

ASSESSING THE IMPACT: A DESCRIPTIVE PHENOMENOLOGICAL STUDY  
EXAMINING THE PROVISION OF SUSTAINABILITY INITIATIVES IN  
HIGHER EDUCATION AND THE IMPACT ON STAKEHOLDER VALUES,  
PERCEPTIONS, AND BEHAVIOR

A Dissertation  
by  
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## **Abstract**

### **ASSESSING THE IMPACT: A DESCRIPTIVE PHENOMENOLOGICAL STUDY EXAMINING THE PROVISION OF SUSTAINABILITY INITIATIVES IN HIGHER EDUCATION AND THE IMPACT ON STAKEHOLDER VALUES, PERCEPTIONS, AND BEHAVIOR**

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Understanding what, and how, knowledge is communicated is critical in assessing how well information is transmitted in higher education. This is especially true when dealing with new fields of study or integrated practices that attempt to reach across the campus, to multiple stakeholders. The following research project was conducted in order to examine differing approaches to sustainability and the real impact sustainability-oriented courses and campus operations and activities have on students and other involved stakeholders. Focusing on two higher education institutions in North Carolina, a descriptive phenomenological study was undertaken in order to further understand the values, perceptions and behavioral connections and meanings made by students, faculty and administration when presented with education for sustainability, or related campus activities. This is an area of

significance given the accepted social and environmental challenges we face as global community. While institutions of higher education have taken on the task of addressing these issues on their campuses, thus far, much of the assessment and research related to sustainability—a term or process commonly understood as living within our current means without compromising the needs of future generations—has been focused on the environmental and economic issues related to the physical environment. For that reason, this project was created with the intention of taking a more holistic approach to understanding how institutions go about imparting this knowledge and even more critically, how it is received and applied.

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## Chapter 1: Introduction

The terms *sustainability* and *sustainable development* have become commonplace in areas of industry, politics and education (Waas, Verbruggen & Wright, 2010; Wright, 2004). Due to their ubiquity, and innate opacity, the intended meaning, adoption and interpretation may vary dramatically depending on the focus of the organization or individual (Lozano, 2008). Such organizational and individual awareness has increased with international declarations and initiatives, with many businesses and higher education institutions (HEIs) following suit, agreeing that mindsets, behaviors and the scope of knowledge transferred must evolve with the changing world that includes a degraded environment, lessened resources, and increased global inequalities (Sterling, Maxey & Luna, 2013; Wright, 2009). The gap between rhetoric and practice is real when it comes to sustainability (Christensen, Thrane, Herreborg Jørgensen, & Lehmann, 2009; Ferrer-Balas, Lozano, Huisingh, Buckland, Ysern & Zilahy, 2010; Stevenson, 2007). This gap, as it pertains to HEIs, provides the premise of this dissertation, seeking a deeper understanding of the connections between communicated knowledge, perceptions and transformative action in the realm of sustainability on higher education campuses.

Many educational institutions have been attempting to implement and assess their progress in the areas of physical campus enhancements (Wright & Wilton, 2012). At this point in time, much of this assessment has taken the form of energy audits and preset standardized ratings that they, themselves, report. In the United States, the Sustainability

Tracking, Assessment & Rating System (STARS), a program of the Association for the Advancement of Sustainability in Higher Education (AASHE), is the most widely recognized reporting system that has been in use since 2010 (STARS Overview, 2013).

A greater variety of established reporting tools and guidelines are utilized in European corporations and universities. Some of the most commonly used in HEI settings include: the National Wildlife Federation's State of the Campus Environment, the Sustainability Assessment Questionnaire, Higher Education 21's Sustainability Indicators, and the Auditing Instrument for Sustainable Higher Education (AISHE) (Lozano, 2011; Shriberg, 2002).

After a comprehensive review of university sustainability reporting, Lozano (2011) offered that depending on the HEI focus, these summations would be weighted in a specific direction, i.e. environmental, economic, social, etc.—a practice not necessarily surprising or dissimilar from the United States. In addition, he noted that many take their evaluative shape from the Global Reporting Initiative (GRI) even though it is not specifically geared towards universities (Lozano, 2011). Since many HEIs used the GRI as a foundation, and given the gaps in HEI-specific assessments with that usage, Lozano (2006) created the Graphical Assessment of Sustainability in Universities (GASU) to allow for an, “easy comparison of sustainability performance” that “can help university leaders, sustainability champions, and other individuals to compare and benchmark their sustainability performance with relative ease” (Lozano, 2011, p. 68). This desire to compare performance and progress of HEI sustainability in the United States is also of interest on most major campuses. It is currently more common to read of American progress in the form of an internal HEI case study, rather than actual statistical benchmarked comparison for improvement.

Descriptive or narrative case studies have also been common for disclosing current progress or practices (Barth & Timm, 2011; Corcoran, Walker & Wals, 2004; Rieckman, 2012). For the most part, these assessed programs, projects, or initiatives, have been generally rooted in examining one aspect, often in isolation, without significant follow-up and lack of coherent generalizability (Barth & Timm, 2011; Karatoglou, 2013).

If, and when, sustainable principles are being adopted, little research has been conducted regarding what real impact these initiatives, programs, and curricular integrations are having on the intended recipients. What is largely missing is an assessment of the values and perceptions held by students, staff and faculty when faced with the decision to create, adopt and act on this information (Barth & Timm, 2011; Brody & Ryu, 2006; Juráquez-Nájera, Rivera-Martinez & Hafkamp, 2010; Zsóka, Szerényi, Széchy, & Kocsis, 2013). This study aims to address this gap in sustainability research.

An issue related to assessing the impact of sustainability research, implementation, and resultant absorption is awareness of the true multi-dimensionality behind terms like *sustainability* or *sustainable development* (Corcoran et al., 2004; Lozano, 2008; Mebratu, 1998). In the abstract sense, the ideas of sustainability and sustainable development are easy to grasp; however, moving from theoretical conception to implementation has proven difficult when attempting to encourage or adopt sustainable principles at the organizational, regional or national level. Much of this difficulty stems from interpreting the communicated meanings, made more complicated with the competing discourses of multiple disciplines and ensuing tensions created by assuming that the constructed binary of sustainable or *not* sustainable is the sole concern. This issue of interpretation stretches from top to bottom and

has resulted in HEIs, businesses, governments, and nonprofit organizations focusing on limited areas of adoption and implementation (Gonzalez-Gaudiano, 2006).

### **Definition of terms**

Conceptually, the term sustainability is rather vague, making the adoption or application complicated without truly shared, or at least commonly stated interests (Bonnett, 1997; Gonzalez-Gaudiano, 2006). The same can be said for sustainable development. The recognition of proper terms and definitions within any conversation involving the term “sustainability” is ultimately a fluid quagmire. The most widely accepted definition of sustainable development (Lehtonen, 2004; Lozano, 2008; Shaharir, 2012) is taken from *Our Common Future*, or Brundtland report, a 1987 publication of the World Commission on Environment and Development (WCED) (World Commission on Environment and Development, 1987). Generally defined as meeting the needs of present populations without compromising the ability for future generations to do the same, sustainable development begins as a reasonably simple concept. However, it also attempts to unite economics and the environment in such a way to encourage a shared, high standard of living for all, with special emphasis on health and community (Spangenberg, Pfahl, & Deller, 2002; White, 2013). How this is enacted or ensured across the world has been difficult to envision. Sustainability is a nebulous concept that begs a multiplicity of interpretations (González-Gaudiano, 2006; Reid, 2005; Stevenson, 2007).

Often considered in terms of the social, ecological, and economic “pillars,” that were established in 2002 by the Sustainable Congress in Johannesburg, the limits of this view are tested frequently (Connelly, 2007). Much of the argument stems from what many believe to be a too simplistic, superficial, environmentally-focused definition (Soini & Birkeland, 2014)

that is couched in a Western European viewpoint. Typically, the discussion is limited to the idea of those with much, using less, reducing their consumption, etc. What is often ignored are the environmental justice and cultural components of behaviors related to not simply consumption, but also a paradigmatic shift in how people view themselves in relation to the rest of the world—both the physical and social realm.

Thus, competing discourses tend to focus on areas that are of personal interest and subsequently create difficulties when attempting to concretize the issue (Dryzek, 1997; Hajer, 1997). With over 70 definitions fighting for use as early as 1992 (Lozano, 2008) and estimates rising to over 500 in use by 2002 (Carroll, 2002), some accounts now argue that there are over 2000 definitions competing for importance at the present time (Senge, Smith, Kruschwitz, Laur, & Schley, 2008; White, 2013). Depending on the individual or group focus, increased weight may be placed solely on ecological issues while related social justice and equity are disregarded.

Both *sustainability* and *sustainable development* describe achieving a current standard of living that does not put future generations at risk. Some authors prefer to consider sustainable development to be a process, while sustainability is the end goal or “ideal dynamic state” (Lozano, 2008, p. 1840). This ongoing, and oftentimes didactic discussion of terms, is important but largely ignored—hence the implications of (mis) interpretation or confusion of process.

The openness for interpretation leads to the potential limited adoption, largely due to the understanding or concentration on only one of the accepted dimensions—or previously mentioned pillars—of sustainability. These dimensions that have been classically understood as including basic elements of life—at the structural and cultural level—(Scoullos, 2010) are

more recently being discussed as necessarily inter- and intra-dependent of one another, rather than separate entities embodying strictly environmental or ecological issues, economic strategies or social constituents. These new discussions now include such issues as equity and larger justice concerns in the physical, as well as discursive sense of communicated information (Dryzek, 1997; Wright & Wilton, 2012).

Taking all of this into consideration, most researchers comfortably conclude that sustainability requires a holistic approach (Gibson, 2006; Lozano, 2008; UNESCO, 1997) at all levels—communication, interpretation, implementation, and assessment. Traditionally fragmented into their own individual frame with associated initiatives and interest groups, some argue that the continuation of identifying these distinct pillars—even in description—contributes to the maintenance of disjointed study and unproductive practice (Lehtonen, 2004; Spangenberg et al., 2002).

Recent reviews of published research oriented around the topic of sustainability, demonstrate that as a field, it is becoming more interdisciplinary, finding common ground between shared foci (Schoolman, Guest, Bush, & Bell, 2012). Many individuals and institutions are working on adjusting, or adding depth to both the conceptualization of this framework as well as the practical application. Additional elements such as heightened consciousness, and explicit ethical awareness as well as attention to the element of temporality are just some of the efforts underway related to sharing space and valuing connections as well as awareness of the importance of temporality (Bernal & Edgar, 2012); Lozano, 2008).

For the purposes of this background discussion, *sustainable development* will be considered as an ongoing, integrated process. Where specificity warrants, the terms will be

unpacked and applied appropriately to referenced authors' discussions. When considering the curricular adoption in HEIs, the phrase *education for sustainable development* (ESD) will be utilized for the infusion of principles of sustainability or sustainable development throughout the institution or in isolated programmatic designations. These selections of terms should not be taken as a political statement. It is understood that the particular nomenclature and definitions may find favor in various camps and distaste in others. The intention here is simply ease of identification.

While some (Daly, 1991) argued that the generality and vagueness lent itself to increased opportunity within personal definition practices, this is basically an area of study with unbound roots and tangled application. Higher education has been charged directly with untangling these definitions and making the practical application of terms a reality for university students (Golob, 2009; Orr, 2010; Sterling, Maxey, & Luna, 2013).

### **Higher education for sustainable development (HESD)**

Application and action are critical in any field. Within the field of sustainable development, the link between knowledge and behavior is important at the theoretical and policy level (Clark, Rutherford, Auer, Cherney, Wallace, Mattson, Clark, Foote, 2011; Hopkinson, Hughes, & Layer, 2008); however, ensuring that the knowledge translates into meaningful information and action has become an issue of greater importance in recent years (Ferrer-Balas et al., 2010; Sherren, 2005; Stevenson, 2007). Broader conversations regarding the environment and society on the international level began in the 1960's with awareness of impending resource scarcity. In addition to larger societal issues of equity and environmental degradation, international conferences held in the next decade would call for the incorporation of environmentally-focused education.

The need for integrating environmental elements into the global curricula was addressed in 1977. At the United Nations Educational, Scientific and Cultural Organization (UNESCO) conference in Tbilisi (Golob, 2009), basic goals were defined and an interest in integrating environmental elements into curricula was encouraged (Orr, 2010). In 1992, in conjunction with the United Nations Conference on Environment and Development, Agenda 21 was developed (United Nations, 1992). This now somewhat controversial plan, considers education the driving force for making changes in the marred human-environmental relationship (Golob, 2009). In 2005, the United Nations Decade of Education for Sustainable Development began which provides the most recent guidelines for education for sustainable development (UNESCO, 2007).

The importance of integrating principles of sustainability throughout campus facilities and operations is reasonably well accepted. However, even though HEI administrators are aware of the need to increase physical operations efficiency for both the economic and environmental bottom line, increasing research, outreach, and actual education along with encouraging student participation and increasing awareness of social justice issues are also central issues for educational institutions within the sustainability discussion (Barth & Timm, 2011; Cortese, 2003; Gough & Scott, 2007; Fien, 2002). This importance however, is matched by difficulty—both the obvious as well as the obscured—when attempting to put into practice what they are proposing. Of great importance and currently lacking, is abundant research addressing the effect these initiatives have on students, staff and faculty (see Juarez-Narjara, Rivera-Martinez, & Hafkamp, 2010; Yuan & Zuo, 2013; Zsóka et al., 2013). This project attempts to add to the growing body of research by asking more questions and

increasing the breadth and scope of data collection and analysis in the area of sustainability initiatives on HEI campuses.

### **Research questions**

The basic purpose of this project was to better understand how rhetoric and reality intertwine on HEI campuses in the area of sustainability initiatives. More specifically—was effect do sustainably-focused campus activities, increased facilities and operations efficiency, and curricular integration of sustainability features have on students?

A specific question involving students included:

- Are there any noticeable differences and/or similarities in student perceptions—and pro-environmental behaviors—when faced with explicit material in the form of coursework, versus that of more implicit information such as campus activities and the surrounding physical environment?

The goal of this project was to examine what the stakeholders understand and how they choose to adjust their behavior when presented with this information. It is an attempt to shift the research from solely assessing what students are capable of repeating on a questionnaire regarding the definition of “ecology” or “biome,” and move into areas less explored using a mixed methods approach that incorporates multiple strands of data collection and analysis in order to view the issue with a more holistic lens.

Understanding if, and how, an explicit form of pedagogically-based instruction encourages change, in contrast to one grounded more firmly in the cultural surroundings, peer groups and physical structures was of interest. Therefore, the following questions were also vital within this project:

- How is sustainability understood on campus?
- Is that a shared definition? How was it derived?
- How are messages of sustainability communicated?

In order to examine that interplay between communication and understanding, a critical exploration of the perceptions, attitudes and values held, as well as an understanding of the effectiveness of sustainability-focused discourses on HEI campuses was proposed. The research project seeks to integrate the everyday facets of campus life—information dissemination, meaning making, course offerings, and additional programming—into a framework involving discourse analysis, ethnographic techniques, and descriptive statistics in order to provide a more complete picture of how we understand sustainability on HEI campuses. This addition to the current body of sustainability research will hopefully lead to further work in these largely under-examined areas of perceptions and action, potentially leading administrators and faculty to new approaches for sustainable programming and practices on their campuses in the future as more and more institutional bodies realize that this issue is one that we must all address.

## **Chapter 2: Literature Review**

### **Historical declarations in sustainability**

The WCED report of 1987, though important, was not the first attempt to call public attention to the issue. On the international level, including in the United States, individuals and governments were beginning to pay attention. Environmental concerns became collectivized in 1948 with the first international conference in Paris. Known as the Conference for the Establishment of the International Union for the Protection of Nature, awareness was spilling into the public realm (Carter & Simmons, 2010). In 1972, an international community gathered at the Stockholm Conference, initiating a period of scholarly, economic and political collaboration around the topic of sustainability and the necessary relationship to education. Containing 26 principles, the declaration arising from the conference was meant to serve as a guide for behavior in all realms of development, aimed at finding common ground as well as a common focus to move forward as a global community (United Nations Environmental Programme, 1972).

