a larger vision. We have to kind of look ahead, and we have to retool ourselves too for knowing how to discuss sustainability issues and water issues and energy issues and food issues and things like that. I think we should be trained, and ultimately – this is a kind of the revolutionary side – I think that students need to be encouraged to expect more from their teachers, demand more from their teachers in an educational way to really expect that faculty are… it's not like you're just learning a set discipline and the faculty's job is only to teach that, but the faculty really are representatives of the whole college…

In this statement, Charles raises a point that is aligned with the fourth key characteristic of ESD, which suggests that "Teaching that is simply geared to passing on knowledge should be recast into an approach in which teachers and learners work together to acquire knowledge and play a role in shaping the environment of their educational institutions"(Framework, p. 17). Charles said that he did not really have a teaching technique per se, but he offered me two words that capture his approach: "not knowing." By admitting that he does not have all the answers and is, in fact, "working with ignorance," he said, he is usually able to establish "a sense of equality between teachers and students."

Charles' attitude that teachers may not have all the answers, or as Sterling puts it, "Everyone may be an expert" (2001, p. 38), is aligned with the type of transformative education that scholars like Sterling believe is necessary to promote more Earth-friendly thinking. Charles feels strongly that ESD has to be infused across the curriculum to be meaningful. "It's not really what teachers do in their classrooms. It's really how it's

reinforced," he said. For that to happen, he argued, faculty members need to infuse sustainability in their own lives and in conversations with their colleagues.

Laura is another participant who feels that educators "should be role models for living sustainability." She suggested that they could share ideas about how they live, what kind of car they drive, or in what type of housing they reside. Even if professors have made only modest changes toward sustainable living, they may still serve an example to others.

Yvonne, for instance, has switched to a permanent water bottle and CFL energy saver bulbs and is eating more organic food. When the EEI started offering shares of organic fruits and vegetables through their CROPS program (Community Rooted Organic Produce Services), Yvonne signed on. On being a role model, Yvonne commented as follows, "As you become more aware, you change – gradually."

Although Arianna does not think she has many opportunities to discuss sustainability in her classes, she still feels that those professors who chose to integrate the topic in their classes have to be role models for their students. "I think it is important," she said; "otherwise, you're just talking. If you're not doing anything, they're not going to say, "What am I going to do?" In short, to inspire students, the professor has to set an example.

But what happens when this is not the case? Thomas and Dan shared their thoughts on sending mixed messages. At first, Thomas said that it would help if faculty modeled sustainable behavior but that he did not think it was required. Later, however, he added that a "certain amount of personal commitment" was "absolutely a necessity" because the topic had an emotional aspect:

> I think it would be a little ugly, dark secret if you were hypocritical about it (ESD). I think it's always much more believable to walk the walk. I mean, essentially, if you're going to do none of these, it's almost like a dog smells fear. Your students smell a lie. They smell a rat.

Thomas repeatedly used the verb "smell" to expound upon the notion that students process information on different levels. His choice of words is probably not an accident. According to Sarafoleanu, Georgescu, and Peredercu (2009), the olfactory sense evolved during the earliest stages of human development. A keen sense of smell allowed our ancestors to "identify food, potential mating partners, dangers, and enemies" (p. 196). Although the number of genes responsible for olfactory receptors is far smaller in humans than in other mammals, humans still have a highly developed sense of smell, the authors contend. Moreover, the sense of smell plays a vital part in "adding emotional attributes to certain events and objects" (p. 197). Even though students probably do not literally smell insincerity, they do so metaphorically.

However, there are also times when the smell is very real. Let us recall what Thomas first remembered about the Green Studies immersion to the waste-to-energy facility. He remembered being overpowered by the smell; likewise, Natal said that he was surprised that nobody commented on the odor even though it suffused the air of the conference room. In this case, the smell was a fact and functioned as a reminder that in spite of the tour guide's promotion of the plant's modern approach to waste disposal, the place was still a dump that smelled like a dump. The tour guide's articulate lecture paled in comparison to the stench, and the two professors, perhaps alerted by the bad smell, became very perceptive to inconsistencies in his message, for example, when he encouraged the group to drink water from plastic bottles and thereby create more waste,

or when he played down the toxicity of the fly ash collected for storage in the landfill. In short, people can be very sensitive to such duplicity.

Dan, for example, had picked up mixed messages when he attended a sustainability conference at a university in Florida. In Dan's own words, the meetings took place in a "super cold room, double high ceilings, all kinds of stuff that was sending a message contrary to the intent of the conference." This hidden curriculum should not be underestimated and should probably be included in any discussion on ESD in higher education.

Clearly, the majority of participants in this study felt that the personal values a professor projected to his or her students enhanced or diminished their credibility when it came to ESD. To Natal, this scrutiny was an undeniable fact:

> I think it's also how the student perceives the instructor because I think that there are so many things that are connected. We're students. Picture this situation. We see an instructor who comes into the classroom. She's going to teach you the first day of class, and here she comes with a McDonald's bag and a thing of Coke. You're going to make a judgment. You're going to go, "Oh, okay, this person is going to teach me about sustainability?"

Ellen shared Natal's sentiment, saying that students were "really good at noticing, 'Hey, you're saying this, but you're doing that.'" If you want to teach people to recycle, you have to recycle yourself, she added. However, she cautioned, it was problematic if the college did not offer opportunities for recycling, as had been the case at the college for a while. Fortunately, the college has shifted recently. Ellen elaborated:

> They're looking at how they consume. I mean, here's the largest college in the country. Can you imagine how much paper, how much water, how much food, and how much of everything gets utilized? If they're more aware of what they're doing, that's great. And it does have an effect on everything and everyone. It's a model!

In other words, Ellen sees the institution as the ultimate role model, not only for the local community, which many participants agree it is, but also at a national level. She thinks that students need to have professors as their role models of sustainability, and both need the institution to provide an environment in which more sustainable lifestyles can actually be practices. Finally, she said, influential schools such as MDC ought to lead the way by establishing exemplary policies that other institutions can then adopt. The idea that an instructor who infuses sustainability concepts needs to "walk the walk" has several implications for ESD, which will be laid out in the last chapter.

Without exceptions, this small sample of faculty interviewed for this study expressed a favorable opinion about the Green Studies workshops they attended. All said that they would like to attend more workshops in the future. Some suggested that the EEI adjust the workshop offerings to accommodate faculty members' busy schedules. The ascent to the top of the mountain is not easy, one professor claimed, and when I asked who at the college was leading the way, the participant singled out the director of the EEI. "She's the torchbearer. She supports us," he said.

"We're in the Belly of the Beast":
Dealing with Campus Culture

Miami Dade College is located in one of the most multicultural areas of the United States and has a notably diverse student population with a distinctly Hispanic influence. According to the college's Institutional Research Web site, "178 countries and 86 languages are represented in the enrollment" (The students of Miami Dade College, 2009). Similarly, the institution's employees also reflect the population of Miami-Dade County. As of 2008, the college had 2,505 full-time employees, of whom 75% were

ethnic minorities. This exceptional situation inspires many remarkable cultural events and activities on all eight campuses, but it also gives rise to certain conflicts. Some of the conflicts can be explained by cultural differences; others may be more linked to socio-economic and educational factors. Since the county has a large immigrant population, cultural background, socio-economic status, and academic preparation are often closely related. In the conversations I had with professors about ESD at the community college, the majority talked about this perceived tension, a clash of "cultures" on a variety of levels.

Some faculty reported that the people they worked with on a daily basis did not share their values. For example, Alice said: "Whether they're my colleagues or my students, their whole world view is different." She explained that she had talked to her students about two trips she had recently taken to the Costa Rican rainforest and to Genesis Farm, an environmental and spiritual retreat in New Jersey. Her students, she recalled, had been completely astounded. They asked her why she would put herself into such primitive conditions if she could afford to live comfortably and with air conditioning. "They think I'm crazy," Alice said smiling. Part of it might be "generational," she added. After all, even her children's friends, all in their 20s, think that she is a "kooky mother" because she prefers those types of vacations.

More often, however, Alice feels that age is not the factor. To illustrate, she talked about showing her students parts of the documentary *Supersize Me,* which critically examines the fast food industry. After the film, she was expecting students to express negative opinions about fast food. Instead, Alice said, her students responded as follows: "This is the best part of America. I don't have to cook for my family. It's cheap. My kids

are happy. They play at the playground." Their reactions surprised Alice, but she knows that many underlying causes contribute to her students' views. When I asked her about her students, she explained empathetically:

> The whole immigrant experience is such a challenge. I mean, so many people who cannot make ends meet. They are on the program for women and families with children. They're on food stamps. Their husbands leave them. You know they have children without fathers. So it's the whole thing of getting through life. People say the whole environmental movement is something of a more affluent society. When people are very poor, many times they may live closer to the earth because they don't know about the other options. When people come here from more wholesome environments or with a more wholesome relationship to the earth, somehow they come to Miami, and littering or what food they eat, that's all forgotten in terms of survival.

Other participants expressed similar viewpoints. Ethan, for instance, told me that he was shocked to find the college parking lot littered with garbage. He said, "I remember seeing that in countries I visited in Central and South America, with just garbage everywhere. I'm not saying it's their fault, but I think it's also a culture – maybe a cultural thing." Ethan contrasted this culture of careless littering with his own experience in college:

> I look back where I went to school as an undergraduate. Everybody there was educated and everybody there came from a high standard background. And most people were pretty aware of the environment…We always switched off lights. It's common. You switch them off when you leave a room.

He was quick to point out that this environmental awareness was not a personal virtue but rather a learned behavior inculcated in him and his classmates by parents and teachers:

> When I was in school, if we threw garbage on the floor and you were caught, then we had to go and be part of this collection team... so you kind of thought twice about it…I don't want to be prejudiced or anything like that, but if you come from a more privileged background, you're aware of certain things as you hear about it, you speak about it, your parents are

> educated, and whether or not you actually practice it, you're still aware of it. I think maybe it's a little more challenging in the community college because it's not part of the culture.

At Miami Dade College, one can feel "a lot of tension," Ethan added. This is due to the "different conflicting backgrounds" of the students. Many students, he said, do not care about themselves, so how should one expect them to care about the environment. Part of it is due to cultural differences, Ethan explained, and part of it has social and socio-economic roots. "[For] the students who don't come from, let's say, stable backgrounds, it's hard," he concluded.