The Belgrade Charter and previously noted, Tbilisi Declaration, followed in 1975 and 1977 respectively, each focusing on the usefulness of adding an educational component that would support the goals envisioned for the creation of a sustainable world (see Calder & Clugston, 2003; Lozano, Lukman, Lozano, Huisingh, & Lambrechts, 2013; Wright, 2004 for thorough address of pertinent declarations related to sustainable development).

In the United States, the 1960's ushered in Vietnam, an era of civil rights activities and environmental treatises from various camps. Rachel Carson's *Silent Spring*, published in 1962 and warning of the unintended consequences of widespread pesticide use, is widely heralded as the catalyst for large-scale awareness of chemical dangers in everyday life (Carson, 2002).

Two years later, Stewart Udall, John F. Kennedy's Secretary of the Interior, authored a book titled, *The Quiet Crisis*, that examined the possibility of natural resource limits and need for environmental education conservation efforts (Carter & Simmons, 2010). These efforts signal a significant shifting awareness of the natural world in relation to human activities. Paul Ehrlich's *The Population Bomb*, published in 1968 was not quiet at all and sounded a shrill alarm, warning against rising global population and diminishing resources (Ricketts, 2010). Environmentally focused legislation was passed, including the Wilderness Act in 1964 the Clean Air, Solid Waste, Species Conservation, Wild and Scenic River Acts quickly followed, culminating with the National Environmental Policy Act (NEPA) that went into effect January 1, 1970 (Carter & Simmons, 2010; Ricketts, 2010). In the same year, president Nixon proposed that instructing children in environmental concepts and environmental literacy was a necessary component of a sound education (Carter & Simmons, 2010).

That was a period of unrest and reform in the United States and Senator Gaylord Nelson from Wisconsin sought to emulate the sit-ins that were taking place in protest of civil rights abuses or the conflict in Vietnam with an environmental teach-in. Nelson, and a small group of others, organized a collaborative, environmentally focused, campus event on April

20, 1970, which became the inaugural Earth Day. Over twenty million people and 1500 colleges and universities participated in the bipartisan supported event (Carter & Simmons, 2010). Colleges and universities quickly accepted the environmental ethos on campuses (Ricketts, 2010). This was legitimized by then President Nixon signing the first Environmental Education Act in the fall of 1970 (Carter & Simmons, 2010). However, this movement only had a five-year life span and was underfunded, resulting in minimal changes throughout the educational system.

### **HESD specific declarations**

Sustainability-focused initiatives require funding as well as practical application. American higher education began emulating broader international movements, with one of the earliest schools to offer an environmental program of study at Williams College at Middlebury in Vermont. Brown University followed, as did Tufts (Orr, 2010). Tufts also became the first university to incorporate sustainability principles across the school disciplines. In 1990, Tufts president, Jean Mayer, convened 22 universities in Talloires, France, to establish goals for environmental awareness and imaginative leadership among others in hopes of encouraging sustainable principles and student sustainability literacy in higher education. By 2008, 360 college presidents in 40 countries had committed to what is known as the Talloires Declaration (Orr, 2010; Yarime et al., 2012).

A year later, members of the United Nations University and the Association of Universities and Colleges of Canadian convened with an international community of higher education leaders to discuss the need for an increased focus on sustainable practices and education. The Halifax Declaration emerged from this meeting (“Declarations for

Sustainable Development,” n.d.). The Swansea and Kyoto Declarations followed in 1993 (Anderberg, Norden & Hansson, 2009; Wright, 2004). And the COPERNICUS Charter for Sustainable Development created through a cooperative effort of the Association of European Universities (CRE) in 1994 (“Declarations for Sustainable Development,” n.d.; Yarime et al., 2012). The Lüneburg Declaration was created in 2001, and followed by the Declaration Ubuntu in Education, Science and Technology for Sustainable Development in 2002 (Yarime et al., 2012). The Barcelona and Graz Declarations emerged in 2004. Themes running throughout all university-focused declarations include: an increased consideration of sustainable principles guiding the physical operations of the campus, research foci, outreach, inter-university collaboration, and the development of more interdisciplinary curricula (Yarime et al., 2012). In 2007, the American College and University President’s Climate Commitment (ACUPCC) was enacted, with signatories agreeing to dramatically limit their institution’s carbon footprint.

### **Background of HESD**

The aforementioned internationally ratified agendas make it clear that the larger world has been aware of the importance of educating young people in principles of sustainable development for some time. HEIs, though accepting of the challenge, face significant hurdles when attempting to implement policies that effectively incorporate all dimensions of sustainable development.

Evidence of successful balancing in terms of the aforementioned components—economics, the environment and sociocultural elements of sustainability—are few and far between. As HEIs have made great efforts to increase the degree of sustainability on their

campuses, often the focus has been shifted towards one or another area over the integration of all (Lozano, 2010).

This is problematic on a number of levels: first of which relates to the belief that the environment must be understood using a whole systems approach that also values multiple disciplinary interests (Meadows, 2005). The UN Decade of Education for Sustainable Development recently ended and posited that an inter-disciplinary approach is necessary when examining the contemporary environmental problems and seeking solutions to our current and future problems related to resource use and associated inequality (Novo, Murgameno, & Bautista-Cerro, 2010). Encouraging multiple methodologies, the traditional balkanized system of educational organization is coming into question as it is recognized that better work is done with collective energies and less disciplinary divisiveness.

Lang, Wiek, Bergmann, Stauffacher, Martens, Moll, Swilling, & Thomas (2012) note that transdisciplinary research and education methods are a burgeoning area with great potential. They define transdisciplinarity as, “a reflective, integrative, method-driven scientific principle aiming at the solution or transition of societal problems by differentiating and integrating knowledge from various scientific and societal bodies of knowledge,” (p. 26-27). They also call attention to the levels of interconnectivity necessary for addressing complex problems. Advocating a systems approach, the need for not only identifying those connections but also understanding the impact individuals have on the global world is an inherent element of ESD (UNESCO, 2004).

Wider campus attention and interest definitely contributes to a further reach of ESD into the actual curricula. Administrative recognition and encouragement of the benefits of trans, inter, or multidisciplinary research approaches in a sustainability direction could also

foster faculty buy-in at a more student-centered level (Lidgren, Rodhe, & Huisinigh, 2006).

As a UNESCO document point out, “In sum, the puzzle of sustainable development cannot be solved by concentrating on the pieces. It has to be seen as a whole—in both its scientific and social dimensions—not as a series of isolated issues and problems” (1997, p.12).

Adoption of a systems approach in the curriculum has also been carried over into the process of integration when researchers examine campus attempts at integrating ESD. Policy changes and initiatives must be linked to learning in order for the information to be meaningful and on a level that people can relate to in significant ways (Karatzoglou, 2013).

Many higher education institutions are slightly delusional when it comes to needed change within their own ranks. And their acceptance of a “rationality myth” means that many colleges and universities make small improvements without assessment or focus on self-reflection (Lidgren et al., 2006, p. 801). As Karatzoglou (2013) discusses, a lack of reflection and self reporting of schools and universities tend to emphasize rather marginal advancements that may be viewed more as adaptations, as opposed to necessary proactive changes needed to deal with contemporary problems involving sustainability. Oftentimes, this involves maintaining a vertical integrative process, rather than full implementation, and calling it a success as opposed to attempting real change.

This limited, short-term view is consistent with misunderstanding the complexity of the issues and the integration process itself—most obviously, that it is a process. As Meadows (2005) argues, altering the individual elements may not alter the system and in the case of institutional structure and ESD, disciplines may be renamed or new faculty hired but it is still a university. However, if disciplines are merged, and the process by which we generate knowledge altered, we have changed the linkages and interconnections. Herein lie

both the crux of systems thinking and also the failure of higher education to grasp the ultimate goal of education as innovative change agent.

### **Institutional organization**

Questioning the established framework of higher educational institutions is a challenge to education and scholarship writ large (Lidgren, Rodhe, & Huisinigh, 2006; Sharpe, 2002). However, an area that stands out in the ESD literature is the organizational structure of higher education. While not unaware of the problems at hand, as a bureaucratic entity, higher education seems implacable even in the face of needed change. HEI administrators' inability to make adjustments in keeping with the pace of new information and instructional needs has proven to be a significant obstacle (Clark et al., 2011; Greenwood, 2010).

Various strategies on HEI campuses have been employed in attempts at what many have likened the 'greening' of schools. However, mainly two major shifts have occurred—one at the facilities and operations level and the other at the curricular—on campuses across the world (Hopkinson, Hughes, & Layer, 2008; Saleh, Kamarulzaman, & Hashim, 2011).

The American College and University President's Climate Commitment (ACUPCC) decision to take the lead in reducing their impact in the area of climate change is emblematic of the facilities and operations focus on sustainability that many institutions have adopted. Recycling programs, local food sourcing, composting, and Leadership in Energy and Environmental Design (LEED) certified construction are but a few obvious attempts to decrease their campus' impact. Whether or not they are actually successful is another topic altogether and is being addressed using environmental indicators for rankings and assessment (see Klein-Banai & Theis, 2011; Lukman, Krajnc, & Glavic, 2010).

From a curricular standpoint, things are more complicated. More headway has been made in the establishment of singular environmental or sustainability studies programs with fewer North American institutions attempting to integrate sustainability throughout their entire curriculum than their European counterparts. According to a National Wildlife Foundation survey, the amount of sustainability related education programs stagnated and may have actually declined between 2001 and 2008 in the United States (Orr, 2010). Even though institutions have increased single course offerings and the number of environmental science degree granting programs in the United States and Canada has grown to over one thousand, providing sound sustainability principles across disciplinary lines is still problematic for many institutions (Clark et al., 2011). The following discussion will relate some practical, as well as philosophical issues that muddy the integration of sustainability across the institution and curriculum. Institutional structure, disciplinary segmentation and faculty buy-in are all necessary facets to consider. Understood as an interrelated whole, these pieces may hamper or help the process.

### **Explicit instruction—curricula adoption**

HEIs are paradoxical in the sense that they are meant to be progressive bodies of knowledge but are also conservative by organizational nature, making large-scale change unlikely (Sharpe, 2002). Additionally, due to the nature of academia, it has proven rather difficult to persuade a department made up of individuals to work together for a common cause, unifying personal interests at the occasional loss of personal gain for a subject they are unaccustomed to dealing with (Berquist & Pawlak, 2008; Heifetz, Linsky, & Grashow, 2009). The addition of inexperience, unfamiliarity and disinterest with the subject matter

contributes to the conundrum of encouraging faculty to integrate ESD into their courses (Lozano, 2011).

Benn and Martin (2010) contend that the abstract, diluted nature of the term *sustainability* renders it challenging to communicate throughout the institution in meaningful fashion. This brings us back to the question of education *for* or *about* sustainability. Orr (2010) notes that, “virtually everything about the modern educational enterprise—from teacher training to the stranglehold on disciplines and the procedures for attaining tenure” is rejecting of a transdisciplinary, holistic approach that incorporates “non-essential” information into course work (p. 76). The argument for holistic, systems-based, trans or interdisciplinary address of sustainability issues is loud and clear but not being heeded.

Faculty acceptance of ESD integration is an area of great import (Barth & Rieckmann, 2012). This is also the point at which even the most well intentioned, progressive administration cannot guarantee successful follow through. A consistent set of factors is in play when attempting to integrate ESD across curricular lines. Internal and external forces decidedly influence the ESD integration process (Holmberg, Svanstrom, Peet, Mulder, Ferrer-Balas, & Segalas, 2008). From an internal standpoint, skepticism is one stumbling block. Faculty may not agree that ESD is an issue worth their time or warranting a potential displacement of their own subject matter (Ceulemans & De Prins, 2010) and may not see the value or importance and reject the encroachment of outside material or advisement on their academic autonomy (Holmberg et al., 2008). Running parallel to the outside sources of information exists the potential for rejection based on insecurity due to lack of experience and misunderstanding of expectations.

Reid and Petrocz (2006) note that faculty may resist adding ESD content due to a narrow perspective of what ESD entails (see appendix A for a list of fundamental attributes according to UNESCO). Many believe that sustainability only refers to environmental issues and fail to realize that ESD encompasses issues relating to social justice, poverty, equity and a myriad of others that could potentially be beneficial attributes to higher education course material.

### **What is fundamental knowledge?**

The term “competences” is often used to describe what is important, or necessary sustainability information, that needs to be included and assessed within academic coursework (e.g., by Barth & Rieckmann, 2012; Disterheft, Ferreira da Silva Caeiro, Ramos, & Azeiteiro, 2012; Rieckmann, 2012). The establishment and assessment of standardized competences have proven difficult due to the breadth of concepts and disagreement on importance of focus (Lambrechts, Mula, Ceulemans, Molderez & Gaeremynck, 2012). Further, Eilam and Trop (2011) raise necessary questions regarding the actual implementation of ESD and whether faculty may even be aided by the specification of ESD fundamentals. Additionally, they question the existence of a definitive line between ESD and non-ESD, which is exemplified by Orr’s question (1992): is all education, environmental education? Labeling difficulties aside, one of the most critical questions is whether faculty, and institutions, are properly implementing and assessing their ESD content for the maximum benefit of the students. To this end, Barth and Timm (2011) refer to the need for encouraging “transformation competences.”

After surveying seventy ESD faculty members from Germany, England, Mexico, Chile, and Ecuador, Rieckmann (2012) argues for particular competency development—

including such objectives as, “creating and changing values, attitudes and awareness” (p. 132). Of the nineteen identified key competences, three stood out to all as the most critical and include: “competency for systemic thinking and handling of complexity, competency for anticipatory thinking, and competency for critical thinking” (Rieckmann, 2012, p. 132). Outside of the clear desire to change certain attitudes towards the environment, the aforementioned competences would carry over into most, if not all subjects.

McKeown (2002) and Holmberg et al. (2008) argue that all subjects are conducive for integration, and in fact, ESD could be the vehicle for further encouraging additional competences that assist students in other areas. Henry-Stone (2010) adds eco-cultural literacy, eco-justice values and appropriate assessment to the list generated by Reickman (2012), emphasizing the need for it to be place-based to illustrate the immediate connectivity to resources and need for care. Place includes not just geography, but also culture. Culture being contextual, and often determined by discipline, it is useful to identify the normative qualities implied in the proposed ESD fundamentals.

Holmberg et al. (2008) argue that “embedding sustainability within the curriculum does not only mean including new content” (p. 272) but more concretely, entails a paradigmatic shift in instructional style in order to be effective. Understanding the relationship between knowledge and practice is a key factor here. The previous discussion entailing faculty acceptance is only a portion of the problem when it comes to the integration of ESD. Lambrechts, Mula, Ceulemans, Molderez, and Gaeremynck (2012) make the point that traditional higher education curricula focus more on the “transmission of knowledge, rather than in the facilitation of critical, innovative, and creative learning spaces” (p. 3).

### **The place of discourse and objectivity**

The terms or jargon used by disciplines in those creative learning spaces, comprise their discourse and gives these areas their distinction (Gee, 2011). UNESCO (1997) argues that, “the literacies of science, ecology and development will be as essential to comprehending the world as were the traditional skills of reading and writing” of past centuries (p. 17). This brings to light the normative value of what view of the environment is thought *most* important. Without a shared understanding of intent and commonly used terms, it is unlikely that any consensus will be reached in the field. Hajer (1997) makes a cogent point when stating that, “environmental discourse is time- and space-specific and is governed by a specific modeling of nature, which reflects our past experience and present preoccupations” (p. 15). If the assumptions and arguments are rooted in personal systems of understanding and construction, then it is necessary to address the issue of implementing a knowledge system grounded in changing behaviors based upon a particular view of the relationship of humans and the environment.

Carolan (2006) rightfully points out that, “practically speaking, scientific knowledge is an amalgamation of both facts and values” (p. 229). This is often ignored, with the dominant view of science erroneously based on objective facts. Carolan (2006) further argues that this is wrongly understood as, “a way of knowing that rests upon objectivity and precision and that it stands outside of history” (p. 229) when in fact that is simply not possible. Understanding the process by which meaning is constructed or terms accepted, is a vital key to understanding organizational dynamics, potential conflict and agency. Discourses—verbal and performative—are often created by more powerful or dominant persons/organized bodies (Bourke & Meppem, 2000; Tregidga, Kearins, & Milne, 2013).

Once ownership and seeming objectivity of meaning is established, it is typical for a loss of contingency. This becomes a practical matter when determining learning outcomes. Steward (2010) speaks of the University of Maryland Climate Action Plan Work Group's drafting of learning outcomes for sustainability education. He suggests that while their learning outcomes may be considered too sweeping to include in general undergraduate education, on the other hand, they might not satisfy environmental education proponents. However, adding the outcome that students will "live sustainably" may be crossing a line previously ignored by higher education. What happens when a particular moral stance is adopted in the classroom? And is this something new or simply something we should now address?

### **Constructing values**

Science is not always in the business of making everyone happy. Disassociating values in order to make wholly a problematized issue objective is not possible. However, throughout history, the isolation of facts and the reduction of whole systems (and populations) into fragmented, and seemingly separate pieces of a puzzle have been common (Capra, 2004).

Values are essentially operationalized when a topic is selected for study. Policy is inherently value-driven, striving for a position within both the scientific community but also larger socioeconomic framework (Adom̄bent, 2013) and increasingly, cultural arenas (Soini & Birkeland, 2014). Carolan (2006) used the United States' defensive stance, refusing to sign the Kyoto Protocol as an example of economic values trumping the scientific community's call to arms regarding anthropogenic behaviors and climate change.

Created in 1997, the Kyoto Protocol is an agreement established per the United Nations Framework Convention on Climate Change. The goal in creation was the

recognition of the green house gas (GHG) emissions burden of industrialized countries and the enlistment of their (industrialized countries) commitment for reduction. Utilizing both internally derived mechanisms for change, as well as market-based options such as emissions trading, the potential for economic losses were noted (Kyoto Protocol, n.d.). This potential economic toll was the primary rationale for the U.S. administration to refuse ratification. Then, President George W. Bush came into office, rejecting the Protocol as too restrictive to growth and commissioned a working group. The result was an announcement in February of 2002, pronouncing an internalized, U.S. course of action called the Clear Skies and Global Climate Change Initiatives. These proposed initiatives could accomplish “comparable” goals to the Kyoto Protocol with “market-based approaches” by 2018 along with reducing “emissions of the three worst air pollutants by seventy percent,” and committing American to cut “greenhouse gas intensity” by eighteen percent (Environmental Protection Agency, n.d.).

This alteration of view and solution creation, is an example of value imposition on *facts* or *proof* and the subsequent entanglement we find ourselves in when attempting to interpret information or make decisions. Carolan (2006) argues that science itself is “not about proof” (p. 229). Rather than expect to “see” in absolutes, what we should attempt to do is look *for* process. If we accept approximations, we may recognize that the answers we need lie in existent, but largely ignored, interconnected relationships that create the webbing of life and planetary processes. These connections vary according by individual, community, ecosystem, and discourse and some argue that the implied moralizing elements involved in a discussion of sustainability or sustainable development lend themselves to potential failure (Dannenberg, Hausman, Lawrence, & Powell, 2012). Regardless of the perceived morality, does that mean that the U.S. has no obligation to consider the global implications of

excessive GHG emissions? The U.S. generally seeks to find business practices and individual and community behaviors that work within its specific cultural casement. However, the refusal to enter into a joint commitment to limit emissions signifies, more importantly, a maintenance of attempted western hegemony by placing ourselves and our consumption and waste habits above the collective whole.

### **Evolutionary values**

Wilson (2002) argues that our studied ignorance of environmental concerns is hard wired. Using sociobiological principles he states that the, “human brain evidently evolved to commit itself emotionally only to a small piece of geography, a limited ban of kinsman, and two or three generations into the future” (p.40). He goes on to say that for millennia, this shortsighted tactic of ignoring that which was too far ahead to effectively plan for, or those too distantly related was cast aside as irrelevant for survival. This played out as “those who worked for short-term gain within a small circle of relatives and friends lived longer and left more offspring—even when their collective striving caused their chiefdoms and empires to crumble” (Wilson, 2002, p. 40).

This conflict in values is exemplified by marketing companies, as well as critics of environmental education, who view the proposal of sustainability and environmental stewardship as anti-capitalistic—part of liberal agenda meant to create a citizenry of activists. The conservative think tank, Competitive Enterprise Institute (CEI), called environmental education the “liberal indoctrination [of] children” (Crouch & Abbott, 2009, p. 53). Sanera and Shaw, as cited in Crouch and Abbot (2009), argue for more responsible teaching of environmental issues and are especially upset by mainstream sustainability focused education

that according to them lacks an “emphasis in individual property rights and anti-regulatory or free market solutions to environmental problems” (p. 53).

Market economies and sustainability are at odds according to most economists or even educational theorists. Postma (2002) writes about the dangerous insertion of morality into educational stewardship or sustainability foci. He intimates that environmental education is state controlled moralizing and says that, “the liberal state (and the school as one of its institutions) should not promote a particular morality in a so-called conception of the good” (p. 42). He goes on to say that the state “actively imposes values of sustainable development into its (future) citizens” which is at odds with liberal democracy (Postma, 2002, p. 43). His argument rests on the fact that by virtue of definition, environmental policy or education is not neutral and therefore, when instructing, schools are interfering with personal choice and that this form of moral education encroaches on the private sphere of citizenry.

Issues pertaining to the environment are complex, rooted in social as well as natural systems, sometimes imbibing a certain sense of moral processing. The combination of behaviors and normative values applied creates strife with consensus sometimes sought over real change. Much of the dispute is created by this lack of cogency in defining terms, problems, and actual frameworks for application or instruction (Jordan, Hmelo-Silver, & Gray, 2008; Miller et al., 2008; Rätzl & Uzzell, 2009). With the arguments taking place over why, or why not, we should teach ESD, it makes sense that little forward progress has been made in creating a public of environmentally literate *and* capable, action-oriented, ethical individuals.

Ultimately, the idea that the language utilized in framing environmental educational discourses is rooted in normative values and defined in singularly constructed moral behavior is a valid consideration. Gilles Deleuze and Félix Guattari note that:

The various forms of education or ‘normalization’ imposed upon an individual consist in making him or her change points of subjectification, always moving towards a higher, nobler one in closer conformity with the supposed ideal. Then from the point of subjectification issues a subject of enunciation, as a function of a mental reality determined by that point. Then from the subject of enunciation issues a subject of the statement, in other words, a subject bound to statements in conformity with a dominant reality. (1987, p. 129)

Solutions are not likely found in one line of inquiry or one population. ESD knowledge is transdisciplinary by nature (Carter & Simmons, 2010; Lidgren et al., 2006), therefore achieving any degree of cohesion in instruction, practice or adoption of sustainability principles entails a transgression of disciplinary boundaries for effectiveness. The creation of this knowledge is: contextually constructed; dependent on both academic and non-academic stakeholders; beholden to differing value rationalities; and recognizing of the need for new evaluative criteria and the importance of tacit outcomes (Polk & Knutsson, 2008).

For Chatterji and Shapiro (2011) this process of construction allows for productive intervention, allowing an enhanced focus on the localized community. Thinking and acting can merge as “critical approaches to knowledge often reproduce the very dimensions of the normalized practice of knowledge production it critiques” (Chatterji & Shapiro, 2011, p.

170). The real desire is to circumvent the usual disconnected nature typical of systems of institutionalized knowledge.

The larger campus community—including external stakeholders such as local, off-campus individuals and civic groups—has to be part of the production process as well as source of inspiration for information—providing relevance for students and the HEI. Relevancy and ownership of that information is critical, as evidenced by the pro-environmental research undertaken in recent years (Birdsall, 2010; Jensen, 2002; Kollmuss & Agyeman, 2002). Jickling and Wals argue in Rätzzel and Uzzell (2009) that “Only a thin sliver of the definitions had the capacity to lead citizens to challenge fundamental assumptions. But in the larger picture, we might ask, who is most successful in co-opting the discourse? Whose interests are being served?” (2005, p. 251).

Fundamental questions regarding knowledge, and the best practice for providing it, must take into consideration that there are much broader social and political context of causality and consequences for environmental concerns. Important to note here is that knowledge is not an object or thing but rather an ongoing, active process of engagement, never fully realized, continuously becoming (Cole, 2011; Deleuze, 1987; Rätzzel & Uzzell, 2009).

### **Affecting real change: When knowledge leads to action**

The process of translating that communicated knowledge into practice is still at issue and of interest for this research project. When it comes to environmental education, it appears that it may minimally affect behavior change (see Hungerford & Volk, 1990; Marcinkowski, 2004). Additionally, the relationship between communicated message and

action is much more complex. Therefore, an examination of the gap between rhetoric and pedagogy may be required.

Kollmuss and Agyeman (2002) undertook a foundational meta-analysis of 128 pro-environmental behavioral studies. Looking at such variables as knowledge of issues, familiarity with the problem, knowledge of action strategies, etc., they addressed the importance of a strong internal locus of control, or perception of ability to bring about change, when confronted with these issues. Their work, as well as others (see Eames, Bolstad, & Cowie, 2008), indicates that coursework, or knowledge of environmental issues does not necessarily indicate the potential for pro-environmental behavior. The framework created by Kollmuss and Agyeman (2002) for environmental behavior, notes that among other things, old behaviors or habits, may create a significant barrier to change. Additionally, they agree with others, (see Fietkau and Kessel, 1981) who decry a direct relationship between knowledge and action when it comes to pro-environmental behavior. They suggest that with the degree of interplay between “environmental knowledge, values and attitudes, together with emotional involvement” comprises more accurately, a pro-environmental consciousness (p. 256).

Due to the complexity of environmental concerns (e.g., Kalafatis, Pollard, East, & Tsogas, 1999; Luck & Ginanti, 2013; Roberts & Bacon, 1997; Zimmer, Stafford, & Stafford, 1994), the authors note that the degree of unease may be more predictive of some behaviors than others. In turn, certain aspects of environmental concern may influence specific behaviors (Kollmuss & Agyeman, 2002; Sahin, Ertepinar, & Teksov, 2012).

Taking direct or indirect action, as well the terminology “taking action” rather than “behavioral change” are thorny, yet often ignored subject areas. Birdsall (2010) makes

distinctions between them, noting that students need explicit instruction and empowerment in order to understand *how* to act. Simply being made aware of the information does not determine a marked shift in values or behavior alteration. Tilbury, Keough, Leighton, & Kent's (2005) work also supports this view that ownership and individualized processing of the material increases the likelihood for action.

Birdsall (2010) calls attention to Jensen's (2002) identification of four dimensions of knowledge that "could be possible "pre-conditions" that lead to taking action and could also be used as lenses through which to consider an environmental issue" (p.68). Jensen's (2002) dimensions take into consideration the work of of Kollmuss and Aygeman (2002), and consist of the following:

- 1<sup>st</sup> dimension: knowledge of the problem;
- 2<sup>nd</sup> dimension: knowledge about root causes—what socio-economic or cultural issues contribute to the problem?
- 3<sup>rd</sup> dimension: Strategies for change--How can we alter the course? and
- 4<sup>th</sup> dimension: Personal vision of the future—what happens next?

While easy to see logical parallels, producing a student that envisions his or her own actions as changing the course of social or environmental problems is not likely given the process of traditional education (Jickling & Wals, 2008; Stevenson, 2007).

A central issue in education and the adoption of sustainability in classrooms or pro-environmental behavior, is how individuals view themselves in the larger global realm and dominant cultural narrative of western power. Being able to deal practically (and honestly) with the social and environmental issues we face today is a critical component. As such, the manner in which students are engaged with the provided information matters immensely.

Räthzull and Uzzell (2009) advocate that engagement with the real world by “asking critical questions” that challenge dominant paradigms and existent structures, reformulating as we go.

This is the “strong” approach to environmental issues as opposed to the “weak,” that maintains the status quo, believing that someone/thing will bring about the necessary change and that an individual’s actions are moot. This discussion illustrates the issue of awareness begetting action that researchers have found in both middle school studies as well as adult populations (Jickling & Wals, 2008; McBeth & Volk, 2010; Stevenson, 2007). While students are aware of environmental issues, they are either disinterested or unable to process the necessary steps to undertake real action to change behavior or seek a solution (McBeth & Volk, 2010).

Part of the problem related to these findings, has been attributed to the use of abstract, irrelevant, “as if” situations as opposed to authentic identifiable situations that the students can relate. This, along with increasing the democratic structure in goal formation and problem solving is needed for students to be critically connected with the information as not simply passive receivers, but also constructive creators of information (Räthzull & Uzzell, 2009).

Engaging in a more democratic system of education, grounded in holistic thought and practice, decreases the chances that we will simply continue to reach a consensus on environmental issues, but rather a reimagining of the problem and solution in front of us. Carolan (2006) notes that the time of passivity is over if real progress is intended in the direction of environmental stewardship. Specifically, he addresses the notion of considering the environment to be a passive receptacle for waste, degradation or use and calls for the

additional recognition of the active spatial relationships we engage in with that natural environment.

### **Problem oriented, project based**

Time and space give educators and students problems in the realm of ESD. Researchers argue that long term planning is negatively impacted by alarmist messages and that it is, “far more effective to present problems as manageable through responsible conduct and, wherever possible, put forward a realistic solution and a means to take preventative action” (UNESCO, 1997, p. 18). In order to deal with this effectively, Yasin and Rahman (2011) advocate the use of problem oriented, project based (POPBL) approaches to ESD. This exemplifies the dominant push towards an inter- or trans-disciplinary, systems focused pedagogical style in ESD.

ESD requires that ideas become practice and practice becomes action (Fein, 2002). Part of the larger issue in integration approaches is whether having that one course as capstone or seminar with a sustainability theme, actually matters at all to the student’s perspective regarding sustainability. For that reason, Polk and Knutsson (2008) argue that knowledge production should be participatory focusing on collaboration and engaging in a conversation about value rationalities within ESD—what matters and why should it be important to understand?

Finding workable solutions to real problems is something that most teachers do not emphasize as being in the realm of the possible for students. In 2001, when the No Child Left Behind Act was signed into legislation in the United States, “nonessential” information such as environmental knowledge, was increasingly marginalized in the classroom. If it was not on the test, teachers were loath to spend time on it due to the high pressure of new testing

standards (Chepesiuk, 2007). This dearth of environmental knowledge follows students into higher education.

The approach for adopting sustainability within the classroom or across the institution is of primary interest (Holmberg et al., 2008; Sharpe & Breunig, 2009; Lidgren et al., 2006). Moving beyond description and definitions to one that motivates, engages and creates actors in their surroundings means engaging active learning (Nursesey-Bray, 2009). Nursesey-Bray (2009) argues educators need to ‘shake the discursive complacency’ brought on by the overuse and ambiguous definition of sustainability. Environmental education in general is meant to be holistic, “hands on, minds on” learning (Carter & Simmons, 2010). Using reflexivity, administration, faculty, students and larger community may admit that not only is education a continual process, but also one that is not value neutral. Critique, social action and engagement are all facets for enhancing the experience of learners.

Reflexivity encourages the individual to think about the impact of self and actions on the environment both locally and globally (Bourdieu & Nice, 2004). Addressing personal and cultural value systems, instructors engaging students critically may make them aware of how their decisions are actually constructed. Increased understanding of interconnectivities between self, problem and discipline is also needed for creating engaged learners and active citizens (Haverkos & Bautista, 2011). Awareness of interconnectivity increases the likelihood that a large-scale solution will be found rather than a short-term, localized solution (Nursesey-Bray, 2009).

### **Teaching for transformation**

Understanding the need to find a workable solution is only part of the problem. Without real action, we are still only educating *about*, rather than *for* sustainability.