Chris feels that many younger people today are better informed about political and environmental issues. However, he also said that his own students appear to be "less so because so many are immigrants and so many are just trying to get their feet on the ground economically." To Natal, this lack of awareness is not only emblematic of his students but of the whole region. Like Chris, he agrees that an awareness of sustainability is growing in American society; South Florida, on the other hand, seems to be lagging behind. Natal elaborated:

> I'd say we're in the belly of the beast because you go up north and, well, that might sound wrong, but you go to other places, and there's definitely a higher sense of, I guess, environmental literacy and a higher level of social consciousness in terms of the consequences of your actions. And so here, we are almost like what they were 30 years ago or so. That's why I've said we're in the belly of the beast because this is, like you say, the place of most resistance. This is the forefront of capitalism, you know, right here because we're into buying. We live in a very, very materialistic consumption-based society. I mean, South Florida is all about malls.

One reason Natal may have this impression is because rampant development of housing communities and shopping malls has dominated the local economy in the past decades. It is not that many Floridians are not trying to protect their environment. Many

activists are working to prevent further encroachment into the Everglades by defending the urban development boundary. However, the extensive development is more visible than the opposition.

In his book *The Swamp – The Everglades, Florida, and the Politics of Paradise*, Grunwald (2006) describes how the region's rapid development resulted in widespread environmental damage. "South Florida in the mid-1990," he writes, "was everything its founders had imagined and more – a winter playground, a retirement home, a sugar bowl, a melting pot" (p. 304). However, the builders completely disregarded the local ecosystem. They advanced deeper and deeper into the Everglades, which not only drained the water that many local animal species depended on but also added to enormous traffic congestion. "The regional economy was a kind of ecological Ponzi scheme, dominated by low-wage tourism and construction jobs that relied on the constant pursuit of more people and more development that put more stress on nature" (p. 305). Eventually, in 1995, the Governor's Commission for a Sustainable South Florida issued a report that cited that the current path was unsustainable, Grunwald notes.

According to Annabelle, a rather recent immigrant from South America, the pursuit of an unsustainable way of life is not limited to South Florida. When our conversation turned to sustainability and wasteful lifestyles, she said that most of the students at MDC who were from South America came to the United States "to be able to afford that waste that they did not have previously," with food and other things. However, she also pointed out that this behavior seems to be "allowed" in the United States in general. Annabelle thinks that many immigrants change the "ethical part that

they had before" and become more wasteful because that seems to be the norm in this country. She explained:

> If you are in the United States, it's different because you have a lot of waste, and this is part of the base of the society… I see a lot of waste. That was a shock when I got here because I remember that when I was a child, I had to eat everything that was on my plate because somebody else didn't have anything to eat. But here, there's a lot of waste. You go to restaurants and see people with the super size meals that no one can possibly eat, and then it goes to the trash… So the concept of waste becomes part of the lifestyle. If it is part of your lifestyle, there is no way that it can be sustainable.

Although Ethan, Natal, and Annabelle view the issue from different angles, they all think the confrontation of cultural values is palpable.

Natal feels that this "resistance" makes ESD more testing at MDC. In Vermont and Maine, where I told him I had recently visited, Natal said, it was more like "preaching to the choir," but in Miami he feels challenged in an "exciting" way. Here, he claimed, an educator like him can still realize, "Hey, I am making a difference."

Nadine also embraces the opportunity despite the challenges. She explained:

> We teach a different type of student than you will normally find in a four-year university or one that provides graduate work. These are resilient students. They have been through monetarily, financially, and culturally traumatic experiences, and again, many of them have lived life in another perspective and have decided to come back to school. This is a wonderful place to bring across these concepts of sustainability. You've already been through life doing this, and it was okay but not great? Here's another way to look at it.

The students, Nadine said, possess a basic understanding of sustainability. They know some of the facts they have been taught, and many claim to recycle at home; however, they do not examine their own lifestyles critically, nor do they engage politically. One year, right after a presidential election, Nadine asked her pre-service teachers if they had

voted. Only one of the 33 students in her class, all of them eligible, had raised a hand. She recalled:

> That was a real eye-opener, and that's why I think I started to move in the direction of asking: "What's happening around us? How does it become part of the educational process, both for you as my students and for your students when you get out?"

Nadine explained that she tries to raise her students' awareness by asking them to study their own behavior, a strategy Chris had mentioned as well when he talked about challenging his students to critically examine their thinking patterns and to explore alternative perspectives.

While Nadine experienced this divergence over voter participation issues, Thomas noticed it one day when he tried to help his students grasp an abstract algebra concept. Thinking that he would like to "tap into people's sense of experience to give them other examples," he wanted to formulate word problems featuring everyday items to make it easier for his students to understand. He asked, "How many of you guys own any tools?" Not one of the 40 students, he said, raised a hand. Two, it finally turned out, possessed a hammer. Thomas recalled that he was "baffled." It was shocking to him that these students would "have Nintendo's," but did not know how to repair things. He did not blame the students, though. Instead, Thomas proposed the following theory:

> I think it's the parents. I don't think it's them [the students]. I think, again, sort of that notion that I had to do this, and I am going to provide a situation where he [the son] can call a repairman, I guess. I don't know. I really don't know.

For a while, particularly during the Bush administration, Thomas said it was difficult to talk about any issues pertaining to sustainability without coming across as being anti-Bush. He described it as follows:

> [It] got to the point where if you tried to talk about saving the planet, it was equivalent to Bush is a moron. And particularly, since South Florida is a highly Latin, particularly Cuban area, there's an extremely large number even of the young guys. I think there was a reactionary scenario where essentially they went left, got slapped hard by Fidel, and they reeled right. And so they are Republicans. It's the only way to equate that Castro is a bad man, and so you can't be anything but hard right Republican. And that somehow meant you had to embrace the Cheney administration with open arms. You had to sort of pick your battles because there were a number of very Republican Republicans floating around in the class.

Outside of the classroom, Thomas also often senses this political tension when he speaks with some of his colleagues. He said:

> Green is now going universal. It's going bipartisan, but the fact is, it's almost split across party lines because if you're going to vote for sustainability, then you're going to hamper corporate profits, and to do that means you're voting against the Republican Party line, and that's almost universal.

Chris also spoke about this dissonance, saying that he found the atmosphere during the past 8 years extremely "divisive." In his psychology classes, he attempts to help his students practice relaxation techniques that help them "tap into their connection into a deeper source of satisfaction," instead of focusing on feeling deprived. He hopes that they will be able to "act a little bit more intelligently in the world" if they feel more secure and less afraid. When I asked how students reacted to this method, Chris told me that he sometimes gets accused of being "a bleeding heart liberal" or even "Satan." This struck me as fairly extreme, but Chris explained that some very devout students take the Bible literally and often ask him whether he does not believe that every word in the scriptures is true. When Chris tells them that he does not, he becomes "an object to be converted." Chris does not want to change their political or religious affiliation, but he would like his students to think more critically and to examine how society functions. "I

want them to understand the rules of how things work and the importance of breaking the rules when necessary," he clarified.

Ultimately, living in a region with people from many cultural backgrounds presents unique challenges but also opportunities for ESD. Laura put it like this, "When you bring different types of cultures in, everyone's going to have a different perspective of what the environment is." Different cultures not only have vastly different standards, they may, as previously discussed, not even be able to agree on what a seemingly simple word such as "forest" means (Gough, 2003). The success of ESD, it appears, depends on recognizing that these conflicts and diverging viewpoints exist and opening a dialogue that engages all stakeholders.

"I Know What You Did, and I think It's Good":
Establishing Connections and Nurturing Relationships

The concept of sustainability is based on the idea that everything on this planet is interconnected and interdependent. Ecosystems thrive when plants, wildlife, and humans live in a symbiotic relationship; they deteriorate when the relationship becomes unbalanced. Even seemingly minute imbalances can cause an ecosystem to fail. As deforestation in Haiti and burning oil wells in Kuwait have shown in the past, conditions such as poverty and war, which represent imbalances between humans, also contribute to severe environmental damage. Because human beings have such an enormous influence on the environment, sustainability depends on not only how people relate to the environment but also on how they relate to each other.

In my interviews with the professors, the issue of interpersonal relationships between faculty, students, administrators, family members, and other members of one's

community became a central part of the conversations. As the study was limited to professors who had attended at least one Green Studies workshop, many of the participants mentioned these workshops as places to connect with others who shared their interests. Alice explained why she was drawn to attend workshops offered by the Earth Ethics Institute:

> Well, I think what I have loved the best about Green Studies is meeting other faculty at Miami Dade College and some staff and administrators…It's also a way of connecting with like individuals…Well, quite frankly that's why I've been very interested in the Green Team and Green Studies because those events tend to attract faculty who, I would say, are more personally involved in living a sustainable life, who are more intellectual, who are more academic, who read, etc.

This excerpt shows that the possibility of meeting colleagues with similar interest in sustainability is a major enticement to Alice. The Green Studies workshops act like magnets that "attract faculty" who share a common interest. It is also important to note that Alice is interested in faculty who are "personally involved in living a sustainable life." In other words, she is looking for people who pursue sustainability not only at work but also in their everyday life, maybe by eating a planet-friendly diet, driving a fuel-efficient vehicle, or reading literature on alternative lifestyles. To put Alice's statement in a larger context, it is important to mention that in the final draft of the UN DESD Framework, the key characteristic "Applicability: the learning experiences offered are integrated in day to day personal and professional life" (p. 17) was added to the existing ones. The idea, as I understand it, is to realize that ESD cannot only be integrated into one's workplace, but that it should extend into one's personal life as well. Alice obviously also feels this way, which is why she specifies personal engagement with sustainability as a positive attribute.

Dan shared a similar sentiment when he said:

> When I go to workshops and conferences, I'm all of a sudden finding out: "Well, if I'm crazy, there are a number of us out here." And that's an important thing to know, and it's the way nature works. You have to network…I think this is true, more so even, with the issues of Earth and sustainability because there are seemingly fewer of us. And so, because there are seemingly fewer of us doing it, we need to have moments where we connect with each other and go: "I know what you did, and I think it's good."

He explained that networking with others gives him emotional support and an opportunity to share ideas, but he also mentioned another reason. The interchanges with other faculty help him grow. As an educator, he believes that learning is "a process, never a destination."