However, not all educators, politicians, and cultural commentators agree that action is actually the desired result. And the debate quietly initiated by Jickling and Spork (1998) illuminated the inherent tensions of education for sustainable development, as it rubs against our traditional understanding of education. Standing on what some term the liberal side when it comes to philosophy of education (Ferreira, 2009), Jickling and Spork (1998) among others (e.g. Dillon & Teamey, 2002; Sauve, 2002) counter that as educators shift from the initial base of environmental education to a more sociocultural focus, attempting to create and navigate discourses basing the understanding on interchanges and relationships between the natural as a more “regressive” tract and more progressive sociocultural focus (Stevenson, 2007). For many, this becomes inherently political and problematic.

The awareness of teaching as a political act colors the following discussion of placing the self in the subject. For example, Jickling and Spork (1998) as quoted in Ferreira (2009), couch their argument in the use of terms indicating the preferred method for instilling knowledge—noting that the “prepositional use of ‘for’ ultimately leads, therefore, to either a literal or programmatic interpretation which is, in our view, deterministic” (p.613). Fien (2002) counters this, and stands on a more critical edge of educational philosophy when he addresses the inherent subjectification and removal the self in research, forgoing the ethical and moral dilemmas in lieu of the perfunctory. Some might argue that that disassociation of researcher and educator is precisely why we are unable to right the ship. Social action and engagement are encouraged through the recognition of connection as well as diversity, providing deep learning possibilities and an increase in personal capital development (McMillan & Vasseur, 2010). Finding meaning and relating it to self and the environment through intentional action is vital if our goal is truly to educate.

Education of the whole person with a holistic approach of interdisciplinary studies is also thought to be a key to increasing meaningful linkages with the material (Haverkos & Bautista, 2011). If that is true, understanding how to do that most effectively with ESD is necessary. To that end, the development of both ecological and social capital is possible when aware of the relevant stakeholders (De la Vega-Leinert, Stoll-Kleeman, & O’Riordan, 2009). Bourdieu’s (2003) work identifying the domination of certain groups in stratified space is useful in this context. Students should be encouraged to examine themselves and others in relation to their ability to obtain, alter and affect not only their immediate environment, but also understand their impact writ large. Bourdieu’s regard for development of capital (Lareau, 2003) is relevant, considering that our resource extraction and usage affect the world around us dramatically in marked disproportionality.

This point is emphasized by De la Vega-Leinert et al. (2009), who they note that there should be a necessary extension of sustainability education into the realms of civil liberties, peace and poverty. Sherren (2005) also addresses the need for an expansive integration of normative concepts innate to producing relevant and meaningful knowledge. She includes: a liberal education, rich in dialogue with an emphasis on life-long learning, an interdisciplinary approach valuing different methodological strategies and accompanying disciplines, cosmopolitan vantage point, rooted in cultural relativism with heightened consideration and empathy for the ‘other’, and localized, regional and global conceptualization of citizenship or civics.

Making the connection between developing country poverty rates and the amount of water consumed by the average American daily might be challenging, but it is necessary for engendering a sense of global community. For this reason, discipline lines may need to lose

their currently sharply defined edges as questions in the two hundred level ecology course may be helped by the humanities. Problematizing ordinary concepts such as the lunch eaten today, garbage taken to the curb or mode of transportation taken to school will be useful in many arenas to call attention to larger issues that are not limited to one specific area (Orr, 2005a).

Some argue that the whole institution is part of pedagogy. And as such, conceptualizing an institution-wide sustainability curriculum involves the dissemination of information, discovery and creation of new knowledge (Lozano, 2011; Stewart, 2010). This sometimes includes understanding the role the physical environment may play in the overall educational experience of the students.

### **Physical environment: Sustainable building and HEIs**

Understanding how and why HEIs have taken quickly to the idea of sustainable building design and facilities efficiency necessitates a discussion of the larger building construction momentum in American society (Carlson, 2012; Wedding, 2010).

The green building industry, though relatively new, has done exceedingly well in sharing their objectives with the public—especially HEIs. The U.S. Green Building Council created the LEED program and officially launched in 2000 and touted as, “a voluntary, consensus-based, market-driven program that provides third-party verification of green buildings (Foundations of LEED, 2009, p. 3), LEED projects have been constructed and certified in 150 countries (Murphy, 2015.). Based upon a flexible rating system that is heavily oriented towards documentation, buildings may achieve a silver, gold or platinum rating, with the greatest amount of certifications falling at the least ambitious, silver level (Cidell, 2009). The additional aspect of governmental legislating energy efficiency increases

the push towards generalized LEED adoption for all public building projects of substantial size—including those on higher education campuses.

**Policy Pressures: Legislating design and culture on campus.** Federal policies and “green” stimulus monies supporting national weatherization projects for residences and commercial structures (Day-Biehler & Simon, 2011; The White House Executive Summary, 2011) have been passed in recent years, as have significant requirements for public building efficiency. In North Carolina, legislators have mandated that all public buildings over twenty thousand square feet be constructed sustainably. This legislation specifically requires colleges and university building to use “sustainable, energy efficient, methods that save money, reduce negative environmental impacts, and make employees and students more productive” (General Assembly of North Carolina, 2007). From a discursive standpoint, this initial sentence in this Senate bill demonstrates that the primary consideration for policy makers, builders and corporations is efficiency and economics.

Efficiency looks good on paper and great on university web sites. As Carlson (2012) notes, campus administration and bureaucratic entities have bought into the need for displaying their “sustainability credentials” (p. 183). This is not limited to a few, as attested by the acceleration of LEED construction on higher education campuses from eight in 2000 to over 1500 in 2008 (Carlson, 2012), and these numbers continue to increase. One potential contributing factor to this meteoric rise may be the text of the AAUPCC climate neutrality pact that clearly states that one option for adoption is to, “establish a policy that all new campus construction will be built to at least the U.S. Green Building Council’s LEED Silver standard or equivalent” (AAUPCC, n.d., para. 6). While LEED is a voluntary system, and not the only one available for use, it has become the standard bearer in green building and one

that denotes at least a facilities commitment to reducing energy usage. This is an element of transition requiring limited behavioral alteration. In fact, the creation of “intelligent” buildings with enhanced features such motion-sensing lighting for example, reduces the interactions necessary for the occupant and creates an increased level of passivity within that environment, potentially reducing environmental awareness and responsibility (Ehrenfeld, 2008).

This element of passive or active acceptance and action extends to the larger campus community and Lorenzen (2012) contends that the increase in green building is the large-scale production of values on higher education campuses. The question then arises—is this a value of environmental stewardship thru modeling sustainable behavior or valuing the economic gain garnered through energy savings and the ability to publicize the sustainable building efforts? What additional benefits may be reaped, and by whom?

These efforts are assisted by directors, managers or other administrative heads, that preside over the office of sustainability, or other similarly named campus sub-entities. There are close to four hundred campuses that have active sustainability offices across the United States (The Princeton Review, n.d.). This increased activity and organized event planning, program management and campus visibility have changed the culture of higher education. Sustainability offices are holding “recycling rallies,” teaching students to compost, and in many cases, acting as administrative project managers for the sustainability push on campus—some of which involves intense coordination with upper level administration, facilities directors, architects and project managers in the construction of new buildings.

Campus projects and many institutions’ seeming insatiability for new construction may conflict with the message of sustainability. What it does not conflict with is the building

industry (Sightlines, 2013). By some estimates, the United States green building industry was a ten billion dollar industry in 2005 (Wedding, 2010). It is expected to reach as high as 145 billion by the close of 2015 in new commercial construction (Katz, 2012). Along with higher education, the federal government's General Services Administration (GSA) and other federal and state offices are fueling this push. The GSA is the largest owner of real estate in the United States and they have committed to ensuring that all facilities are compliant with LEED criteria (Wedding, 2010). Of interest regarding this increase, is a survey conducted by McGraw Hill Construction (2013). They surveyed construction firms from sixty-two countries and found among other things, that the green building, as the, "right thing to do," fell from 42% in 2008 to 26% in 2012.

Ehrenfeld (2008) notes that as a group, we need to engage in recognition, reflection and reinvention in order to alter the course of largely unsustainable lifestyles. Educators and HEIs are well placed to encourage that kind of reflection. A problem in that discussion involves a lack of awareness. When we are unaware of the pressures or have become willingly impassive, change becomes difficult. The increasingly intelligent design of contemporary buildings is not helping with this problem, as control on the part of the occupants is reduced. Brown, Dowlatabadi, and Cole, (2009) argue that balancing this effect by making feedback loops include some form of active educational instruction necessary to encourage not just awareness but also engagement. Adding more emphasis and constructive help for achieving credit for the innovation credit involving related building curricula would be a beneficial LEED criterion change, that would push us towards interaction with the building as well as each other.

Green building industry critics have raised questions regarding occupancy behaviors in more efficient buildings. Since qualitative post-occupancy studies focusing on behavior rather than simply thermal factors or air quality are not common (Khalil, Husin, Wahab, Kamal, & Mahat, 2011) answers to the question of behavior alteration and engagement are still emerging in relation to sustainable building (See Bamberg & Möser, 2007; Hines, Hungerford, & Tomera, 1986; Peterson, Shunturov, Janda, Platt, & Weinberger, 2007).

An element related to understanding the effects of sustainable features on occupants, is the degree to which they are exposed to building systems requiring interaction or at the very least, awareness. In an academic setting, Brown, Dowlatabadi, and Cole (2009) point to the importance of communicating responsibility for individual actions. Experimental design, exposed systems, instructional signage, and energy meters are some modes of communication that have an impact on behavior (Brown, Dowlatabadi, & Cole, 2009; Peterson, et al., 2007). Knowledge and awareness empowers, thus contributing to action. Habits are ingrained, and directly related to peer pressure and larger social norms (Ehrenfeld, 2008), so while LEED moves us toward an increasingly efficient construction market, it limits the required change in these habits and behaviors by largely suppressing the sustainable features of the structures on campuses (Orr, 2002; Walker, 2011).

Students are especially affected, so they should be involved in design conversations (Link, 2012). How might this impact their understanding of environmental issues, thermal units or resource consumption? Link (2012) argues that in addition to those potential benefits, by involving them in these conversations, we are demonstrating the value of the democratic society, potentially turning out an active citizen that feels capable and justified in supplying input. Who decides what features are visible, educable or worthy of exclusion

is part of the exchange between builders, design professionals, administrators and the LEED rating system that impacts the people who occupy those spaces? Given that potential impact, campus administrators may need to rethink the common dynamic related to building design.

Negotiating policy, budgets and pressure from campus stakeholders and alumni makes decision-making complicated and politically charged, but necessary for successful design (Valdes-Vasquez & Klotz, 2012). Illustrating this, Rappaport semi-joking refers to the college president “rolling his eyes” at the impassioned suggestion that a wind turbine be placed on the administration building (2008, p. 9).

Underlying this entire discussion is the assumption that smart, efficient building design or a wind turbine perched atop an administration building may not be enough but encouraging action is not easy and sometimes makes people uncomfortable when their individual role is questioned. Compounding this is the inherent difficulty in successfully navigating this built landscape due to it being, “part-human, part-technology, part-semiotics and part-architecture” according to Rice (2011, p. 34).

The larger question of what constitutes sustainability is embodied here as well. A human construction, often considered in that binary, yet murky obfuscated territory impinging on moralizing, sustainable construction on higher education campuses is a complex interchange of people, power, policy, and the environment. The complex role that stakeholders such as students, faculty and administration play in this decision process has the potential to add to the broader notion of education and implicit campus curriculum.

### **Campus environment: Implicit knowledge and informal learning**

The physical environment provides a great deal of information as does informal learning communities found on HEI campuses in the form of student groups and miscellaneous institutional initiatives and activities. Khataybeh, Subbarini, and Shurmann, (2010) note that the bulk of learning takes place in what would be considered “informal” education. They go on to argue that ESD provides a globally sensitive understanding of equity issues as they relate to resources and the basic relationships existent between economics, the environment and the people that inhabit the world, creating networks of understanding.

These networks of understanding, according to Burandt and Barth (2010), serve as a process of integrating, “non-academic social knowledge or considering conflicting value systems” (p. 659). This process should be fluid and dialogic with both internal and external stakeholders having a voice in the construction of knowledge (Lidgren et al., 2006). Carolan (2006) argues that by taking, “a different route: by opening those doors up to include a wider variety of stakeholders and in doing this recognize that knowledge production is not something that occurs in only specialized space but across the social field,” we increase the ability to think creatively and deal with heightened complexity (p. 234). This is continued beyond the curricular level when Polk and Knutsson (2008) posit that, “tacit, informal, interpersonal, and sometimes even unconscious forms of mutual learning are central to increasing insight and establishing the long term relationships that are needed to build institutional and individual capacity for social change” (p. 651). Their argument extends into campus philosophy and beyond. This idea of beyond may be thought of as the “post-normal” processes for knowledge generation increasingly advocated for more thorough treatment of

the contemporary environmental problems facing us today (Burandt & Barth, 2010; Carolan, 2006).

Given the apparent difficulties in affecting an overall shift in higher education institution sustainability at *both* the facilities and curricular level, Stephens and Graham (2010) offer a mediated solution in the form of a transition management framework, used to understand and promote transformation of the “multi-scale, multi-actor, long-term, process-oriented approach and analytic framework” (p. 611). While admirable, they note that it largely ignores the basic heterogeneous cultural components inherent in universities as well as the actual impact leadership has on the learning process (Stephens & Graham, 2010).

### **Institution-wide infusion of sustainability principles**

Limits to successfully implementing a sustainable ethos throughout a higher education institution are well documented and logical on many counts (Sahin, Ertepinar, & Teksoz, 2009; Sharpe & Breunig, 2009). While shifting commonly held values for autonomy and discipline segregation is difficult, it should not be viewed as impossible. For that reason, issues related to institutional structure, faculty, administration and larger community acceptance have been addressed (Berqist & Pawlak, 2008; Novo, Murga-Menoyo, & Bautista-Cerro, 2010).

Because higher educational institutions are largely decentralized bodies that find crossing discipline lines administratively messy (De la Vega-Leinert et al., 2009), increased complications arise. Encouraging multiple methodologies, the traditional system of educational organization is coming into question (Orr, 1994; Orr, 2005a).

Of particular interest for this project is a further understanding of how individuals collectively communicate and function as enlightened research and teaching institutions.

How best can we, as educators, contribute to a growing ESD knowledge base through appropriate provision of necessary information (Novo, Murga-Menoyo, & Bautista-Cerro, 2010)? Understanding best practices for imparting information and creating an active, critically thinking citizenry is part of the goal for this research project. Studies demonstrate that knowledge *about* sustainability is not enough—that we must do more. The need to do more is understood. What seems less clear however, is how to create a workable strategy for providing necessary information to students of all ages so that they may not simply *know* what to do, but that they may also act on that knowledge.

### Chapter 3: Methodology

A mixed method research design was selected to explore the complex interrelationships between information provision and ensuing values, perceptions and behavior change among college students. A critical constructivist framework was applied and it included qualitative and quantitative data collection methods in a concurrent embedded design strategy. Using a phenomenological hermeneutic frame with ethnographic data collection methods, this involved an iterative process of analysis and was undertaken at two campuses of higher education in the Southern United States over the course of eight months.

This descriptive exploratory project allows for multiple reality consideration within the data collection process (Onwuegbuzie, Johnson, & Collins, 2009). A combination of self reported survey data, participant observation and semi-structured and unstructured interviews sought to uncover some of the particulars involved in student, faculty and administrative meaning construction that may—or may not—lead to beliefs, attitudes and value construction for students. Taking a constructivist approach to understand value and meaning-making in this situation does not imply that there is not a “right” process for information delivery or usage of information. Given the complexity of interactions with communicated materials in text and verbal form, along with the ambiguity inherent in the term *sustainability*, a project framed in constructivism, and assisted with critical discourse analysis, would flesh out underlying, largely ignored interconnections on these campuses that might be useful for examination and further extrapolation. Because human connections form the basis of our social networks and institutional organizations, increasing our understanding—or even

becoming more aware of what we do *not* understand in the case of ESD—may enhance our ability to see these assemblies and improve our delivery of information on HEI campuses (Ferrer-Balas et al., 2010; Lozano, 2006).