The possibility of learning from other faculty also draws Charles to attend more workshops. Recalling past sessions, Charles said he appreciated the experience "for the sense of nurturing and synergy that happened with the faculty." Instead of being isolated in their classrooms, Charles noted, faculty were now discussing why they were trying to infuse what they learned in the Green Studies courses and how they could make it relevant to the students so that it would not "detract" from the course content. As a founding member of the EEI Council, Charles specifically remembered the early meetings, during which the group devised the themes and sequences of workshop modules that would eventually become Green Studies. He recalled, "There was all kinds of sharing… and this sense that we were creating this interior structure within the college." These days, he no longer signs up for workshops to learn from other faculty; he is more interested in staying connected to the people he cares about. What he retains most

and considers valuable is "a sense of discourse." Therefore, Charles feels it is extremely important that "teachers have a chance to discuss together what they are doing."

To some participants, the workshops present an opportunity to meet like-minded colleagues and to exchange ideas. These professors value the experience of connecting with the whole group. Others, like Natal, feel that they might not have forged many relationships, but that the few they have made "are strong, and are going to be lasting connections," which he finds very positive. According to Natal, connecting with others is like the "water cooler you go to and have water, and you talk to people and you're like: 'Okay, I feel good now. I'm going to go back….'" We laughed about the fact that the college currently had no real water coolers for people to gather around since they had been removed during the last round of budget cuts. Sometimes, it seems, meaningful conversations and the feeling of being connected with fellow humans can replenish us just the same.

These nurturing connections, many participants feel, are not only necessary for emotional support but also for professional growth. It is important to know what is going on in other departments and at other campuses, they said. For instance, when I asked Nadine about interpersonal relationships at the college, she was quick to point out that she considers them vital:

> This is my paradigm as an educator. I have always worked across levels, and as soon as I got here, I wanted to be involved in committees that worked across campus, across disciplines, only to learn what others do. What is the priority in your discipline? Where are you coming from? What is your school of thought? And being that I am an educator – an educator of education – I have to work across disciplines.

Ethan also expressed that collaboration with colleagues was essential:

> We share projects. We share ideas, and I invite people to come and view my students' projects. We do different projects, but there is always an emphasis on dealing with sustainability. One of my colleagues does community development projects, which also deals with sustainability. So it's not just about "green design," but also has to do with fostering a sense of community.

After the interview, Ethan showed me some of his students' projects, three-dimensional sculptures created entirely from discarded materials, which were on display in the library. He asked me whether I would be interested in serving on a panel to evaluate his students' next project. As it turned out, the scheduling proved to be difficult, but I told Ethan that I would be glad to work with him in the future.

The Green Studies workshops are only one venue to connect with others. At Laura's campus, faculty who are engaged with Service Learning projects form a "very tight group," and she considers it crucial "to network with faculty, take ideas, share ideas, and work together on a project." Two other professors specifically mentioned connections that extended beyond the college and the local community. Arianna reported that her department was getting involved in an environmental grant with the University of Puerto Rico. The project entails a faculty exchange, which she hopes will result in professors from Miami "working with the faculty members over there and trying to bring some of that research back here so that we can get students interested in doing research here." She seemed eager to engage her students in these international research projects.

International collaboration also plays an important role for Leonard. Our interview transcripts read like the itinerary of a United Nations ambassador: Ghana, Gambia, Japan, the Dominican Republic, etc. Leonard's relationships with

nongovernmental organizations, international agencies, and foreign universities frequently take him overseas, where he lectures, attends conferences, and serves as consultant. His excitement was evident when he spoke about his global agenda:

> I travel 50,000 to 70,000 miles a year, based on not how smart I am but on what people perceive someone from here can do in the Philippines, India, or South Africa. I don't discourage that because I love to do what I learn here elsewhere, and that's the other part of the excitement. I've actually traveled more here each year than when I worked at the UN.

To give me an example of the extent of his worldwide connections, Leonard pointed to a thick dissertation binder from India that he was supposed to read and give feedback on. He appeared happy to be involved at so many levels. He feels supported by the college administration to pursue and nurture these international relationships, and he described the atmosphere at the college as "very creative and encouraging."

How important it is to create just such an atmosphere in the classroom emerged as a topic when I talked to Annabelle. She strongly believes that the quality of relationships between students has an impact on how well they grasp complex issues like sustainability. She rationalized it as follows:

> I think if the students don't work as a group, it becomes much more difficult for you to introduce this concept of sustainability, which is very ethical. If you work as a group, you work as a family, and then as a family, you move on, and then you are more open to new ideas… You have to have a connection.

As an architect and designer, she frequently tells her students that one has to make many ethical decisions because the designs that one creates impact "a lot of people." Because there are so many consequences, she wants these future urban planners, architects, and designers to know that they have a "social responsibility." When social justice is not adequately considered in the planning, Annabelle argued, the result is a city like Brasilia,

the capital of Brazil. The architects who planned this city believed that society could be changed with architecture; however, when the project was completed, the people who had actually built the city could not afford to live in it. To help her students see these types of connections and to make them aware of the impact they may one day have on a community presents one of her main obligations as a professor.

According to Franz-Balsen and Heinrichs (2007) from the Institute for Environmental and Sustainability Communication at the University of Lüneburg, Germany, interpersonal relationships and discourse are fundamental when it comes to implementing sustainability in higher education institutions. When communication between faculty and other members of the academic community is thriving, knowledge gets transferred, collaboration between the various stakeholders strengthens, and sustainability is moved forward, they argue. What happens, though, when faculty find themselves in less favorable conditions?

When asked about collaboration and relationships with others, one faculty member, for instance, bluntly stated that "It's important, but it doesn't happen." He had apparently tried to talk to some colleagues about issues pertaining to sustainability and the environment and found that some were "sympathetic to the cause," but that another group acted "petrified of going there." When I asked for the reason, the participant explained that "every conversation they've ever had has gotten escalated and angry and turned into a spitting match, and, therefore, they've refused to go there." When I returned to the issue of relationships during the second interview, he reiterated that relationships were" very important" to him and indicated that he had some knowledge that could be useful to others: "I have enough information that I could possibly convert

souls," he said cautiously, but he also seemed to be genuinely frustrated about his inability to exchange ideas with more people at the college. "I should probably reach out a little bit more on campus," he finally said and concluded with yet another seed metaphor, "…so in that sense, going out there and sowing a few mustard seeds among the rocks is not a bad idea."

The imagery of rocks conjures up feelings of isolation and hardship, which is why the subtle beauty of Japanese rock gardens is often not readily appreciated. Rocks are cold, sharp, and unmoving, and we seek their company mainly when we want to be alone. A college campus, on the other hand, is supposed to be a dynamic place where people exchange ideas, make friends, and learn from each other. Corcoran and Wals (2004) contend that disagreement is a necessary building block on the road to sustainability and that many different viewpoints can inform and contribute to this dialogue. They argue that the role of higher education institutions is to provide an environment in which such discourse is possible. When an institution fails to create an atmosphere conducive to productive confrontation, people who could make valuable contributions to ESD may not feel safe enough to get involved and retreat. One can only hope that they carry small packets of mustard seeds with them.

As mentioned above, "communication in all forms" (Franz-Balsen & Heinrichs, 2007, p. 431) has been identified as a vital condition to fostering sustainability at a higher education institution. The authors point to studies by Sharp (2002) and Bartlett and Chase (2004) supporting the importance of creating opportunities for personal dialogue, especially "face-to-face communication" (Sharp cited in Franz- Balsen & Heinrichs, p. 432). In their sustainable university research project, Franz-Balsen and Heinrichs

investigated "sustainability communication" (p. 432) and found that the number of collaborative activities increased after opportunities for communication were enhanced through events such as lecture series, film screenings, and "round tables with stakeholders" (p. 436). They also found that the members of their college community fell into two categories, those with "sustainability affinity" and those with "sustainability distance" (p. 439). While members of the latter group mainly needed "basic information and motivation" (p. 439), members of the former group, were ready to become involved in collaborative activities. In other words, they were waiting for a chance to network with others and start collaborative projects as soon as the opportunity presented itself, for example, when they met other faculty with sustainability affinity at one of the above-mentioned events.

For this type of faculty, attending sustainability related events is so encouraging because they find it hard to connect with like-minded colleagues otherwise. Dan, for example, said that he had reached out to colleagues on many occasions, only to find that few were interested. He recalled:

> To my colleagues, when we were going to the Everglades, I used to always say, "We're going to the Everglades. If you want to come, come." I stopped doing that because nobody else was coming. So why take the time to do that? I did the same thing with films. I do it when I bring in guest speakers, and I find, for whatever reason, people don't come. Once or twice Fred showed up when I've done stuff on gender. But on the sustainability stuff, nobody's come, nobody.

This indifference may be attributed to some of the same obstacles that scholars have found tend to hamper sustainability initiatives in higher education: faculty's perceived lack of time, a sense of burn-out, inadequate compensation for participating in extra-curricular activities, etc. In my interview with Arianna, for example, she raised exactly

this issue, saying that experiencing the Everglades was really important but that "it becomes difficult for people to schedule that." It is not easy for faculty to travel to other campuses to attend workshops, Arianna said, and in the end, "it goes back to money." Full-time faculty members at MDC teach five courses per semester, and many select to teach overloads to earn extra money. Finding the time to attend lectures on sustainability or going on immersions may be problematic for those with full schedules.

Since the faculty I interviewed all had voluntarily participated in Green Studies and mostly showed an interest in and a positive attitude toward ESD, it can be assumed that the majority would fall into the group with sustainability affinity. Like their counterparts in Lüneburg, most of them are eager to associate with like-minded individuals to exchange ideas and to collaborate on sustainability projects. Charles, for example, feels that meeting and communicating with other faculty is essential to show students that the various subjects they study are not isolated. Teachers have to get together to talk about what they are doing, he said. Only then can he adapt his teaching to correspond to what is being taught in other classes. With some of the faculty, Charles added, he regularly discusses his curriculum. Students notice, he contended:

> If I have students, let's say in Chris' class in psychology, and they're taking my speech class, a lot of them say, "Wow, it's like you two come out of the same mold." They get the connection. We might be sharing a different discipline, but I think there're sets of shared values.

The concept of sustainability rests on the assumption that the planet is a finite system in which everything is connected within and across generations. It is a highly complex concept that potentially affects every aspect of our lives, which is why it is imperative that it be discussed and analyzed on multiple levels by all stakeholders.