### **Site selection**

The selection of these institutions was based on the self-reported ASSHE STARS profile of Institution Two and the publically identified curricula focus of Institution One. Institution One indicates that they offer a significant number of courses with sustainability content, environmental sciences and studies minors and interdisciplinary graduate degree in sustainability. Institution Two indicates that they currently focus more on facilities management than coursework based on STARS data as well as self-reported website information. Access to these institutions was preliminarily granted and contacts at both Institution One and Institution Two expressed interest in understanding how their practices translate into student understanding in the area of sustainability.

### **Quantitative design**

The manner in which students receive information, process and apply information related to sustainability was addressed with the use of a survey questionnaire utilizing Likert scale grading. It was administered electronically in order to assess the practices, perceptions and values of students at the two institutions. The proposed target population included a sample of students at Institution One and Institution Two respectively.

It was anticipated that both institutions would allow access to all currently enrolled undergraduate students. Institution Two offered to grant complete access to their entire student population, estimated at 2100, while Institution One indicated that access to all 4400 undergraduate students would be allowed. Sample size was to be adjusted to meet the needs

of each institution as well as provide for an adequate sampling of the student population. A sample of 250-300 students at each school was desired, with expected response rates of 100-150. Ultimately, Institution Two provided 478 email addresses and Institution One supplied a total of 659 between the office of sustainability and faculty assistance.

The Institution One survey (Appendix C) was ultimately comprised of thirty-three questions divided into areas that encompassed inquiries regarding campus activities, modes of transportation, classes taken with sustainability content, etc. as well as personal values and behaviors. Institution Two's survey (Appendix D) included thirty-eight items with the same content of the Institution One survey plus the inclusion of campus-specific questions. Each survey consisted of an introduction stating the purpose of the study, an informed consent statement, and instructions for completing the survey.

With the exception of demographic information and one dichotomous question, the bulk of both surveys were coded as five point Likert scales, anchored by strongly agree and strongly disagree. Radio buttons were used in the survey design that required the respondent to choose a single selection for each item. Some questions allowed additional responses or contained conditional selections for the provision of further information. The questionnaires were deployed utilizing the institutional research survey platform through Appalachian State University, ensuring anonymity of the respondents and allowing for simple exportation to the statistical package for the social sciences (SPSS) software for testing and analysis purposes.

A codebook was created for scoring responses and assisting with identifying areas of significance (Creswell, 2012). This codebook construction created specific identifiers for individual survey questions as well as assigned numeric values to the Likert scale items.

Values of one to five were used in accordance with the survey items and are explained as follows:

- (1) Strongly Agree
- (2) Agree
- (3) Neutral
- (4) Disagree
- (5) Strongly Disagree

Campus assistance in terms of access to student email lists was agreed upon prior to the survey design. An administrator in the Student Affairs department at Institution Two was contacted in November of 2014. He provided an email list of 478 enrolled sophomore and junior level students. The survey was initially deployed directly in April with three reminders emailed to the same list of students over a period of six months. From that list, one hundred and forty-one responses were received. That number was within the anticipated target response range.

Difficulties occurred when attempting to deploy the Institution One survey. Requests for a list of student emails were unmet. Ultimately, the Office of Sustainability forwarded the survey link to four hundred and seventy-eight campus listserv members in December 2014. Additionally, 181 emails were sent to former first-year composition students by a faculty member. A request for an email reminder was made to both the Office of Sustainability as well as the faculty member in late December. One hundred and six total responses were recorded for Institution One. Due to the timing and anonymity, it is unclear as to which avenue of deployment elicited the most responses. Given the usage of listserv and former student relationships, it is anticipated that the sample is less random than initially hoped.

## Qualitative design

Ethnographic efforts were employed and consisted largely of semi- and unstructured interviews that were conducted with identified and willing staff, administration and faculty. This purposive snowball sampling process (Creswell, 2012) included administrative personnel identified as involved in the creation of specific programmatic areas or facilities management related to sustainability. Personnel in campus offices of sustainability, including student interns and campus activity leaders were contacted for potential interest as well. Twenty interviews were planned at each school, with no more than three individuals selected from one area. Due to issues of access, respondent interest and time, 14 interviews were conducted at Institution One and 12 at Institution Two. Each interview lasted between 30 and 45 minutes and at times, longer than one hour. The interviews were conducted primarily in person and recorded for later transcription in most cases (see Appendix B for sample questions). Follow up emails and/or telephone calls were also utilized to clarify information. Tables one and two provide a general overview of the interviewee demographics. Specific titles that would identify individuals have been avoided to retain anonymity.

Table 1  
Institution One interviewee demographics

<b>Area</b>	<b>Gender</b>	<b>Age</b>	<b>Title</b>
<i>Administration</i>	F	40-50	Director
	M	50-60	Director
	F	20-30	Assistant director
	F	50-60	Associate director
<i>Staff</i>	M	40-50	Outreach and Instruction librarian
	F	40-50	Academic liaison

<i>Faculty</i>			
	F	50-60	Associate professor
	M	40-50	Assistant professor
	M	30-40	Assistant professor
	M	40-50	Professor/ Chair
	M	40-50	Assistant professor
	M	50-60	Professor and dean
<i>Facilities</i>			
	F	40-50	Turf manager
	M	50-60	Senior project manager

Table 2  
Institution Two interviewee demographics

<b>Area</b>	<b>Gender</b>	<b>Age</b>	<b>Title</b>
<i>Administration</i>			
	M	40-50	Director*
	M	40-50	Vice President of Administration
	M	30-40	Director
	F	30-40	Assistant dean
<i>Staff</i>			
	F	20-30	Coordinator*
	M	20-30	Mentor, student life
<i>Faculty</i>			
	F	40-50	Special programs
	M	40-50	Professor
	M	40-50	Professor
	M	40-50	Assistant professor
	F	50-60	Professor/ Chair
	F	50-60	Professor/ Chair
<i>Facilities</i>			
	M	40-50	Director*
	F	20-30	Coordinator*

\*indicates areas of shared focus

Limited participant observation conducted on both campuses assessed student and faculty engagement and practices as they relate to campus activities. While provision of sustainability-related information is of interest for this research project, the willingness of students and other associated faculty and staff to act on that information, requires that regular

behavior and activities also be assessed, not simply those directly related to environmental or sustainably-focused content. Approximately 20 hours of observation took place on each campus over the course of the project. The resultant field notes provide general information related to campus culture and student actions.

The general state of the physical campus environment was also investigated within the fieldwork portion of the study. Areas of focus included, but were not limited to: campus building management, specific maintenance practices, environmental and economic focus and larger awareness of the campus population in relation to sustainable construction activities, and LEED certifications.

An examination and textual analysis of document and archival materials such as syllabi, online STARS data reporting, strategic plans, mission statements, and other related institutional texts afforded a data comparison with the collected questionnaire and interview information to assess connections between published materials, faculty and administrative intent and subsequent student absorption. The importance of assessing the complete campus cultural climate was not neglected and semiotically-focused observations were undertaken to this end in addition to discourse analysis.

Throughout the concurrent data collection process, an iterative process of constant comparison allows for continual relational discovery of meaning construction (Creswell, 2012). In this case, the process sought is the transfer of sustainability-specific information. Active coding was utilized to generate topical themes, leading to the creation of theoretical bases for student impact (Creswell, 2012).

### **Data collection instruments**

Quantitative data collection was undertaken with the use of an electronically distributed survey consisting of 25-35 questions (see Appendices B and C for sample survey instruments). Institutional contacts were utilized for the acquisition of student and faculty email addresses. Deployed through the institutional research survey platform at Appalachian State University, these surveys do not record IP addresses or gather any identifying personal information other than basic demographics that the respondents willingly supply within the body of the questionnaire. The online survey included an explanation of the study and request participants' consent to continue. Data generated by the online survey is housed on the Institutional Research server and only accessible to the survey owners.

### **Rationale for research design and conceptual framework**

Using a mixed method strategy, though conceptually challenging due to the lack of prescribed strategies (Greene, Kreider, & Mayer, 2006), afforded the flexibility of integrating design for data collection and analysis. In this particular case, assessing larger numbers of students was desired, while time and resource constraints limited the ability of a purely qualitative project. The “numbers and stories” approach provides for a more complete understanding (Creswell, 2012) of this largely under-examined issue. Additionally, the benefits as well as limitations for the data collection balance each other out as responses may be biased in both formats depending on delivery, personality, interpretation, and reporting style.

Collecting data using multiple methods provided the possibility for increased rigor. The emergence and adoption of data triangulation in the mid part of the twentieth century formed the roots of mixed method approach legitimization (Creswell, 2012; Green, Kreider,

& Mayer, 2006). This decision was determined after assessing current literature in the field and realizing that little has been done to combine efforts in an intensive study focusing on more than a superficial assessment of practices. Additionally, given the trend of overreliance on interviews in small case research, the additional elements of survey data and document analysis augment what could be deemed a weak design (Stark & Torrance, 2006).

Descriptive phenomenological studies are sometimes considered less rigorous from a methodological standpoint. Furthermore, self-generated case studies in particular are also overly represented in sustainability research in higher education (Fien, 2002). Therefore, in this situation, the goal was to move beyond the typical narrative account and address the issue from a more critical standpoint that takes a deeper look at institutional tactics where ESD is concerned. This form of study in ESD is still not as common as some others (Fien, 2002) and could lead to potential understanding, as well as further theoretical constructions for ESD provision possibilities.

Descriptive studies allow the researcher to, “engage with and report the complexity of social activity in order to represent the meanings that individual social actors bring to those settings and manufacture in them” (Stark & Torrance, 2006, p. 33). For the purposes of this research, understanding how those social actors worked within these differing campus systems was of great interest. Additionally, though generalizability may be a weakness in, and of itself, this design may provide an opportunity to expand on current theoretical conceptualizations (Yin, 2009) or at least further understandings of practice on the individual campuses for their personal use. These practices could be enhanced after exploring the experiences of students at their respective institutions, with a goal of elucidating linkages or

disconnects between rhetoric and reality in the field of ESD based on individual campus cultures.

The examination of culture is important in understanding how, or what is communicated to students. For this reason, an approach anchored by hermeneutic phenomenology allowed for the relating of how participants understand their world and the messages communicated. This, in conjunction with critical discourse analysis and triangulated survey data, was useful for expressing relationships without assuming binaries, over-simplification or superficiality within the study.

### **Conceptual framework**

Hermeneutics, phenomenology and Critical Discourse Analysis (CDA) provide for an interconnected frame to address this study. Kaplan (2003) argues that hermeneutics are simply an extension of phenomenology—a process which, “seeks to reconstruct and understand the set of operations by which the experience is configured into a narrative and then transformed by the acts of interpreting and understanding” (p.9). If phenomenology is understood as the lived experience, then hermeneutics merges with identity and narrative (Kaplan, 2003) making it appropriate for use in attempting to understand conveyed meaning and intent in hierarchically organized institutions, utilizing particular—and oftentimes dominant—discourses to relate information.

This project was necessarily dialectic given its intended focus. For that reason, the phenomenological hermeneutic perspective contributed to the data collection and analysis process while CDA provided another dimension of connectivity. Discourse in general refers to written and spoken language, visual images and is a form of social practice that shape, reshape and reflect social structures (Fairclough, 2010).

Ideology is generated and negotiated between groups indicating dominance or marginalization. CDA seeks to address how discursive strategies maintain the status quo or expected social organization (Fairclough, 2010; van Dijk, 1993). For this study, understanding how traditional scientific discourses and disciplinary structures are organized matter with regards to the construction of meaning from the top of the HEI, to the student. Meyer and Wodak (2001) note that the interconnectivity between social structures, ideology and power shape discourse and discourse is also impacted. Much would be missed from a research standpoint, if identification of the dominant usages of words, phrases, consistency of content etc., on these campuses in reference to sustainability was ignored.

Fairclough (2010) makes the case for useful assumptions about discourse as a social practice. All dialectically related, productive activity, means of production, social relations, social identity, cultural values, consciousness, and semiotics directly pertain to this gathering of information surrounding this research topic of how students are impacted on HEIs. Points of access were important for this project as well—who has knowledge of sustainable concepts? How is this conceptualized then concretized for provision to students? Addressing word selection, usage patterns, marginalized discourse, and ultimate shared comprehension is a key to understanding if rhetoric translates to reality. If current disciplinary boundaries, notions of necessary knowledge and organizational structure contribute to limitations in sustainability provision in HEI, understanding discourses of practice will enhance our ability to see connections and/or paradoxes. This project ultimately reiterated the fact that those boundaries exist and will be addressed in the analysis section.

## **Data analysis**

Examination and analysis of the collected data were undertaken with a variety of approaches, including CDA. This is a concurrent design and although methods included closed question survey data as well as strictly qualitative approaches, none of it was weighted more substantially. This convergent design served to offset the strengths and weaknesses of approaches (Creswell, 2012). Given the research questions, the complementarity of data sources in this project warrant equal treatment. A separate, yet parallel analysis process for each strand of data collection was iterative and continuous in order to maintain necessary flexibility (Fetters, Curry, & Creswell, 2013).

**Qualitative.** Open, inductive coding was undertaken for interview transcriptions. In vivo codes for accuracy, as well as the identification of themes and construction of categories assisted in the generation of salient points (Creswell, 2012). The use of layering and interconnection within the coding process to develop a basis for understanding of how ESD information is received by multiple stakeholders in HEIs was also undertaken (Creswell, 2012). Word frequency analysis and larger, thematic codes were created from interviews and supporting documents. From these, sub-themes were subsequently generated, and compared within the collected data as well as in relation to dominant themes within sustainability discourses.

While the design is not so problematic, there are potential issues related to this type of project with regards to sample size similarity in make-up as well as size. Due to the phenomenological nature of this study, reliably assessing the results entails rigorous attention to detail consistency in coding application. Additionally, the disparity in philosophy generally found in a strict adoption of quantitative or qualitative approach may be considered

a stumbling block. The juxtaposition of inherent positivistic bent in survey instruments and that of a reflexive, researcher as the instrument mindset of a constructivist (Lincoln, 2005), employing ethnographic efforts chafes some. Given the attempts at balancing data collection methods and sources of material, threats were limited as much as possible.

Due to the nature of self-reporting, interpretation on the part of the researcher as well as interviewed individuals, clarity and depth of analysis was necessary to ensure a degree of accuracy that captured the intended meaning of all parties. After all, the basic research question seeks an understanding of values, perception creation and application of ESD in written and verbal text. As such, complexity and a multiplicity of meaning was inherent throughout the work and had to be addressed in a consistent manner. The use of layers and thematic interconnectivity assisted in providing additional checks and balances within analysis (Creswell, 2012; Lieber, 2009).

These forms of data collection and analysis are not novel in and of themselves; however the combination of efforts is rather unique for this field of study. From a researcher's standpoint, it seemed logical to create a platform for understanding utilizing more than one strand of collection and analysis. Having been trained as an applied cultural anthropologist and previously conducting research in overlapping areas of sustainable agriculture, sustainability discourses, and sustainable building design, the construction of this conceptual framework allowed for the usage of practiced methods while also stepping beyond the typical boundaries of examination. This merger of methodological paradigms is emblematic of the need for holism—not simply in practice—but also research styles in order to fully understand the layered complexity of the conversations, meaning, and action, taken by administrators, faculty and especially students.

**Quantitative.** Descriptive statistics was utilized for identifying trends and frequencies in student perceptions within the quantitative analysis segment. Because this is an exploratory design rather than comparative, an intensive examination of these HEIs was proposed, attempting to gain an understanding of how student meaning-making matches that of the larger institution. Using this data to augment the qualitative data collection may provide for a deeper description of activities, organizational structure and discourse.

Additionally, the potential for quantifying the textual interview and archival data such as word and phrase counts exists (Combs & Onwuegbuzie, 2010). Assessing the statistical averages of terms used along with the provided ethnographic context enhanced the overall results. This analysis integration also continues in the reporting process where results will be integrated through a combined narrative, weaving both qualitative and quantitative analysis together (Fetters, Curry, & Creswell, 2013).