Sustainability concerns not only a few scholars and politicians but everyone on Earth, now and in the future. Most of the faculty that I interviewed expressed that they value and nurture the interpersonal relationships that enable this dialogue to take place. Every one of them is either engaged in or looking forward to an opportunity to exchange ideas, inspire or become inspired, and embark on collaborative projects, and even though the circumstances are not always ideal, they all cherish their relationships and the mutual support they afford.

Summary

Whether they view ESD as a journey or an uphill battle, the participants believe that infusing ESD and putting theory into practice involves substantial effort and commitment from faculty. As portrayed in the first theme of this chapter, the participants regard the Green Studies workshops as an "excellent" opportunity to discover local ecosystems, learn about sustainable lifestyles, and study global efforts to improve the conditions of people and their environment. In addition to these formal courses, learning about ESD and appropriate teaching practices occurs in a variety of forms, from traditional media such as books and journals, to more modern forms, for example, blogs, and Webinars. Friends, family members, colleagues, and students provide pertinent information as well.

Several professors indicated that they experienced a time of despair when they first realized how far advanced the destruction of global ecosystems had come, and some shared that they had undergone a personal, often traumatic and at times spiritual, transformation before beginning to infuse their curricula with sustainability concepts. All participants feel that ESD is theoretically compatible with their subject area; however, at

least two professors have experienced difficulties when it comes to the practical aspects of infusing material from the Green Studies workshops into their classes. In both cases, the perceived density of the course load was cited as a contributing factor. Further, one professor criticized the fact that many virtual courses lack the necessary flexibility to allow instructors to incorporate ESD into their online courses. The majority of participants believe in integrating ESD and the associated values into their curriculum. They try to preclude accusations of indoctrination through a variety of didactic methods. Finally, they consider a professor's ability to act as a role model as beneficial, if not essential, to the pursuit of advancing an awareness of sustainability in college students.

As described in the second theme, many participants feel that the different cultural, ethnic, socio-economic, and educational backgrounds of the college community combined with the region's predilection for commercialism, urban sprawl, and consumption present considerable challenges for ESD at their institution. Some professors reported that their values concerning sustainability were often not mirrored at the institution or in the local community. This, they said, sometimes creates tension and frustration. In spite of this challenge, the professors believe that they have the responsibility to educate their students, colleagues, and others in the community about ESD. Some participants also identified the clash of cultures as a positive challenge because it encourages people to examine their biases, explore alternative perspectives, practice tolerance, and collaborate in spite of differences.

The final theme illustrated the importance of interpersonal relationships and communication. Many participants believe that regular interaction between all stakeholders at the college builds synergy and plays a significant role for the

advancement of ESD at their institution. Sustainability, they think, is based on interconnectedness; therefore, administrators, faculty, staff, and students need to have ample opportunities to meet each other and nurture their relationships. Many also believe that the exchanging of ideas and the planning of collaborative projects is more likely to happen when people can meet face to face. Furthermore, such interpersonal relationships can offer people the much needed mutual support during times of despair and fatigue, which many professors disclosed they had personally experienced.

CHAPTER VI

DISCUSSION AND RECOMMENDATIONS

How do faculty at community colleges make sense of education for sustainable development (ESD) and what are they doing to infuse sustainability into their curricula? The purpose of this case study was to learn more about the attitudes, beliefs, and practices of community college professors with regard to ESD. In this chapter, I discuss the findings of my study and draw conclusions. The chapter begins with a review of the research project. Then I answer the primary research question and the six subsidiary questions followed by a section on the study's limitations. Finally, I address the overall implications of this study and make recommendations for practice and policy as well as for future research.

Review of the Study

Higher education institutions face a challenge: How can they prepare their students for a world in which a rising population competes for resources on a planet threatened by climate change and degradation of natural systems? ESD is meant to address this global problem. A series of events led to the ESD movement. In 1987, the World Commission on Environment and Development assembled to discuss the consequences of uncontrolled growth, environmental destruction, and abject poverty. The group drafted the influential report *Our Common Future* (1987), which introduced the idea of sustainable development as a framework for fostering global economic development while also protecting the environment and promoting social justice. Many scholars are convinced that colleges and universities are poised not only to research and develop new technologies that will help humanity face daunting challenges ahead, but

also to initiate necessary changes in society. In 1990, a group of leaders in higher education gathered in Talloires, France, to produce the Talloires Declaration, an action plan for sustainable development for post-secondary institutions. The United Nations' declaration of the Decade of Education for Sustainable Development (2005-2014) put the issue on the agenda of colleges and universities.

In the literature, the issue of ESD in higher education is addressed from several angles. The role higher education plays for ESD is the focus of several scholars (Bowers, 2001; Calder & Clugston, 2003; Calhoun & Cortese, 2006; Cortese, 2003; Moomaw, 2003; Orr, 1996; O'Sullivan, 2002; Raitan, 2005; Rees, 2003; Rowe, 2005; Santone, 2004). Although these researchers emphasize different aspects, they agree that colleges and universities are vital for the advancement of ESD.

Other studies have looked at the implementation of institutions' sustainability action plans, for example, the effects on students' values (McMillan, Wright, & Beazley, 2004), the reactions of faculty and students regarding a mandatory environmental literacy requirement (Moody, Alkaff, Garrison, & Golley, 2005), the organizational factors contributing to engagement with sustainability (Shriberg, 2002), and the impediments to transforming into a sustainable institution (Moore, 2005a, 2005b). These studies highlight the efforts of participating schools; however, they also point to a multitude of obstacles institutions have to overcome as they strive to achieve the goals of ESD.

Yet other researchers have focused on the gradual diaspora of ESD across the curriculum, for example, to teacher education (Bristol, 2005; Ravindranath, 2007), computer science (Down, 2006), Caribbean literature (Down, 2006), psychology (Koger & Scott, 2007), business (Pesonen, 2003), and continuing education (Martin, Brannigan,

& Hall, 2005). It is evident that ESD is gradually moving across the curriculum, but this appears to be largely due to the efforts of individual instructors.

During the literature review, it became evident that the research on ESD in higher education has focused almost entirely on 4-year colleges and research universities. Community colleges, a significant segment of higher education, charged with educating 46% of all undergraduate students in the United States, have been overlooked. My study addresses this gap. It focused on 14 professors from different disciplines at Miami Dade College, Florida, a signatory to the Talloires Declaration in 2006. All professors had participated in at least one Green Studies professional development workshop offered by the college's Earth Ethics Institute (EEI). The Talloires Declaration and the seven key characteristics of ESD described in the UN DESD International Implementation Scheme (2006) provided the conceptual framework for this study.

Semi-structured interviews, written documents, and the researcher's journal entries served as data. Follow-up interview sessions provided the opportunity to investigate developing themes. After the interviews, the participants were contacted to verify facts or clarify inaudible utterances to avoid errors. The transcripts were coded and analyzed to detect themes. In addition, a peer reviewer offered feedback.

Over the course of the data analysis, five major themes and several minor themes emerged. The first theme "I Don't Think People Know What It Really Means" illustrated how faculty reacted to a variety of sustainability terminology and how they conceptualized ESD metaphorically. The second theme, "Planting the Seed" explored a recurring metaphor that the participants used to describe the holistic and long-term approach of integrating ESD across the curriculum. The third theme, Learning to "Climb

That High Mountain," pertained to moving from the theory of ESD to its practical application in the classroom. Eight minor themes illustrated various aspects of this challenging undertaking. The fourth theme, "We're In the Belly of the Beast," focused on faculty dealing with obstacles, in particular related to campus culture. Finally, the fifth theme, "I Know What You Did, and I think It's Good," centered on the importance faculty assign to interpersonal relationships and communication.

Discussion of Primary Research Question

The primary research question was this: With regard to ESD, what are the attitudes, beliefs, and practices of faculty members at a community college that is a signatory to the Talloires Declaration and has thus committed itself to the 10-point framework? In the interviews, it became clear that the professors view ESD as an important issue. Although their engagement with ESD differed, the professors expressed a positive attitude toward ESD related teaching and learning. A particularly encouraging finding was that the professors thought that the issue of sustainability was, at least in theory, relevant to their subjects. Most professors reported planning to incorporate ESD, and many said that they had been infusing sustainability into their coursework. Since the participants also suppose that ESD requires people to become lifelong learners, many engage in activities to gain knowledge about ESD and appropriate teaching practices.

Clearly, the participants' conceptualizations of ESD were influenced by personal and professional experiences. In some cases, the conceptualizations were emerging because the participants were not or barely familiar with the term ESD. The participants' attitudes were shaped by metaphors they used to make meaning of ESD. To many of the participants, overcoming an unsustainable trajectory seemed arduous. This was evidenced

by the metaphors they chose to define ESD: a long journey, a mountain ascent, a battle, and a fight against lack of awareness. Although many participants experience the work toward ESD as challenging, they believe that they can make a contribution to the college's overall effort. They favor an integrated approach in which each professor supplies a small but consequential part to move the college toward sustainability. Therefore, a recurring metaphor was also the planting of a seed.

The image of interconnection emerged as another important metaphor. The professors believe that ESD depends on recognizing systems and focusing on connections between things, events, and people. Many expressed a desire to establish and maintain interpersonal relationships to other community members to make these invisible connections visible. The exchanging of ideas and the planning of collaborative projects was seen as more likely to happen when people had the opportunity to meet face-to-face.

When it came to the practical application of ESD, the professors emphasized that ESD ought to result in visible actions in a person's life. This belief was supported by the participants' teaching practices. Many enhanced their own courses with "hands-on" projects, service learning assignments, and other experiential learning opportunities to move from theory to practice. In addition, their understanding of ESD was premised on viewing themselves as role models. Many professors were convinced that one had to begin by changing one's own life in order to teach ESD.

Discussion of Subsidiary Research Questions

Conceptualizations

The first subsidiary research question dealt with faculty members' conceptualizations of *sustainability* or *sustainable development*, and *environmental*

literacy with respect to education. A significant finding of the study was that education for sustainable development (ESD) had a different meaning to each professor. This confirms findings by Carew and Mitchell (2006), whose study of engineering professors also found considerable disparity regarding the concept of sustainability. Obviously, ESD is complex, so colleges and universities will need to clarify what they mean when they introduce ESD at their institutions. The participants viewed ESD as an extensive, dynamic, and global process led by international agencies and the United Nations. In contrast, they viewed education for sustainability (EFS) as a more limited, personal, and applied approach that centered on local or national efforts. Some participants had negative associations with the term ESD and preferred EFS, saying that ESD suggested economic growth and development despite the planet's finite set of resources. Others, however, preferred the term ESD because they interpreted the word *development* as an improvement in quality not in quantity or growth. They also thought that it was less static than the word *sustainability*. Finally, some professors did not see a difference between the two terms.