### **Limitations**

There were limitations pertaining to the chosen method of data collection, as well as selected forms of analysis. The process of narrative description and textual analysis using a phenomenological frame is inherently, and purposely subjective. Layers of interpretation are involved in this process along with the understanding that the derived meaning is constructed on an individual basis—from the researcher’s innate biases, question design, interview focus, and participant engagement to the participants themselves. While that might be viewed as a serious limitation in most research, in this case, the focus is on finding the linkages between those individualized conceptions of sustainability. Those linkages are hoped to denote consensus outside the lines of individual constructs. Therefore, the utilization of word and phrase counts within the Critical Discourse Analysis approach will be useful in assessing

where differences and similarities merge in meaningful fashion. Careful attention to triangulating analyses—especially where coding is concerned serves to help minimize potential bias and ignorance of prominent themes.

In conjunction with the “bricoleur” approach of “choosing and adapting methods” (Lincoln, 2005) to the situation, it is hoped that some of the obvious pratfalls are avoided. Adding the quantitative element lends itself to corroborating and seeking out those linkages between faculty, administrators, staff and institutional standings on sustainability and the manner in which students use that information for themselves.

While that is a beneficial piece of the research design, other potential limitations exist. Survey instrument content such as question clarity, covered topics and the self-reporting nature of the questionnaire pose reliability issues. Additionally, available sample size, response numbers and composition may be problematic. Those already familiar, or interested in sustainability are likely more prone to respond while others ignore the request for information.

### **Ethical considerations**

Every attempt was made to follow human subject research protocols to ensure that all participants were adequately protected as well as maintain the veracity of the data collection and analysis process. Approval was sought and granted by the researcher’s institutional review board as well as approved by each research site’s internal review office. Each office was provided with a list of participant questions as well as the offer to revise any and all matters that might raise potential concern. All participants were provided an overview of the project purpose, research questions, and ultimate goal for publication of the results. No one

was pressured to participate and it is believed that all who took part in this research, did so voluntarily.

**Quantitative data collection.** Electronically deployed, the survey instrument contained an informed consent form and neither requested, nor collected, any identifiable information from the participating students. It was specifically requested that no students under the age of 18 participate in the project. No recognized risks appeared to exist in the answering of the survey questions.

**Qualitative data collection.** The minimization of risk was also a goal in the qualitative data collection process. Each participant that agreed to be interviewed was provided with informed consent paperwork and asked to indicate their willingness to contribute to the data collection process. The interviews continued only as long as was convenient for the participant. Transcribed interview notes were coded and anonymized to ensure that no information could be directly linked to a specific individual. Each institution was also provided with a unique identifier to further limit the ability to connect the data to individuals or specific institutions in case any unanticipated risks existed. Additionally, each institution was offered the opportunity to review the survey data and follow-up questions for interviewed subjects were clarified through further conversations or electronic communications to ensure the reliability of the data. The following chapter will provide data collection and analysis highlights in advance of a thorough discussion of the results and concluding recommendations.

## **Chapter 4: Results and Findings**

The purpose of this project was to more fully understand the impact sustainability initiatives have on students attending two private HEIs in the Southeastern United States. Also considered was the degree of shared understanding and conveyance of meaning by faculty, staff and administrative parties. Campus building design and institutional focus on energy efficiency and waste reduction, as well as the curricular integration of sustainability-related information and institutional relationships and group activities were all considered important facets for understanding the interplay of communication and action. Each of these areas was addressed in observations and interviews, as well as the survey of students on each campus.

Of particular interest was whether or not the data collected from both institutions might indicate any noticeable contrast in proclivities towards pro-environmental behaviors, increased holistic values, or perceptions of equity based on their exposure to the individual campus' sustainability approach. Procedural clearance was gained at the institutional level, with each campus sustainability office suggesting they would support the research effort. Data collection began in May 2014 at Institution Two and in June 2014 at Institution One and was completed at both HEIs by January 2015.

The following review of results incorporates both qualitative and quantitative data in narrative format in order to illustrate each of the aforementioned areas the study addressed. Within each area, thematic subcategories and information gained from over thirty semi-structured participant interviews as well as relevant survey data will provide a framework for

understanding the potential impact on students. Consideration of the research questions and interplay with survey data was taken into account within the qualitative data analysis process. Iterative by nature, areas of thematic importance were determined and coded once the interview transcripts were complete. This process was assisted by the use of NVivo qualitative analysis software to measure text similarities and word frequencies among respondents and assess those with regards to stated institutional mission, strategic plans, survey data, and literature reviews. Each HEI was evaluated within itself.

The survey was conducted on-line, via emailed link, with no identifiable information gathered from participants. Each campus Office of Sustainability was offered the opportunity to add their personalized questions. Institution Two made minor changes to the wording for first year students and added items pertaining to their campus bike shop as well as knowledge of food waste reduction efforts and petroleum-based fertilizer usage. After review, Institution One declined to personalize their survey.

Though the cumulative response rate was also less than expected, the results still provide some insights into the sustainability efforts on each campus. Specific limitations and recommendations will be addressed following the summary of collected data. The following summaries of both institutions will consist of the expressed views of the participants with the research question framework as previously noted, beginning with campus observations.

### **Observations: physical and virtual landscape**

In order to understand how each campus approached sustainability, the qualitative element of the data collection process utilized ethnographic techniques such as a general study of the physical campus, as well as participant observation in addition to interviews and public document examination.

These campus observations were primarily conducted in conjunction with scheduled interviews. Salient features such as waste and recycling signage, water bottle refilling stations, and sustainable building features such as solar arrays and dual-flush toilets were noted. A summary of each campus will be provided with connections to the larger research questions and situated context of the institution in its geographic location.

Institution One is comprised of uniform and traditionally designed, homogeneous brick residence halls, multi-purpose administrative buildings, and classroom spaces in addition to a more modern fine arts center with gallery and theater spaces, and a prominently situated chapel. It is a picturesque campus, replete with requisite manicured lawns and sprawling, green athletic fields. Rarely is there a time when an observer does not see maintenance, janitorial or landscape crewmembers working on some aspect of the campus. One faculty member termed those employees, “shadow people,” and noted their work largely rendered the student body oblivious to any need to interact with their immediate surroundings or deal with their own waste (personal communication, October 2, 2014).

It is an urban setting, tightly controlled and maintained in stark contrast from the bulk of the surrounding city it is situated within. The campus may be entered from multiple directions—with two routes into campus that include unkempt, partially abandoned strip malls and low-income multiunit housing. From a decidedly different entrance, visitors pass through a residential area that includes elaborate Tudor-style mansions.

This residential area lies against the campus and embraces a conference center. A short paved trail connects the idyllically preserved historic village and gardens to the main campus. Additional unpaved trails exist within the surrounding wooded areas—all part of adjacent grounds that are open to the public. This additional land was donated by a

prominent local non-profit foundation also affiliated with local heirs in parcels from 1953 to 1963 (“The Babcock Era,” n.d.). A heavily trafficked pedestrian area, it is common to see cross-country teams affiliated with the institution, as well as local high schools, training on these trails and pathways.

Pedestrian traffic is a well-studied issue at Institution One. Statistics of student and faculty bike and vehicle usage are a prominent feature in their Office of Sustainability Strategic Plan, with comparisons made to other local, prominent HEIs. According to their Sustainability Strategic Plan, “approximately ninety-seven percent of employees at Institution One drive themselves to work everyday” (p. 38). The Strategic Plan contends that this compares unfavorably with the other HEIs they have selected to use for benchmarking.

Unlike many other HEIs, this one has allowed incoming freshman to bring and register their own vehicle. Resident, on-campus parking registration fees reach an annual fee of over \$500 per vehicle (“Resident Student Parking,” 2014). Freshman pay a reduced rate due to the requirement that they park in an off-campus lot and use a shuttle service. Considering some of these parking constraints and other issues affecting campus employees as well as students, the institution recently partnered with local municipal bodies in a large-scale bicycle, pedestrian and transit study, which was prepared with campus and governmental stakeholder input. The study is prominently displayed on the Office of Sustainability website’s home page and is complemented by the Strategic Plan as well as supporting information on the web site.

Proposal recommendations include: expanding greenways, widening nearby streets and adding bike lanes, constructing pedestrian sky bridges to safely connect neighborhoods to campus among other plans (Alta/Greenways, 2014). Additional recommendations from

the Office of Sustainability target individual behavior and include increasing bicycle ridership, choosing alternative commuter options—in which incentives such as cash prizes for usage will be provided—and increased use of local transit.

Increasing the use of university-provided Zipcars rather than bringing their own vehicle is also included in the study recommendations as well as an offered suggestion for incoming freshman (Alta/Greenways, 2014; “Parking and Transportation,” 2014). Signage was visible in select parking areas with allocated spaces for rideshare and electric vehicles. These alternative transportation efforts were noted as a, “surface solution,” to campus sustainability problems by a project manager (personal communication, July 11, 2014) and an example of “visibility versus value” by a faculty member (personal communication, July 30, 2014).

The cost of the large-scale transportation improvement effort would be absorbed through institutional fundraising as well as local, state and federal sources. Following up this larger study are a number of other initiatives including a current project underway to assess and improve campus infrastructure for bicyclists and pedestrians. Stakeholder input has been requested, the analysis is underway, and a final draft is expected in early 2015 (Alta/Greenways, 2014).

At no time on campus did I observe a student on a bicycle. On one occasion, an elderly man that may have been a retired faculty member was riding his bike. The primary mode of transportation on campus appears to be foot traffic. This is corroborated by the Office of Sustainability’s estimation of residential traffic. Though campus shuttles are offered from campus to downtown locations (a distance of approximately three miles), most students use their personal vehicle and make limited use of public transit options. A faculty

member assigning off-campus class work specifically requested that students ride the bus. According to her, only two students were successful in navigating the transit system (personal communication, June 3, 2014). Student survey data indicated that nearly fifty percent of the respondents did not use public transportation regularly.

Transportation issues are also an area that some faculty noted the effect of sustainability rhetoric. When faced with an unpopular new policy requiring a parking fee linked to salaries, one faculty member sardonically noted that campus administrators were simply attempting to “repackage” the issue in sustainability speak, promoting a “cycle to work” option (personal communication, October 2, 2014).

The packaging of information is the norm of HEIs as more and more institutions seek to maintain enrollments and present their best face to incoming students and parents, as well as current staff, faculty, and students. High profile, low effort impacts are often easily showcased. Recycling is most often prominently portrayed on many campuses and many, if not all, interviewed participants, noted the recycling efforts on their campus. This aspect of the campus message is one everyone views with familiarity and largely due to the fact that the most visible aspects of sustainability office work are the perfunctory recycling bins outside most buildings. Within the buildings themselves, the most noticeable sustainability-focused aspects are in the newly constructed dining hall. Extensive lighting is provided for patrons with the use of skylights and large expanses of windows. A touchscreen display at the main entrance provides water and energy usage information. Recycling stations providing choices for student, staff and faculty waste stream are also prominent.

Recycling and waste reduction are both issues weighted heavily by each institution. This was evidenced by the prominence of related topics and initiatives detailed on the

website for the each Office of Sustainability as well in the published news stories archived on the Institution One site. In the case of Institution One, though extensively publicized and made visible with such programs as the “Green Team” or EcoReps volunteer corps through the Office of Sustainability, many of those interviewed were critical of the actual actions taken by the students in this respect. One administrator noted that the, “recycle bins are out there but that doesn’t mean they use them,” and added that there, “is not a conversation about *doing* or *thinking* sustainably” on the campus (personal communication, October 2, 2014). The argument was made by many that recycling seems to be the dominant message issued from the Office of Sustainability with little effect on consumption or waste habits. Another faculty member succinctly echoed the sentiments of the others when he said that recycling, “doesn’t seem to work—they appear to embrace the idea but don’t do it” (personal communication, July 30, 2014). This passage of information but lack of action was expressed by another faculty member when he noted with some discouragement that dominant promotion of sustainability on campus was related to facilities-dominant areas such as materials and outcomes, as opposed to individual behavior change (personal communication, October 9, 2014).

Effective encouragement of behavioral changes was also a topic during an interview with a senior project manager familiar with the design and construction of the dining hall. He provided a wealth of information regarding the newly purchased pulper/extractor that will minimize food waste if diners properly dispose of their unused items—both food and biodegradable containers (personal communication, July 7, 2014). The main issue they have been concerned with is contamination of the compostable stream by careless waste disposal. In order to combat this problem, some signage was already in place and also in development

at the time of the interview to educate the campus community on how to ensure that waste is minimized. He did not seem convinced that the increased signage would have an impact on their behavior if it entailed too much thought or alteration from the norm. And as an administrator noted in another conversation regarding waste and consumption, even if the students, “know what they should do, they won’t do it if it’s inconvenient (personal communication, October 2, 2014).

Making waste disposal convenient is generally a wise choice. A newly observed element of the sustainability office’s work was evident at fall sporting events. Reusable cardboard recycling containers are now placed next to garbage containers at all tailgating locations on campus. On one blustery occasion, the parking lot was awash in cardboard recycling bins prior to a football game as the recycling containers were blowing over in the wind while the trash containers remained upright, leading to the assessment that it was possible that the recycling containers were not being fully utilized. The placement and usage of recycling bins at sporting events is reasonably new. An interview with an inaugural, Office of Sustainability sponsored, “Green Team,” member integral to getting the bins in place, noted that, “It’s a cultural thing” and that it’s been tough to get the older alumni onboard with the game day recycling effort (personal communication, June 14, 2014). Additionally, getting male staff members in the same department to recycle office materials has been difficult in her tenure there. Part of her argument rested in the belief that woman are more, “open minded” and willing to embrace changes whereas her male counterparts are unwilling to alter behavior (personal communication, June 14, 2014).

### **Online presence and message communication**

This institution capitalizes on the connected nature of students, using a Facebook and Twitter account for the various departments and offices including Sustainability. Its website is primarily utilized as a platform for disseminating information regarding current office and campus-wide events, specific programming, initiatives underway, and the recognition of students, staff and faculty for efforts related to campus sustainability. The bulk of the information is communicated in short—two to four paragraph—blog-style entries, alerting the reader to happenings around campus. Tabs across the top of the page offer further information regarding more lengthy, sustained projects such as waste reduction or LEED building design. These initiatives are largely out of the realm of the students' actions, and serve more so as describing this HEI's sustainability activities.

Its "Academics" tab, which includes reference to the curriculum project, a workshop for faculty interested in incorporating sustainability-related content into their courses, and one of the factors in the selection of Institution One as a research site, is the least up-to-date and includes at least two points of reference that have not been updated in the past year. The most recent examples for syllabi are from 2013. Students are offered eight courses suggested to, "stimulate and facilitate learning for sustainability," with an additional link to over one hundred courses that may also afford some sustainability content. The Sustainability Strategic Plan provides a similar overview and specifies the desire to hire faculty that fill gaps in the university's sustainability curricula.

The "Get Involved," drop down option, is a useful tab that offers students, staff and faculty a multitude of information and choices for sustainability-focused groups, efforts, or projects on campus. This pointed address of specific options for students would seem to

make it easier to encourage engagement, though it is uncertain as to whether or not the office actually monitored the number of hits this section of the site received and how they handled that interest.

Of note is the difficulty in finding a link to the Office of Sustainability from the institution's main web page. In fact, during an interview, an employee attempted to demonstrate the ease of use for the residence hall energy dashboards and was at a loss as how to navigate to the website. There is no link to the Sustainability web site on the HEI home page. The most simplistic method is to search for it within the administrative directory. There is also no information provided directly to prospective or incoming students and their parents regarding campus sustainability efforts.

An archived campus news story search also brings up published accounts of related initiatives, projects or recognitions. The initial story detailing the hiring of the current—and sole—sustainability director, is dated 2009. From that point on, dozens of brief narratives detail sustainability-related advances on campus. Table three provides an overview of the number of stories and thematic areas of focus.

Table 3: Institution One: Areas of thematic focus presented online by the Office of Sustainability

<b>Focus areas (2009-2015)</b>	<b>Number of news stories per area</b>
<b>Alternative transportation*</b>	4
<b>Food related issues</b>	14
<b>General office activities (including affiliated lectures and announcements)*</b>	14
<b>“Green” careers/job advising</b>	4
<b>Sustainable building practices</b>	6
<b>Sustainability-related awards or recognition</b>	3
<b>Teaching and learning/educational programming</b>	7
<b>Technology and Research</b>	13

\*Carry-over topics

The areas of focus presented by the Office of Sustainability website were also corroborated by interviewees in terms of campus relevance in the sustainability conversation. Most faculty interviewed suggested that the Campus Kitchen project and food-related issues were highly visible. Additional online presence is evidenced by social media accounts on Facebook and Twitter to announce upcoming events and engagement opportunities.

### **Institution Two observations**

Institution Two differs somewhat from Institution One in that it is located in a more suburban area with multi-lane roadways, fast food chains and busy strip malls framing the 340 acres campus. The campus itself has a lovely quad area with large oak trees and adjacent urban forest. A picturesque lake with varied duck species is located in between the woods and athletic fields.

The campus gives the impression of space, yet comfortable proximity between the classroom buildings and residence halls. With its Quaker heritage, it is not surprising that the buildings demonstrate a modest and understated design. Brick construction, with minimal embellishments, the physical impression of Institution Two is one of sturdy competence. Founded in the early 19<sup>th</sup> century on Quaker principals, intended to “serve the children of the Religious Society of Friends,” (“Quaker Heritage,” n.d.) the institution literally demonstrates its historic connection with its current core values—community, diversity, equality, excellence, integrity, justice and stewardship. These core values were displayed in various interpretations throughout campus. On most observed occasions from May 2014 until January 2015, students were gathered in support of some external cause—primarily of a social justice bent with groups devoted to increasing awareness for immigration issues, climate justice or equality.

In addition to gatherings, campus observations generated an awareness of specific sustainability-focused features and efforts. The solar arrays on nine buildings are the most noticeable physical evidence of the commitment to sustainability. They generate hot water for the school's solar thermal system, and at the time of installation in 2007, it was the largest solar hot water project to date. Recycling, compost, and waste bin differentiation, along with dining hall signage regarding food waste and dual-flush options for restroom toilets provide other obvious signs of overt sustainability efforts. Though the community garden and farm are principle points of pride for the institution, they are not visual focal points on cursory campus visits.

### **Online presence and message communication**

Institution Two's web site also emphasizes both its core values as well as promoting its sustainability efforts. Both are carried through campus publications on the institution's home page and were also addressed repeatedly within the interviews that were conducted. The institutional home page notably includes a link to their sustainability page in the "about" tab with other basic college information. This information is listed with general data such as the mission statement, leadership structure, and information regarding application submissions that would be a likely initial starting point for anyone interested in the college. Like Institution One, there is no sustainability-specific information relayed to incoming freshmen or their parents per the website.

Once on the Office of Sustainability home page, the initial verbiage for the website seems to inspire action when it proposes:

Right here, right now, we're getting sustainability done. Our students, faculty and staff are making a real difference, with large and small sustainability projects that are

showing concrete, measurable results. We're lowering our carbon footprint, saving money, and creating lasting social change. Why? Because stewardship is part of who we are, and it has been since we opened in 1837. Our students are passionate about sustainability not because it's the hot new trend, but because it's been ingrained in our campus culture for 175 years. ("Guilford Sustainability," n.d., para. 1)

After that call to action, it is broken into three broad categories—Earth, Energy, Water-- that are then thematically related to campus initiatives or completed projects. An informational synopsis is provided within many identified areas, allowing a link to a longer, more in-depth narrative. While not everyone may read the informational piece, there is a separate paragraph beneath each synopsis labeled "benefits." These provide statistics, linked evidence from projects and impact on students, staff and their community. Regardless of the category, the bulk of the information pertains to work directly related to energy consumption/reduction and a repetitive emphasis on reducing their collective carbon footprint. A "Get Involved" tab redirects interested individuals to a new page, asking if they have comments, questions, or interest in volunteering. It is a basic form that requires basic contact information with a small "message" box for specific comments.

On a previous version of the web site, two direct links demonstrated the existent relationships between the office and other areas of the campus. The page is housed within the HEI site with the required banner at the top, generically offering to redirect individuals back to the main site. On the bottom were links for the interdisciplinary environmental studies program as well as to the Center for Principle Problem Solving, an administrative and academic campus center devoted to initiating projects, programs and educational experiences meant to foster social change. These were logical connections and related to additional

information relayed from faculty involved in both areas. The absence of those links on the current web site likely has more to do with the fact that they are no longer paying for professional website maintenance rather than a falling out with the program areas (personal communication, May 13, 2014).

### **Institutional framework—tangible and otherwise**

Overall institutional engagement and programmatic relationships within the institutions were just two elements of significance in this research project. The literature review revealed a preponderance of examples pertaining to the difficulties, and even conflict, entailed with integrating sustainability across the curricula, as well as processes for singular program adoption. Based on the interviews conducted, these two institutions seemed to be experiencing standard issues related to those as well as highlighting the following: shared meaning, communication and espoused values, administrative support and/or impediment, integration of curricula components, and collaboration between the academic and facilities side of the institutions.

### **Definition of terms and shared meaning at Institution One**

“Language is the liquid that we're all dissolved in  
Great for solving problems, after it creates a problem”

(Brock, Gallucci, Judy, & Peloso, 2004)

Collaboration across divisional lines—or even within—involves dialogue and some form of shared meaning. A question set regarding the participants’ basic understanding of sustainability was asked of all interviewees at both institutions (see Appendices). This included their own personal interpretation, as well as how they understood their institution to define sustainability. They were also asked to consider whether or not a shared meaning of

the term and associated literature or learning outcomes was necessary. While the answers were varied to some extent, all tended to focus on resource use and provided a definition largely similar to that proposed by the Brundtland Report. With the exception of the Institution One sustainability director, there were no other definitions provided by the interviewees. Most were uncertain of any campus definition, offering that they were, “sure that the sustainability office has one,” (personal communication, June 3, 2014). A number of faculty from both schools noted that it was more so a set of “initiatives,” rather than any set meaning. Many at Institution One offered that it was related to recycling or food—this opinion was backed up by web documentation of campus activities and Strategic Plan information. One senior faculty member noted the dominance of resource efficiency in terms of campus messaging when he said, “it’s heavily focused on energy usage and recycling...it’s a great idea but it’s not much of a structural challenge” (personal communication, June 30, 2014).

His sentiment was echoed by almost all of the Institution One interviewees as well as the identification that there is a “saying as opposed to doing” problem when it comes to campus sustainability (personal communication, October 2, 2014). Most faculty members argued that words have little impact and few people would pay attention anyway (personal communication, October 2, 2014). Administrative personnel interviewed tended to agree that there was no set or shared definition that they were aware of, but spoke in terms of the need to support the initiatives laid out by the office of sustainability (personal communication, August 23, 2014). No specifics were offered with regards to what initiatives this related to, and the primary evidence for campus support was provided by listing the financial outlays for physical space and programmatic improvements in the area of research and new master’s

degree in sustainability (personal communication, July 24, 2014; personal communication, August 23, 2014).

Money was not the sole focus and one upper level administrator offered that, “They (Institution One) should have a shared definition of sustainability . . . words are important and inextricably linked. I think to some degree there's an attitude that "they—the office of sustainability—do it" and it's not recognized as something we all need to do. We all need to take responsibility for that” (personal communication, August 21, 2014).

Given the goal of understanding the importance of word choice and construction of meaning and communicated message, word frequencies were run for all interview transcripts as well as supporting documents. In the case of Institution One, the institutional mission and vision statement were used, as was the strategic plan for the entire institution and individual plan for the Office of Sustainability. The following table presents the highest frequency words used within this research project. Basic parts of speech and HEI identifying terms were omitted after careful examination.

Table 4: Institution One: Overall word frequencies

<b>Supporting documents</b>	<b>Interviews</b>
campus	think
students	students
faculty	faculty
energy	campus
goals	focus
develop	sustainability
buildings	program

In addition to word frequencies, all of the documents were assessed according to dominant themes in sustainability discourses. The represented themes were mostly consistent with typical sustainability discourses. That being said, there was a marked absence of a more global perspective from written institutional materials.

Table 5: Institution One: Dominant discursive themes

<i>Theme</i>	<b>Number of references</b>	
	<i>Supporting Documents</i>	<i>Interviews</i>
<b>Community</b>	<b>34</b>	<b>8</b>
<b>Environment</b>	<b>20</b>	<b>22</b>
<b>Sustainability</b>	<b>92</b>	<b>73</b>
<b>Diversity</b>	<b>12</b>	<b>3</b>
<b>Globalization</b>	<b>0</b>	<b>1</b>

### **Perceived campus focus of HEI stakeholders**

Based on public website information, strategic plans and interviewee responses, the dominate focus for Institution One’s campus efforts seems rooted in an economic/environmental paradigm. Each respondent was asked their opinion of perceived campus emphasis and the overwhelming response was couched around literal consumption—recycling—as well as overall operations. A final interview with the sustainability director firmly clarified this when she responded that the institutional definition is geared towards, “making the institution as efficient and effective as possible. It also has a human focus that involves empowering other people—staff and faculty—to help with that transformation” (personal communication, December 8, 2014). When given the same query, a faculty member noted that the institution definitely has an economic bent to it when it comes to sustainability, which makes perfect sense since, “we have an MBA running the sustainability office” (personal communication, October 9, 2014).

Impressions of prevailing communication efforts differed across interviewees. While the sustainability director offered that contact between peers and informal educational drop-ins like “Think Green Thursdays” provide the best examples of their sustainability messaging (personal communication, December 12, 2014), most others referred to web site definitions or PSAs at sporting events—even arguing that sustainability is more of a buzzword than any specifically useful application (personal communication, June 12, 2014; personal communication, October 2, 2014). One faculty suggested that the principle theme communicated appeared to be that of a recycling program and little, if any, actual content was conveyed (personal communication, October 2, 2014). Another faculty member suggested that sustainability is not much of a focus on campus and reiterated the dominant message as one of recycling. He went further to say that it appeared to him that, “most students use their recycling bucket to carry their useless garbage” and little else (personal communication, October 2, 2014). For the most part, the use of social media and internet sources present the bulk of the most visible messages. However, unless one refers directly to the office of sustainability website, it is unlikely that much awareness of project and plans will be generated.

### **Activities**

When asked about student activities or groups related to sustainability, interviewed faculty had little awareness of any significant involvement on the part of the students. Survey data indicated that an almost even split within respondents who noted involvement in a sustainability-focused group. Thirty-two percent agreed, or strongly agreed that they were involved while 28 % disagreed, or strongly disagreed. Of the 11 responses provided in

regards to the question of their specific group involvement, 10 were distinctly environmentally focused with only one related to social justice (NAACP).

Many interviewees noted the push for student “well-being” and the fact that an active social life seemed to be keys—and largely unrelated to direct sustainability programming. Convenience and unwillingness to stand out in the crowd were cited as main reasons for a seeming lack of student energies in this area. A faculty sardonically related that, “there is no social capital to be had for those that rock the boat” (personal communication, October 2, 2014). This conservative focus was also identified by an administrator who noted that the office of sustainability has “tried,” but “as a culture, there hasn’t been a conversation about doing, or thinking sustainably and consumption is still bad. . . . Students want ‘x’ but are not willing to change their behavior ” (personal communication, October 2, 2014).

Student survey data indicated that convenience might be a factor in student decision-making. Close to half of the respondents disagreed, or strongly disagreed with the statement that they walked or rode a bicycle rather than used a personal vehicle. Under 10% regularly use public transportation and roughly 50% polled were neutral or in disagreement when asked if they purposely avoided purchasing products from companies with negative environmental or human rights records.

### **Espoused values**

The survey attempted to assess student values and perceptions along with behavior. While the overwhelming responses were in general agreement with the need for such things as: governmental support for the mitigation of present or further environmental degradation and universal rights for quality education and clean water, interviewed participants and dominant campus messages are geared towards economic gain and less focused on equality.

One interviewee expressed the opinion that:

a lot of people in our environmental and energy center here are in the hard sciences and a lot of them are in chemistry and physics. They are doing some very good work on energy development but when it comes to critiquing . . . you are developing this and then immediately you are patenting it and trying to find commercial applications. I would like our students to immediately question that, to say, “Wait a minute, who’s controlling this information?” (personal communication, July 30, 2014)

Others that were interviewed noted initiatives or activities in areas of service learning and community engagement that the students could become involved with if they chose. The notion of “giving back” was expressed by some administrative interviewees and reiterated in the institutional motto. In 2014, an institute was created on campus to initiate projects and conversations in that vein and most recently, a network talk show host and university alum, was named its executive director. It is under this initiative that the campus kitchen and food-recycling program are housed as well as other, specific community outreach programs (Hewlett, 2015). Only one student survey respondent indicated involvement in a community outreach endeavor.

### **Shared meaning and communication at Institution Two**

Like Institution One, those interviewed held a myriad of personal views of sustainability but were unsure or unaware of a shared institutional definition. Also similarly to Institution One, many faculty interviewed at Institution Two expressed a disinterest or lack of need for consensus on this issue. One individual noted that he was not sure there actually should be, because “it’s more problematic in the details” (personal communication, May 22, 2014). Others used examples of campus practices such as the bike shop, office energy audits,

and sustainable building design as evidence of at least an intentionality, if not an actual definition (personal communication, September 9, 2014). Administrators tended to agree that a shared definition would be useful while faculty shied away from being pinned to a specific meaning.

### **Literal communication: Discursive practices**

Efforts to share information about sustainability-related activities and programs were described by one administrator as, “something that’s like the air around us,” that it is, “just there” (personal communication, September 9, 2014). Others noted office energy audits, classroom visits from the Sustainability Office, workshops with sustainable foci, and sustainable building as physical evidence that communicated campus priorities. These examples from Institution Two interviewees speak to the literal message they perceived to be directed to students, staff, and faculty and correspond to the active language used to communicate sustainability messages on their website. One staff member that functions in a mentoring capacity noted that, campus tours were very effective in communicating the campus message (personal communication, January 12, 2014). This was corroborated by most who indicated tours and first year seminar coursework that made students aware of the working farm on campus as an effective means of communication.

Meaning and communication pertaining to word frequency were also examined in interview transcripts as well as supporting documents to assess and compare dominant themes. Additional documents included the college’s mission and vision statements, strategic plan, and Institution Two Advantage.

Table 6: Institution Two: Overall word frequencies

	<b>Supporting documents</b>	<b>Interviews</b>
	community	students
	values	works
	students	campus
	core	farm
	diversity	year
	Quaker	faculty
	learning	focus

In addition to word frequencies and theme development, the collected data were compared to dominant themes in sustainability literature. The following table demonstrates the frequency of usage.

Table 7: Institution Two: Dominant discursive themes

<i>Theme</i>	<b>Number of references</b>	
	<i>Supporting Documents</i>	<i>Interviews</i>
<b>Community</b>	<b>17</b>	<b>10</b>
<b>Environment</b>	<b>2</b>	<b>8</b>
<b>Sustainability</b>	<b>9</b>	<b>81</b>
<b>Diversity</b>	<b>10</b>	<b>3</b>
<b>Globalization</b>	<b>2</b>	<b>0</b>

Again, similar to Institution One, there is an absence in the number of references related to a more global perspective. However, that limit in reference may be solely contextual, with other means for explaining the HEI-specific focus on wider issues.

### **Activities**

Communicating information about the campus was not possible without interviewees noting the farm. It is a focal point at Institution Two, with every individual interviewed,

referencing its prominence within campus culture. Not everyone was familiar with all of its workings, but all noted the student interest and available volunteer opportunities. In terms of other, more general, activities that interviewees perceived student engagement in recycle mania and dorm energy competitions were most often cited. However, a combined 47 percent of respondents either disagreed or strongly disagreed with the question that they were involved in any sustainability related activities on campus and none of the 15 supplied responses to the question regarding group membership concerned recycling or energy competitions in the student survey. Most of the listed groups were in the area of sustainability council membership, social justice or other less environmentally-specific areas.