These findings indicate that participants conceptualize ESD based on their own experiences and not along the lines of an official definition. The differences suggest that no consensus exists and that the concept of ESD is still developing, a notion other researchers have argued (Corcoran & Wals, 2004; Kagawa, 2007). In addition, a tendency to emphasize the environmental aspect of ESD could be observed. Even though the participants thought that the environmental, economic, and social aspects all defined ESD, they mostly mentioned the environmental facet, which Pepper and Wildy (2008), who interviewed Australian secondary teachers regarding the concept of education for

sustainability, also observed. According to Fien and Tilbury (2002), education for sustainability ought to be distinguished from traditional environmental education because the former expands the latter by connecting "environmental quality, human equality, human rights and peace, and their underlying threats" (p. 9) to move beyond a narrow environmental focus. The findings of my study imply that the expansion of the term's meaning to include these addition aspects is still in progress.

While the participants' conceptualizations of ESD showed variation, their views of *environmental literacy* revolved around similar ideas. Many described it in generalities, as "an awareness of the environment," being "environmentally aware," or being "conscious of the environment." Notable was the fact that almost all participants verbalized that environmental literacy entailed recognizing the "impact of humans" on the planet. I suspect this was due to familiarity with the tenth MDC Learning Outcome, which features similar terminology. Finally, three professors pointed out that the EEI uses the term Earth Literacy, not environmental literacy, in its documents.

Clearly, most participants conceptualize environmental literacy not as abstract knowledge but as the realization that we live in an interconnected world in which actions matter. Environmental literacy, they suggest, is not knowledge for its own sake but a competence that can help people act more responsibly.

The Role of Higher Education Institutions

The second subsidiary question pertained to the role higher education institutions play in advancing "global sustainability," an expression taken from the Talloires Declaration. The declaration arose from the realization that colleges and universities can promote teaching and learning for a sustainable future. According to the participants,

these institutions play a critical role in advancing sustainability globally for several reasons.

For one, schools at the tertiary level are better funded than those at the primary and secondary levels, and this advantage allows colleges to showcase sustainability on their campuses and take steps that make visitors to the campus say, "Wow! This place works," as one professor put it. In short, colleges and universities, whether public or private, are endowed to finance sustainability projects, the participants believe.

In addition to investing in campus greening programs, some participants feel that the role of higher education lies in promoting sustainability through research and innovation. It would be in everyone's interest for universities to develop programs that investigate how to better manage a planet with finite resources. However, this can lead to conflicts of interests. Because "research is driven by grants," as a professor noted, the goals of a donor could be at odds with sustainability. For example, it may be difficult to understand how Pepsi's sponsorship of global education at Florida International University can be compatible with the university's signing of the President's Climate Commitment. After all, Pepsi is one of the world's largest purveyors of plastic, non-returnable PET bottles. Moreover, the corporation has been involved in environmental scandals; for example, in 2003, Pepsi was accused of pumping freshwater in already desiccated areas of India and of not properly filtering the contaminated water before bottling and selling it (Brady, 2007). Orr (2003) argues that outside funding may hamper environmental research projects. Further, Rees (2003) notes that research funding is distributed to sciences and engineering departments that can generate profits by patenting their innovations, whereas other disciplines may receive little support. Despite this, the

role of universities is to apply expertise that will enhance sustainability projects, the participants think.

Besides the research agenda, the participants cited the fact that colleges certify and license students as a role of higher education institutions. These institutions give "the stamp of approval," which has significant consequences. The professors' views are aligned with Orr's (2003) concern that universities are too preoccupied with preparing students for an unsustainable economy. In other words, the requirements for certification may be outdated and ought to reflect an institution's stance toward ESD.

The participants also believe that higher education has the role of preparing students to lead. Therefore, graduates "need to leave here with a mission," one participant posited. Calhoun and Cortese (2006) contend that higher education institutions graduate those who will become influential in society. If these new engineers, architects, and scientists are exposed to sustainability issues at their alma maters, they can bring knowledge into their workplaces, the authors argue. Some faculty mentioned that teachers receive their certification in colleges and universities. Higher education, a professor explained, has the role of "changing educators" and other future leaders.

Lastly, participants believe that institutions can enhance sustainability through a focus on critical thinking skills, global awareness, and flexibility. "I think we want to create skillful thinkers who can adapt to any situation," one professor said. Being able to listen to environmental viewpoints, address social issues, and evaluate one's actions are skills the professors think students need. As one person said, the impetus is to understand that everything on the planet is "interconnected." The participants believe that the role of higher institution lies in helping students see the big picture.

The Function of the Community College

The third subsidiary question asked how faculty members understand the function of their community college with respect to promoting ESD in academia and in the local community. The participants identified two functions of their community college. Many regard their college as a community model of ESD. They believe that the institution has a special "responsibility" or "obligation" to serve and educate residents about sustainability. The professors are also convinced that the extent to which sustainability gets addressed as a topic in the curriculum and is demonstrated on the campuses makes a difference because there is a ripple effect when students go back into local neighborhoods. One participant explained, "When you're educating a woman with children and parents, you're really touching more people." In other words, the college has the potential to affect how people think about the environment and sustainable lifestyles precisely because it is a part of the community. When the community college movement was created, another professor pointed out, it was designed " to bring higher education to local people." Now the community college has to model and endorse sustainability, the participants think.

The other important function of the community college is its emphasis on teaching. Many professors pointed out that they have more contact with their students than faculty in research universities, and that these extra hours can foster skills and attitudes associated with ESD. Such contact with students paired with a focus on teaching makes the community college "a wonderful place to bring across these concepts of sustainability," one professor explained. Other respondents expressed similar idealism; in fact, several suggested that the instruction at their college was superior to research-based

institutions. Some mentioned their own experiences in graduate school, where they complained that too many professors lacked pedagogical skills, “didn’t make good use of teaching time,” and had a tendency to be “abstract and disconnected.”

Other professors remarked that they resented drawing lines between institutions, and that they did not think of their college as “college light”; moreover, these faculty members also said that they felt Miami Dade College was “more responsive to the community” than other higher education institutions in the area. In summary, the participants believe that their college plays a significant role in promoting ESD in academia and in the local community.

The Role of Faculty Members

The fourth subsidiary question addressed the role of faculty members in advancing an awareness of sustainability in their students. Most of the participants believe that instructors play a central role in advancing this awareness in their students. One had to become a role model and “walk the walk” to teach ESD effectively, many of the faculty members said, because students could sense authenticity. According to the respondents, professors can lead by example in the following ways:

First, faculty members can model interpersonal and intercultural communication skills by showing students how one listens to opinions and contributes to debates. This helps students to examine and debate values associated with ESD. Furthermore, instructors can model collaboration and systems thinking by working on interdisciplinary projects that help learners see connections between subjects. Another way is to model critical thinking skills that help students distinguish between facts and propaganda. Students must learn to question authority and scrutinize the trustworthiness of sources.

More than ever before, students are exposed to a torrent of information streaming in from an ever-increasing array of media. Professors can assist students by showing them how to evaluate information and consider multiple perspectives to form educated opinions.

Moreover, professors can encourage students to direct their own learning. In this approach, the professor models participatory decision-making by taking on the role of guide and learning companion instead of being omniscient. This part may not be easy for some faculty because it requires them to relinquish authority, but several participants indicated that they consider this to be very effective because it promotes independence.

According to Shepard (2008), who investigated the importance of role models in higher education, there is significant evidence that suitable role models influence students' affective learning in positive ways. In contrast, unsuitable role models can have detrimental effects. Shepard points to a study by Paice et al. (2002) involving health care practitioners and their suitability as role models for students. The researchers concluded that some doctors were conveying such "conflicting messages" (p. 95) that one had to wonder if they should be teaching at all. In my conversations with the participants, several professors described situations in which instructors' actions were in direct opposition to what they were lecturing about. All felt that such hypocrisy had a negative impact on teaching the values associated with ESD.

In addition to understanding themselves as role models, these faculty members also see themselves as contributors to the effort of raising students' awareness of sustainability. The commonalities I found in their descriptions are summarized in the theme "Planting the Seed" in Chapter 4. In essence, the participants believe that each instructor makes a valuable contribution to the goal of advancing sustainability. By being

exposed to similar ideas over the course of several semesters, students eventually become conscious of the issues, learn to discern sustainable from unsustainable solutions, and apply this.

When infusing ESD, faculty members must have patience. Even when instructors feel an urgency to teach ESD, they should resist the temptation to expose students to excessive information as this may "backfire." According to Down (2006), students react negatively when professors present them with an onslaught of data on sustainability, especially in courses that students do not associate with the issue, for example, computer technology. The views of the study's community college professors seemed to be aligned with Down's findings. At the community college, where most students spend at the most two or three years, students might have moved on by the time the proverbial seeds start sprouting. Despite these realities, the participants believe that their contributions ultimately make a difference in promoting ESD.

Challenges

The challenges professors encounter when integrating sustainability issues into the curriculum were the concern of the fifth subsidiary research question. Obviously, the participants face numerous challenges with ESD. Several of the responses were aligned with the obstacles described in the literature.

Many participants cited lack of time and energy as an impediment to becoming more involved or to maintaining momentum. This is aligned with observations described by Moore (2005b). Furthermore, some participants find it difficult to attend professional development workshops about sustainability. A lack of time alone may not be the sole barrier. According to Ferrer-Balas, Cruz, and Segalàs (2006), sustainable development-

training workshops that the Technical University of Catalonia offered drew mainly faculty who were already knowledgeable of sustainability issues, while those who would have benefited the most never enrolled. The researchers argue that "it is almost impossible to motivate those who resist change" (p. 27). In the interviews, several participants also mentioned a similar pattern for Green Studies workshops and EEI event, saying that the same people tended to show up. In addition, the two faculty members teaching mathematics and science expressed that their existing curriculum was already very "dense" and that they did not have enough time "to get all of this done" in one semester. However, these two professors were the exception. The others felt that ESD was relevant. For this sample, the density of one's curriculum presented a challenge for only two participants.

At the institutional level, most participants mentioned the college's size and perceived lack of cohesion as another challenge. The magnitude of the college and its division into eight campuses presented an obstacle to a more unified approach to ESD. Four faculty members, for example, were unaware of the fact that the college had signed the Talloires Declaration. Several participants also referred to the fragmentation of the disciplines and the fact that there was little interdisciplinary collaboration as institutional barriers to ESD. It is important to note that Miami Dade College is the largest community college in the United States and that its dimensions present a unique challenge for integrating ESD. However, most community colleges are mid-sized and enroll between 1,000 and 10,000 students (U.S. Department of Education, 2008), and it is likely that the implementation of changes will be more noticeable at smaller colleges.

Aside from the institution's size, the participants thought that the campus culture presented a challenge. While sustainability efforts such as recycling campaigns, petitions for more sustainability course content, or energy efficiency programs are often student-driven at liberal arts colleges and universities (AASHE, 2010), the participants reported that their students were not initiating such activities. At MDC, faculty members and the Earth Ethics Institute drive the change. The participants discussed several contributing factors: students' general lack of academic preparation; students' limited sustainability awareness; students' difficulties with seeing the bigger picture because of their personal, social, or economic circumstances; and students' preoccupations with degree attainment and material goals.

Finally, some professors felt that it was difficult to infuse ESD when the issue of sustainability created tension. Many said they were used to being labeled "hippies", but a few were frustrated by the fact that some associated sustainability with a political agenda. According to Newman (2009), instructors who infuse their coursework with the values associated with sustainability are confronted with a dilemma. If they teach these values overtly, they face accusations of indoctrination. On the other hand, if instructors do not bring these values into their classrooms, students become influenced by the "values latent in the 'hidden curriculum' of their educational institution" (p. 99). When responding to the issue of perceived indoctrination, the participants said that integrating ESD into the curriculum was worthwhile, and they suggested strategies on how to do this.

Learning About ESD and Teaching Practices

The final subsidiary research questions asked how faculty members learn about ESD and appropriate teaching practices. The participants reported using a variety of

sources to study ESD. Many are autodidacts who turn to traditional media as well as modern sources. They also stated that others had shared experiences or recommendations. The MDC sponsored lectures were also listed as important sources of information about sustainability issues. The participants who had attended longer experiences were convinced that these were "transformative."

Many participants took some time to discover the EEI; however, once they did, they found it provided excellent information. Other than via the EEI, the participants reported receiving little from the administration or their department chair. Sustainability was neither discussed at meetings nor brought up elsewhere, they said. A few participants articulated that the college should provide more "exposure" to the issue.

Despite my probing, the participants did not provide much concrete information regarding how they learned about appropriate teaching practices for ESD. Most felt that one could present factual information, but that one could not teach awareness, compassion, respect, or caring. Students had to come to a "realization" themselves. Many professors reverted to the "Planting the Seed" metaphor, meaning that they exposed students to the ideas, acted as role models, pointed out connections between their subject area and other disciplines, and then retreated to let the seed germinate. Overexposing students and assuming they will understand ESD quickly were seen as counterproductive.

Even though the participants did not overtly endorse any approach to teaching ESD, they had a clear sense of what would work better. From conversations and documents they supplied me with, I gleaned that the majority already engaged in a teaching style that aligned with many of the United Nations' key characteristics of ESD:

(a) All of the participants regarded ESD as "interdisciplinary and holistic" and felt that sustainability needed to be addressed across the community college curriculum. (b) Many believed that because ESD was "values-driven," it was important to teach students the skills necessary to critically examine and debate issues. (c) The majority of faculty members reported that their coursework was meant to develop students' "critical thinking and problem solving." They challenged students to reflect critically on a variety of sustainability related issues. (d) Many of the participants talked about creative assignments. These included hands-on activities such as building a model of a sustainable school with natural lighting and cooling systems, recording an oral impersonation of an animal on the professor's voice mail, filming and editing public service announcements on global warming and the Earth Charter, and building an organic garden in the community. In other words, they engaged in the "multi-method" approach recommended in the framework. (e) Some of the participants also discussed the issue of "participatory decision-making." They believed it was important that students directed their own learning by choosing their own projects. (f) As for "applicability," the majority of participants indicated that the learning experiences they created for their students often had an impact beyond the classroom. For example, students could use what they learned about nutrition labels, organic food, and chemical additives to prepare more wholesome food for their family members. At work, they could inform their co-workers about recycling methods, harmful cleaning agents, and energy-saving behaviors. (g) Finally, many professors felt it was important to make the concept of sustainability "locally relevant." They introduced students to the South Florida bioregion to help them draw connections between local, national, and global events. Some said that they would like to

see more emphasis on foreign language instruction because languages and cultures were intertwined.

Limitations

This study focused on full-time professors representing several but not all disciplines at a typical community college. A study expanding to other departments may render different results. Furthermore, this study was conducted at Miami Dade College, the largest community college in the United States, and the institution's size was frequently mentioned as an obstacle to the implementation of ESD. At a smaller college, this may not have been the case.

Recommendations for Practice and Policy

ESD is a relatively new topic in the higher education discourse, but the global problems resulting from humanity's unsustainable path implore those of us who work in education to focus our attention on this important issue. The year 2009 marked the mid-point of the United Nations Decade of Education for Sustainable Development (2005-2014), and the participants who flocked to Bonn, Germany, to evaluate the success of the first half and make recommendations for the remaining 5 years stressed that advances in science have helped us understand many problems and that the remaining challenge was to "to put this knowledge into action" (Bonn Declaration, Statement 14). Based on the findings and conclusions drawn from this study, I feel compelled to make the following recommendations for practice and policy:

First, we must communicate our ideas clearly. The participants interviewed for this study employed a variety of metaphors to express what ESD meant to them. Some of these metaphors, for example, the seed planting resonated with many; others such as the

green tent were unique to one person. Like shards of colorful glass in a kaleidoscope, these metaphors, whether universal or rare, enrich the ESD discourse. We need to understand that the words we choose create different mental images in people. On the one hand, using a variety of terms draws an assortment of people into the debate; on the other hand, some terms may alienate certain groups.

When it comes to the conceptualization of ESD, it is therefore important that administrators and policymakers understand that sustainability terms have different connotations and that they need to be chosen with care when formulating mission statements, strategic plans, learning outcomes, or course descriptions. Similarly, an institution's publications ought to use its chosen term(s) with consistency in order to communicate the college's intentions with clarity. Using phrases such as *green*, *environmentally sustainable*, *sustainability, or sustainable development* interchangeably without explaining what they are meant to entail leads to a watered-down approach that eventually renders ESD meaningless. Already, consumers are skeptical of companies' environmental claims. It is not in the interest of ESD if academic institutions create similar distrust among their stakeholders.

Second, despite the 2009 financial meltdown that decreased endowments and diminished state funding and private donations, institutions should continue to look for ways to model sustainability. The Web site hosted by AASHE (Association for the Advancement of Sustainability in Higher Education) features many examples of campus sustainability efforts that have already been completed or are currently under way. Florida Gulf Coast University, for instance, cools its buildings with a thermal ice storage system that produces ice when electricity is least expensive. According to the school's

Web site, the university is able to save more than 200,000 dollars annually in reduced utility bills (AASHE, 2009). The findings of my study suggest that professors generally consider the visible application of ESD imperative for their college as a model of sustainability.

Third, higher education institutions ought to examine their internal structures and how they affect their missions. Do these structures model systems thinking and flexibility, or do they symbolize separations between individual academic and administrative departments? Shriberg (2002) found that sustainability initiatives were most pronounced in less hierarchical institutions in which collaboration between the various stakeholders led to decisions. Moreover, Moore (2005b) documented that a lack of strategic vision and difficulties modeling sustainability were keeping the University of British Columbia from progressing swiftly toward sustainability. The participants of my study also considered an inflexible internal structure an obstacle to ESD. Institutions of higher learning will have to take a better look at their inner anatomy and begin to erase boundaries if their goal is to move ESD forward.

Fourth, I would recommend that colleges and universities raise the bar of their certification and graduation requirements to reflect a commitment to ESD. Once these are in place, sustainability will have to be woven into course competencies across the curriculum and into the self-assessment requirements for faculty. This will set in motion professional development with an ESD focus for faculty, administrators, and staff and lead to more scrutiny when it comes to adopting textbooks or other course materials. It is doubtful that pre-service teacher textbooks with virtually no mention of sustainability as

those reviewed by Bristol (2005) would be selected if an understanding of sustainability issues graced the catalog of expected graduation or workforce certification requirements.

Fifth, some colleges have begun to infuse ESD into the curriculum by offering courses that focus on sustainability. It is imperative that universities establish articulation agreements with their local community colleges to ensure that such ESD courses will be transferable. Students will be unlikely to enroll in elective sustainability courses at their community colleges if they are not sure that they will receive credit once they transfer.

Sixth, colleges and universities need to expand their professional development on ESD. The findings of my study indicate that a lack of compatibility between ESD and one's subject area did not present an obstacle to the 14 participants. It is probable that attending workshops helped the participants view sustainability and teaching as less "disparate" and more "overlapping," if not "integrated" (see research by Reid & Petocz, 2006). As previously mentioned, the two participants teaching mathematics and chemistry reported the most difficulties when it came to infusing their classes with ESD. While the connection between ESD and mathematics may be harder to establish, the link to chemistry is obvious. Many topics such as sustainable agriculture, genetic engineering, saltwater intrusion, availability and purity of freshwater, effects of oil spills on ecosystems, and incineration of trash require an understanding of chemistry. Therefore, reaching out to science faculty is critical. Moreover, science departments must involve themselves in the study of sustainability.

Since professors are asked to submit lesson plans tying the contents of the workshop to their courses, workshops like Green Studies can be important opportunities for faculty members to examine how ESD can be integrated into their courses. Such

workshops should focus especially on pedagogy and lesson planning to help instructors develop strategies for infusing sustainability into their courses. When it came to identifying specific teaching strategies for ESD, many participants provided only vague answers. The professors talked more about what they were doing in their classes and less about how they were helping students grasp the concepts of sustainability. Although the lesson plans I examined showed great creativity, they often lacked attention to the nitty-gritty of instructional methods. Offering professional development in which faculty members have an opportunity to explore ESD teaching strategies and build successful lessons will help them gain the skills and confidence to address sustainability in their courses and enhance student learning.

Seventh, as suggested by the participants and supported by research, students benefit from suitable role models. Colleges should continue to develop professional development programs in which faculty can learn more about sustainable lifestyles so that they can become better role models for their students. Whereas extended immersions may have the biggest impact, it is doubtful that many schools have the means to send entire faculties. Instead, they could look into recreating positive experiences on campus or at nearby facilities. Small-scale, local organic farms might be ideal for workshops for faculty whose commitments or health prevents them from traveling.

Eighth, to address the question of perceived indoctrination, colleges could devise workshops in which faculty examine values and teaching strategies. ESD is not meant to coerce faculty and students into a particular set of values; instead, it seeks to encourage dialogue about what values people hold and how these inform their decision-making. Before a workshop, instructors could write about the hidden curriculum that they observe.

Then they could compare impressions and discuss how these impact their teaching. Critically examining and reflecting on how values inform teaching could help professors become more aware of where they stand, what the alternatives are, and how they can encourage a constructive and democratic exchange of ideas in their classrooms.

Ninth, aside from promoting ESD workshops, colleges may want to create follow-up sessions where faculty can not only share lesson plans but also comment on the success of their implementations. The EEI Web site offers links to lesson plans submitted by professors from a range of subject areas; however, these lesson plans differ in length and substance. To encourage the creation of carefully crafted lesson plans, I recommend that administrators charge a committee with creating model lesson plans that take the UN DESD key concepts of education for sustainable development into consideration as well as existing learning outcomes. At Miami Dade College, for instance, these model lesson plans should reflect the institution's learning outcomes and course competencies.

Tenth, if colleges could find ways to compensate faculty for participating in professional development workshops on ESD, more professors might choose this option, which would lead to more courses being infused with ESD. Successful programs such as the Piedmont Project at Emory University (Eisen & Bartlett, 2006) have been offering participants such remuneration, which has resulted in more than 100 courses with sustainability content at the university. Savings incurred from energy efficiency programs and other forms of conservation can free up funds to compensate faculty.

Eleventh, because infusing ESD into the curriculum requires persistence and patience from faculty, colleges should seek ways to offer support to those instructors who have committed themselves to this. People who try to live more ethically and sustainably

are often forced to act contrary to established routines. Arbuthnott (2009) argues that people who constantly go against the grain of an unsustainable society become exhausted. Colleges can demonstrate their commitment to ESD by adopting solutions on campus. For example, they can enact carpools for those who would like to drive less. They can offer organic, vegetarian, and vegan options in their cafeterias so that people who prefer to eat more sustainably will not have to bring their own meals. Colleges can also revamp event planning. For people committed to ESD, having to eat from plastic plates with plastic utensils and being given no choice but to drink from Styrofoam cups during official events is dispiriting, and so is not finding a recycling bin in the conference room. Institutions should begin with low-hanging fruit like recycling programs and move up to more comprehensive changes that address transportation, procurement, and building design and energy performance.

Twelfth, colleges should look for ways to engage entire communities in ESD. The flow of information needs to go in both directions, away from and toward the college. I would advise colleges to plan campus events such as round table discussions, film screenings, and seminars so that local residents can learn about sustainability. I would also advocate that colleges create forums where community members can share their knowledge of sustainable living with everybody. Instead of hosting cultural events for entertainment and light celebrations of cultural diversity, programs could be enriched to address sustainability issues. This way a Hispanic Heritage celebration could also inform visitors about the plight of migrant workers who struggle for higher pay or expose links between pesticides and infertility of plantation workers. In short, as one participant suggested, these cultural events "could have a more enlightening approach."

Last but not least, college administrators who hope to bring ESD to their school should insist that their institution hire specialists to coordinate training, programming, and community outreach. It should not be assumed that dedicated faculty members will take on this responsibility. Faculty will offer support, but sustainability is complex and often highly technical; therefore, trained experts need to be employed to oversee the college's transformation.

Recommendations for Research

The findings of my study suggest several foci for research. First, I would suggest that researchers expand the palette of ESD research in general. A study by Chapman, Flaws, and Le Heron (2006) which looked at master's and doctoral theses published between 1993-2004 found that research on sustainability was rare and not in line with the goals of the UN DESD. Graduate schools should encourage students to consider ESD issues for their dissertations and theses. At the undergraduate level, professors can ask students to connect their term papers to sustainability topics.

Second, the idea that the community college serves as model for and driver of ESD needs to be studied with more intensity. The problem is that those in the trenches, the community college professors, lack the time, expertise, and incentives to conduct research at their own institutions. Since the teaching load for community college professors is not likely to get lighter in the near future, this research will have to be initiated by research institutions. Ideally, universities and community colleges should study ESD at community colleges collaboratively, making use of the university faculty's research expertise and the community college faculty's insights. Administrators should

facilitate the interaction between universities and local community colleges to promote community events, conferences, and research projects focusing on sustainability.

Third, it would be a good idea to expand the investigation to include adjunct faculty. We know little about the full-time faculty at community colleges but less about their adjuncts. Since part-time instructors teach a considerable number of classes, researchers should look at adjuncts' attitudes, beliefs, and practices concerning ESD.

Fourth, I would examine the teaching practices of community college faculty and how they align with the key characteristics of ESD. Even though many of the participants' teaching practices were in line with the goals of the UN DESD, a general lack of attention to methodology could be observed. By observing faculty in the classroom and interviewing professors and students, best practices for sustainability pedagogy could be developed.

Fifth, more studies on the effects of professional development workshops on professors' attitudes, beliefs, and practices with regard to ESD would help administrators create better programming. This would mean bringing faculty together for debriefing and conducting focus group research to allow for sharing problems and solutions.

Sixth, the findings of the study suggest that mathematics and science professors find it difficult to infuse sustainability into their classes because the curriculum is dense and fact based. Swimme (1996, p. 12) writes: "The ruling assumption is that science is concerned with facts, whereas meaning and purpose and value are the domain of religion." Although ESD does not imply a pursuit of faith, it asks instructors to examine the values that are inherent to their disciplines. This means that professors in mathematics and science departments may benefit from professional development that encourages

them to explore these questions. Future research investigating the outcomes of such workshops would certainly help us better understand why these professors have trouble pushing the traditional boundaries of their disciplines and how they can be supported.

Finally, I would suggest that researchers conduct tests of cognitive and affective learning outcomes of ESD in community college students from enrollment to graduation and then study the long-term effects by administering a third test a year after graduation.

Summary and Final Thoughts

The purpose of this dissertation was to gain an understanding of how full-time community college professors at an institution that signed the Talloires Declaration view ESD. Specifically, the study examined the attitudes, beliefs, and practices of professors from a variety of academic disciplines. Before conducting the study, I did not know what to expect because there is so little written about community colleges and ESD. Now that I have gained more insight, I feel cautiously optimistic.

The findings showed that the participants had an overwhelmingly positive attitude toward ESD and that they believe it is compatible with their disciplines. I find this encouraging because it means that professors can envision how their discipline contributes to sustainability. The fact that the participants conceptualize ESD based on their personal backgrounds indicates that we should be open to a variety of interpretations. However, it also means that we need to work on definitions we can agree upon, especially when it comes to mission statements and guiding documents. The professors also pointed out several ways in which higher education institutions could play a role in advancing sustainability globally. Now it is up to institutions to act accordingly. Community colleges can play an especially important role. The participants imagine their

community college as a role model of sustainability for the local community; however, while they generally feel that their college is moving in the right direction, they still believe that neither the campuses nor the curricula reflect the necessary paradigm shift. In short, a lot of work needs to be done.

With few exceptions, the respondents view their responsibility as educators as role models of sustainability and as catalysts or guides, but not experts, of learning for a sustainable future. They believe that change begins with them, so they try to learn more about sustainability and what it means to live with finite resources. Within constraints, they have begun to integrate ESD and related topics into their coursework and create experiential learning activities that take their students outdoors, to local neighborhoods, and into the South Florida bioregion. The participants recommend a systemic and holistic approach that focuses on students' long-term understanding of sustainability.

The professors attach importance to establishing and maintaining relationships as this not only reflects the interconnected nature of Earth's systems but also fosters communication, networking, and collaboration. Regular face-to-face interaction between all stakeholders is understood by them as a cornerstone to creating a sustainability-oriented college community. Most respondents find emotional and academic support when attending Green Studies courses and EEI meetings. Moreover, they use a variety of sources to learn about ESD and appropriate teaching practices. Green Studies courses and related events are regarded as excellent sources of information, and many expressed a desire to attend such courses in the future. Aside from the EEI, the college administration was not seen as a source of improving one's teaching and learning for ESD.

The attitudes, beliefs, and teaching practices of the majority of the participants were found to reflect many of the key characteristics of ESD as presented in the framework for the UN DESD International Implementation Scheme (2006). This overlap can be seen as a sign that the goals of the UN DESD are moving from theory to practice.

The findings, implications, and recommendations resulting from this study have been presented in this chapter with the hope that college administrators, professional development coordinators, faculty members, and policy members nationally and internationally will learn more about how the community college faculty members interviewed for this study view ESD. Community college professors have been underrepresented in research on ESD in higher education. This study may help those implementing ESD to improve their faculty training, curriculum development, and community outreach to help their institutions become models of sustainability.

The publication "The Vital Role of Community Colleges in Building a Sustainable Future and Green Workforce" by the National Council for Workforce Education and Academy for Educational Development (Feldbaum & States, 2009) states:

> Due to their enormous impact on the nation's workforce, economy, and environment, community colleges are well positioned to provide leadership in implementing climate solutions and modeling sustainability on campuses. Of even greater influence are the millions of community college students who will develop the necessary skills and knowledge to lead the country's transition to a low-carbon future.

The findings of my study encourage me to believe that this transition is not only necessary but also possible. Although challenges lie ahead, there are many dedicated individuals who want to shift this paradigm. We need to create more opportunities to

bring people together so that they can move our society in a sustainable direction, locally, nationally, and globally.

"…Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations."

(The Earth Charter - Preamble, 2000)

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APPENDICES

Appendix A

Association of University Leaders for a Sustainable Future
The Talloires Declaration - 10 Point Action Plan

We, the presidents, rectors, and vice chancellors of universities from all regions of the world are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources.

Local, regional, and global air and water pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of "green house" gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations. These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world.

We believe that urgent actions are needed to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature.

Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible. Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge. We, therefore, agree to take the following actions:

1) Increase Awareness of Environmentally Sustainable Development

Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future.

2) Create an Institutional Culture of Sustainability

Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward global sustainability.

3) Educate for Environmentally Responsible Citizenship

Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens.

4) Foster Environmental Literacy For All

Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students.

5) Practice Institutional Ecology

Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.

6) Involve All Stakeholders

Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with community and nongovernmental organizations to assist in finding solutions to environmental problems.

7) Collaborate for Interdisciplinary Approaches

Convene university faculty and administrators with environmental practitioners to develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.

8) Enhance Capacity of Primary and Secondary Schools

Establish partnerships with primary and secondary schools to help develop the capacity for interdisciplinary teaching about population, environment, and sustainable development.

9) Broaden Service and Outreach Nationally and Internationally

Work with national and international organizations to promote a worldwide university effort toward a sustainable future.

10) Maintain the Movement

Establish a Secretariat and a steering committee to continue this momentum, and to inform and support each other's efforts in carrying out this declaration.

1994 Updated Version

Appendix B

United States Talloires Declaration Signatories by October, 2008 (ULSF):

Community Colleges are indicated in bold letters.

United States
1. Alaska Pacific University, Alaska
2. American Baptist College, Tennessee
3. American Re-Insurance Company, New Jersey
4. Antioch College, Yellow Springs, Ohio
5. Appalachian State University, North Carolina
6. Aquinas College, Michigan
7. Arkansas State University, Arkansas
8. Ball State University, Indiana
9. Belmont University, Tennessee
10. Bemidji State University, Minnesota
11. Blue Ridge Community College, Virginia
12. Bowling Green State University, Ohio
13. Brown University, Rhode Island
14. California Polytechnic State University, San Luis Obispo, California
15. California State University, Chico, California
16. California State University Channel Islands, Camarillo, California
17. Cape Cod Community College, Massachusetts
18. Castleton State College, Vermont
19. Central College, Iowa
20. Cerro Coso Community College, California
21. Christopher Newport Community College, Virginia
22. Clark University, Massachusetts
23. Clemson University, South Carolina
24. Clinch Valley College, Virginia
25. College of the Atlantic, Maine
26. College of William & Mary, Virginia
27. Colorado State University, Colorado
28. Connecticut College, Connecticut
29. Daeman College, New York
30. Denison University, Ohio
31. Earlham College, Indiana
32. Eastern Connecticut State University, Connecticut
33. Eckerd College, Florida
34. Fisk University, Tennessee
35. George Mason University, Virginia
36. George Washington University, Washington, D.C.
37. Grand Rapids Community College, Michigan
38. Grand Valley State University, Michigan

39. Guilford College, North Carolina
40. Hampden-Sydney College, Virginia
41. Harford Community College, Maryland
42. Hartwick College, New York
43. Illinois Wesleyan University, Illinois
44. Ithaca College, New York
45. James Madison University, Virginia
46. Keuka College, New York
47. Lane Community College, Oregon
48. Lawrence University, Wisconsin
49. Lesley University, Massachusetts
50. Lewis & Clark College, Oregon
51. Longwood College, Virginia
52. Macalester College, Minnesota
53. Marlboro College, Vermont
54. Mary Washington College, Virginia
55. Maui Community College, Hawaii
56. Meharry Medical College, Tennessee
57. Meredith College, North Carolina
58. Merrimack College, Massachusetts
59. Miami Dade College, Florida
60. Middlebury College, Vermont
61. Monterey Institute of International Studies, California
62. Moravian College, Pennsylvania
63. Morehouse College, Georgia
64. Mount Holyoke College, Massachusetts
65. Muhlenburg College, Pennsylvania
66. Murray State University, Kentucky
67. Nashville State Tech Community College, Tennessee
68. Norfolk State University, Virginia
69. Northern Arizona University, Arizona
70. Northern Virginia Community College, Virginia
71. Northland College, Wisconsin
72. Norwalk Community College, Connecticut
73. Oberlin College, Ohio
74. Occidental College, California
75. Old Dominion University, Virginia
76. Orange Coast College, California
77. Pacific Lutheran University, Washington
78. Pacific University, Oregon
79. Patrick Henry Community College, Virginia
80. Philadelphia University, Pennsylvania
81. Piedmont Virginia Community College, Virginia
82. Pitzer College, California
83. Radford University, Virginia

84. Ramapo College, New Jersey
85. Randolph Macon Woman's College, Virginia
86. Rice University, Texas
87. Richard Bland College, Virginia
88. Rollins College, Florida
89. Rutgers University, New Jersey
90. St. Mary's College of Maryland
91. Saint Thomas University, Florida
92. Sewanee: University of the South, Tennessee
93. Southern Illinois University Carbondale, Illinois
94. Southern University and A&M College, Louisiana
95. Southwestern University, Texas
96. State University of New York at Buffalo (SUNY), New York
97. State University of New York at Geneseo (SUNY), New York
98. State University of New York, College of Agriculture and Technology, Cobleskill, NY
99. Sterling College, Vermont
100. Stetson University, Florida
101. Stony Brook University, New York
102. Tri-County Technical College, South Carolina
103. Tufts University, Massachusetts
104. University of Alaska, Anchorage, Alaska
105. University of Albany, SUNY, Albany, New York
106. University of Arizona, Arizona
107. University of California-Santa Barbara, California
108. University of Colorado at Boulder, Colorado
109. University of Delaware, Delaware
110. University of Florida, Florida
111. University of Georgia, Georgia
112. University of Hawaii, Hawaii
113. University of Idaho, Idaho
114. University of Massachusetts at Boston, Massachusetts
115. University of Miami, Florida
116. University of Montana, Montana
117. University of Nevada, Nevada
118. University of New Hampshire, New Hampshire
119. University of North Carolina at Chapel Hill, North Carolina
120. University of Northern Iowa, Iowa
121. University of Pittsburgh, Pennsylvania
122. University of Puget Sound, Washington
123. University of Rhode Island, Rhode Island
124. University of Southern Maine, Maine
125. University of Tennessee-Knoxville, Tennessee
126. University of Virginia, Virginia
127. University of Wisconsin-La Crosse, Wisconsin

128. University of Wisconsin-Parkside, Wisconsin
129. University of Wisconsin-Stevens Point, Wisconsin
130. Utah State University, Utah
131. Virginia Commonwealth University, Virginia
132. Virginia Community College System, Virginia
133. Virginia Military Institute, Virginia
134. Virginia State University, Virginia
135. Virginia Western Community College, Virginia
136. Warren Wilson College, North Carolina
137. Washington and Lee University, Virginia
138. Webster University, Missouri
139. Western Illinois University, Illinois
140. Western Kentucky University, Kentucky
141. Western Michigan University, Michigan
142. Westminster College, Missouri
143. Winthrop University, South Carolina
144. Xavier University of Louisiana, Louisiana

Appendix C

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title: "The Role of Community College Faculty in Teaching and Learning for Sustainable Development"

Thank you for agreeing to participate in my dissertation research project. Your participation is, of course, voluntary, and you may decide at any time to withdraw your information.

In this study, I will be interviewing community college professors to learn more about their experiences with education for sustainable development (ESD) in higher education. By participating in this study, you will help generate essential knowledge about how community college faculty members respond to environmental challenges and the issue of sustainable development in the new millennium. Your participation does not require personal interest in or specific knowledge about sustainability and you may choose not to answer questions if you feel any discomfort. You will not receive any compensation for your participation.

I will contact you shortly to schedule two interviews with you. The first session will last for about an hour to an hour an a half, and the second will be about 30 minutes long. I will be recording our conversation and may take notes during the interview as well. Everything you say will be kept anonymous, and the results of the interviews will be aggregated and reported without individual names (only aliases will be used). You will be given a copy of this consent form for your records.

Please feel free to ask any questions you may have about the project prior to or during the study. Your participation is greatly appreciated. If you have any questions, concerns, or suggestions, please contact me at 305-237-2549 or at arachels@mdc.edu

If you would like to learn more about this research project, you can contact my dissertation chair, Dr. Claudia Matus, at 305-348-2767. You can also speak with Dr. Patricia Price, the Chairperson of the FIU Institutional Review Board, at 305-348-2618 or 305-348-2494 should you have questions or concerns about your rights as a volunteer in this study.

By signing this consent form, you indicate that you are aware of your rights and agree to participate in this study.

_____	_____	_____
Signature of Participant	Printed Name of Participant	Date

I have explained the research procedure and the participant's rights and answered any questions about the study.

_____	_____
Signature of Witness	Date

_____	_____
Signature	Date

Sincerely,

Anouchka Rachelson
Assistant Professor
ESL/Foreign Languages
Kendall Campus

Appendix D

Interview Guide for Faculty

1. Please tell me about how you became a community college professor?
2. In your opinion, what kind of education is needed in the 21st century?
3. I noticed that you participated in one of the Earth Ethics Institute's Green Studies courses. Could you talk a little bit about your experience in the workshop/s that you attended?
4. What did you take away from it/them?
5. What struck you most?
6. Has attending the Green Studies workshop/s affected you outside of the college?
7. To what extent did you make changes as a result of this experience?
8. How has attending the workshops impacted your teaching?
9. Do you plan to participate in other EEI workshops?
   What motivates you to do that?
10. What do you make of the idea of *education for sustainable development (sustainability/environmental literacy)*?
11. What does it mean to be a community college professor at a time when ESD is becoming an issue in higher education?
12. How would you define ESD?
13. Can you tell me about some experiences that are related to ESD?
14. How is ESD related to your discipline?
15. What is your experience with ESD in the classroom?
16. How do you interpret the function of your community college in promoting ESD?
17. What activities or movements related to ESD are going on at your college?
18. How do you learn about ESD?
19. What suggestions do you have for the Green Studies workshops?

VITA

ANOUCHKA RACHELSON

1984	Hildegard-Wegscheider Gymnasium Abitur (Baccaulareate Diploma)
1986-1989	Hotel Schweizerhof – Hospitality Management College Berlin, Germany
1992-1997	Varied teaching experiences Omiya, Saitama, Japan
1997-2000	B.A. English Florida International University Miami, Florida
2001	M.S. Teaching English to Speakers of Other Languages (TESOL) University of Miami Coral Gables, Florida
2002-2003	Adjunct Professor of English for Academic Purposes Miami Dade College Miami, Florida
2004-Present	Associate Professor of English for Academic Purposes Miami Dade College Miami, Florida