### **Values in action**

Action and effort in the areas of social justice were dominant themes in interviews at Institution Two. In response to the perceived focus of campus sustainability—as well as the institutional definition—the majority of respondents referred to a presumed relationship to the foundational Quaker heritage that includes, “five normative testimonies— integrity, simplicity, equality, peace and direct and immediate access to God/Truth,” which have been inculcated into the curriculum and correspond to the college’s seven core values: community, diversity, equality, excellence, integrity, justice, and stewardship (“Quaker Heritage,” n.d.). This led to most indicating that they felt the dominant values messaged in the area of sustainability to be social and environmental justice. This perception was correlated to the mission statements, core values and publically espoused tenants of the college.

In terms of connecting student values to actions based on their survey responses, like Institution One, the dominant sentiments conveyed in the values section indicated that they agreed with universal right to access a quality education and clean water as well as voting for

elected official based on their environmental and cultural views. That being said, as was the case with Institution One and the notion of convenience, most students do not utilize public transportation with most citing that fact that they had no use for it because they either owned their own vehicle or had access to one. In general, the Institution Two survey reflected a sample of informed students based on their knowledge of campus-specific efforts. This personalized information was not gained from Institution One due to the fact that they elected not to add any survey questions particular to their campus efforts or initiatives. The table below provides an overview of the student data.

Table 8: Institutional survey results

<i>Item</i>	<i>Response Options</i>	<b>Institution One</b>		<b>Institution Two</b>	
		<i>Count</i>	<i>%</i>	<i>Count</i>	<i>%</i>
	<b>Strongly Agree</b>				
	<b>Agree</b>				
	<b>Neutral</b>				
	<b>Disagree</b>				
	<b>Strongly Disagree</b>				
<i>Actions</i>					
<b>I walk or ride my bike rather than drive a car whenever possible.</b>		66	12	87	14
			26		30
			20		29
			32		20
			11		8
<b>I hike/camp often.</b>		66	4	87	6
			29		31
			31		26
			26		23
			9		14
<b>I use public transportation</b>		68	9	86	6
			9		15
			31		20
			40		30

		10		17
<b>I avoid buying from companies with negative reputations (in terms of humans rights or environmental exploitation).</b>	67	13	85	22
		34		32
		27		24
		22		15
		3		7
<b>I encourage my friends to alter their behavior to benefit the environment or welfare of others.</b>	68	24	86	36
		47		37
		10		13
		16		12
		3		2
<b>I consider politicians' stances environmental and social justice when voting.</b>	67	34	86	45
		30		28
		25		15
		9		10
		1		1
<b>I am aware of my energy consumption and attempt to conserve.</b>	67	27	86	31
		46		49
		18		8
		6		9
		5		2
<b>I purchase locally grown or sourced foods and products.</b>	67	6	86	19
		43		34
		30		34
		16		12
		4		2
<b>I use a refillable water bottle (i.e. nalgene).</b>	67	55	86	58
		27		27
		6		10
		7		2
		4		2
<b>My college offers many activities and/or groups with a sustainability focus (environmental, social justice, etc.).</b>	67	21	86	44
		40		44
		22		9
		13		1
		3		1
<b>I'm active in sustainability-focused groups</b>	67	19	86	14
		27		19
		12		21
		25		31
		16		15
<b>My university offers many courses offered with a sustainability focus.</b>	67	0	86	17
		27		42
		35		30
		30		10

		8		0
<b>Many of my professors discuss issues related to the environment or social equality in class.</b>	67	10	85	31
		27		36
		31		16
		25		16
		6		0
<b>I take or plan to take sustainability-focused classes.</b>	67	27	86	33
		22		24
		18		16
		22		12
		10		15

### *Perceptions and Values*

<b>The media has exaggerated reports of climate change and impending environmental crises.</b>	60	5	83	1
		15		5
		20		25
		38		31
		22		37
<b>Humans have the right to alter the environment.</b>	59	5	83	4
		15		7
		25		29
		31		31
		24		29
<b>Technological advances will fix our environmental problems.</b>	59	2	83	1
		25		23
		54		51
		17		14
		2		11
<b>Humans should adapt to their physical environment.</b>	59	10	83	12
		68		69
		20		16
		2		2
		0		1
<b>Environmental degradation may be necessary for economic growth.</b>	59	0	83	1
		10		6
		31		29
		41		19
		19		45
<b>Some human exploitation may be necessary for economic growth.</b>	58	2	80	4
		14		11
		22		15
		33		20
		29		50
<b>Protecting the environment should be a priority.</b>	58	39	82	46
		42		38

		12		11
		7		5
		0		0
<b>My actions affect others, even if I don't see their direct effect.</b>	59	59	83	73
		37		19
		3		7
		0		0
		0		0
<b>We can learn from other cultures.</b>	58	45	83	69
		48		25
		7		5
		0		0
		0		1
<b>Poverty is a serious issue that many people face around the world.</b>	57	82	83	82
		16		13
		2		5
		0		0
		0		0
<b>Access to a quality education is a universal right and should be available to all people</b>	58	66	83	75
		28		17
		3		6
		3		0
		0		2
<b>Access to clean water and should be available to all people.</b>	58	84	83	88
		12		8
		3		4
		0		0
		0		0
<b>The government should act to reduce the effects of climate change and other environmental issues.</b>	58	60	83	76
		21		18
		12		6
		5		0
		2		0
<b>I feel personally obligated to act.</b>	58	50	83	55
		31		25
		14		17
		5		1
		0		1

The questions regarding course offerings and professor discussion proved of particular interest given the focus of the project. It may be notable, even given the small sample size that the students surveyed at Institution One did not report that they believed their campus offered many courses with sustainability content, nor did they feel that their class discussions

reflected a sustainability focus. That is slightly contrasted with Institution Two responses. This is of interest due to the fact that Institution One was assumed from the outset, to have a greater focus on the integration of sustainability within their coursework than Institution two. However, this is a cautious interpretation due to the sample size as well as differing perceptions and definitions of sustainability each person may hold. Each institutional group surveyed indicated that they were aware of offered activities with a sustainability focus that would indicate that campus messaging regarding some group programming is indeed working through administrative channels and down to the students.

### **Administrative structures and support**

Publicized initiatives and mission statements do not always reflect underlying relationships between departments or divisions. Shared responsibilities for programs and initiatives was mentioned frequently—especially with regards to faculty “wearing many hats” in an interdisciplinary environment that is a hallmark of both institutions. Interview questions focused on addressing the administrative push, support, or impediment in terms of campus sustainability on the organizational and curricular areas at each institution.

From a strictly structural standpoint, the two institutions fell under similar categories in the organizational make-up. The Office of Sustainability at Institution One is housed under the Finance and Administration department and managed by the Chief Financial Officer. It is grouped together with facilities and campus services. The official divisional page notes that they provide, “services which improve the University's financial and environmental sustainability, physical facilities, business processes, and personnel management” (“Finance and Administration,” n.d.). When asked about the operating budget for the office, the director noted that:

As a private institution, we don't tend to release information about departmental budgets. I'll tell you that our office's annual operating costs are well under \$100k. That is not, of course, in any way reflective of what the campus invests in education for sustainability. (personal communication, January 19, 2015)

Operating under the auspices of Finance and Administration, the Office of Sustainability works closely with Facilities. The director noted that relationships with a previous vice president were not as productive as she had hoped. This was echoed, in part, by other interviewees, when they offered examples of issues pertaining to hierarchical structures, militaristic governance and rigidity in the former Facilities management.

With regards to overall support at upper administrative levels, the director—and others—offered that financial support as well as physical space has been provided for sustainability-focused efforts. In fact, much of the interviewee substantiation for institutional effort was emphasized by examples of funding. Many noted the creation of the Center for Energy, Environment and Sustainability as an example of the university's efforts. One interviewee familiar with the endeavor, as well as the new master's in sustainability offered that:

a great deal of conversation has taken place within the environmental studies and science minor programs about what is important. Then what ended up happening was the center was created--largely for research funding purposes initially . . . and then a masters program was proposed and these new centers and structures have in some ways fragmented the collegiality of the educational endeavor. (personal communication, July 30, 2014)

The educational endeavors of individual departments are traditionally fragmented but not necessarily internally divisive. All faculty interviewed indicated that their immediate departments demonstrated no real interest but also provided no obstacle if they were individually interested in pursuing course content that involved sustainability-related concepts.

### **Collaboration across disciplines and departments**

Like many in HEIs, faculty at Institution One view themselves as autonomous units when it came to institutional mandates such as sustainability initiatives, definitions, or course content. Only two of the faculty interviewed noted any familiarity with the Office of Sustainability or their work. None indicated that they had had any working or collaborative relationships with Facilities personnel or other areas outside of their chosen academic disciplines with the exception of one individual familiar with the Office of Sustainability. A faculty member known for his academic work in environmental areas offered that, “no support trickles down from the sustainability office” (personal communication, October 9, 2014).

On the Facilities side of things, a project manager made the following point regarding frustrations when working with faculty:

It's hard with academia. In facilities we're trying to get something done, up, and running. Whereas in academia, they tend to want to ponder things for a long time and that's hard—especially when you have a deadline. You could bring one hundred people into these design sessions and get something done but they just want to ponder. (personal communication, July 7<sup>th</sup>, 2014)

Overall, based on interviewee information, crossing disciplinary lines is difficult enough without encouraging external collaborations. A faculty member that teaches in the interdisciplinary environmental sciences program and rejected a position in the new master's program, noted that rejection was in large part due to the fact that those in the humanities and social sciences were not being compensated while business, law, and the hard science professors received stipends to take on more teaching obligations. He found this problematic on multiple levels and questioned, "what if we set up a self-interest based institute which has nothing to do with our values?" (personal communication, July 30, 2014). Though constructive in practice for disseminating information to students, attempts at unifying departments and combining programmatic efforts sometimes proves difficult. The previous example regarding faculty stipends and feelings of inclusion at Institution One, are representative of the review of the literature.

### **Crossing lines at Institution Two**

Like Institution One, Institution Two operates with a belief in the benefit of interdisciplinary education. Their environmental sciences program—like Institution One's—brings together experts from a variety of fields, as does a uniquely humanistic and experiential watershed collaborative. Also like Institution One, based on conversations regarding collaborative efforts, crossing disciplinary lines in the form of an academic minor is much easier than crossing into other segments of campus where faculty or administrators are less comfortable. This was illustrated when a co-creator of their environmental studies program said that he was, "not very familiar with the facilities side of things and mostly concentrates on the academic piece." He offered that he was aware that the facilities director

has been proactive with little capital outlay in the addition of things like waterless urinals and solar panels (personal communication, May 22, 2014).

Other faculty that were interviewed were unaware of any distinct administrative obstacles to further collaboration within academics or branching out into other areas of the campus in the form of experiential or practical problem solving. Though they noted no obstacles, they also noted that there was no distinct push to do so. However, most were optimistic about positive change coming in light of the arrival of a new college president.

Several individuals did note previous work by staff and/or faculty that utilized some of the “real,” less publicized, work that was being undertaken on campus in an academic setting. None were aware of any current projects. When this topic was broached with those close to the Office of Sustainability, they noted that the obvious strengths at Institution Two lay in their facilities efforts whereas they have struggled to develop a relationship with the academic side (personal communication, May 13, 2014). This struggle appears balanced and several faculty offered that they perceived facilities administration to be “anti-academic” (personal communication, May 15, 2014; personal communication, November 25, 2014).

At Institution Two, the Office of Sustainability is led by the Director of Environmental Sustainability and functions with assistance from a sustainability coordinator. This office oversees the Grounds Manager as well. A staff member provided that, “We have a work-study budget of \$6,000. Our operations budget is less than \$15,000. It has been subsidized over the years with discretionary funds from the Division of Administration. Not heavily” (personal communication, January 20, 2014). Organizationally, they are under the oversight of the Vice President of Administration and this umbrella of departments includes general facilities, maintenance, dining services and also the campus bookstore among others.

In this case, the Vice President is a strong sustainability advocate and is responsible for catalyzing the facilities movement on campus—including the farm (personal communication, May 15, 2014).

From the facilities standpoint, increasing the involvement of the whole campus and encouraging ownership are important goals (personal communication, January 15, 2014). A closely involved administrator discussed the benefit of having an active alumni and engaged Board of Trustees that has demonstrated interest and investment in campus efforts. These elements might help to bridge some previously initiated, but now somewhat abandoned, linkages on campus. He noted the creation of the Sustainability Council in 2003 that also included two faculty members. While it started off energetically, faculty and staff moved on and initial projects and plans were largely discarded. He optimistically echoed the sentiments of others interviewed in regards to the installation of a proactive president and her interest in initiating a conversation amongst stakeholders, with special efforts aimed at college-wide curricular integration of sustainability-related material (personal communication, January 15, 2014).

### **Sustainability integration into the curricula**

Campus-wide curricular adoption of sustainability-related material is not yet a reality at either institution. Institution One was selected largely due to its publicized efforts of enhancing current teaching, offering workshops such as the curriculum project for faculty interested in adding sustainability-related content, and hosting of a national conference devoted to cross-curricular adoption of sustainability in 2010. Additionally, they contend that by 2010, approximately 100 courses were offered with some sustainability content (“Sustainability Strategic Plan,” 2012). Conversely, Institution Two was selected primarily

due to its substantial efforts in the way of physical operations and noteworthy campus sustainability.

Interviews yielded the most significant insights into this issue and dominant themes such as: the relational structure of the institution and individuals within departments, shared meaning construction, considerations of academic freedom, and compensation all arose.

### **Institution One**

When discussing the adoption or integration of a campus-wide, curricula infusion of sustainability, many interviewees pointed to the relationships between departments and individuals. Some felt that programs were potentially agenda driven and lacking in objective input (personal communication, July 30, 2014) while others optimistically referred to the Center for Energy, Environment, and Sustainability (CEES) and new MA program as beacons of change and co-mingling of departments and resources (personal communication, September 30, 2014; personal communication, October 2, 2014).

Though those examples are distinct entities, occupying separate research and programmatic space, prior formalized attempts to incorporate sustainability across the curricula have been undertaken. The curriculum project is an example of this. It was created using the Piedmont and Ponderosa Projects as models for helping faculty add sustainability-focused material to their courses. A \$500 stipend is available with half coming after the workshop completion and the other half with evidence of a new or revised syllabus. Typically held in May, at the time of this research, there was no current information is available for the upcoming year though it is possible that it will be made available at a later time.

Individuals that had participated or were familiar with the project offered information regarding the nature and structure of the program. One participant explained that alums of past workshops lead seminars on course additions, basic definition of sustainability, and campus initiatives. After they complete the two-day workshop and submit their syllabus, they are not required to do anything further—no follow up or assistance with learning outcomes is provided either (personal communication, October 9, 2014).

Formalized workshops assist with providing a framework. Even within that framework, opinions of the need for shared meaning construction vary, depending upon the position within the institution. As previously noted, most faculty generally saw no advantage to coming to a consensus when it came to the meaning and message of sustainability on campus. However, those charged with devising learning outcomes in interdisciplinary program areas or working with others in joint endeavors, noted the difficulty and ultimately lax effort that was exerted to come to a shared understanding of what was important for students to learn. Multiple faculty as well as an administrator made clear points arguing that the lack of integration has to do with uneven attempts, and an unwillingness to accept a common definition that would entail the standardization of offerings. One interviewee noted that:

There are multiple definitions of sustainability. They have different functions and roles and that doesn't undermine the strength of the endeavor. However for many people in some of the sciences and certainly in economics, they use that lack of ability to define it—and even some of the business school—as there not being anything 'real' to study because it's not empirical and clearly defined. This is again a

lack of understanding of certain theoretical issues on other peoples' parts. (personal communication, July 30, 2014)

Not everyone has been hampered by lengthy discussions. Demonstrating a more abrupt approach for construction, an individual close to the new MA program offered that it had taken only two meetings to determine learning outcomes (personal communication, July 24, 2014). Addressing this program as well as the research center, he noted that it draws in more faculty interest from the biological sciences and law—even though law faculty tended to be critical of the sustainability information. The interim director noted that they have had difficulties incorporating faculty from other departments such as the humanities and business due to seeming disinterest (personal communication, July 24, 2014).

Increasing faculty involvement was also understood in terms of academic freedom. While many faculty that were interviewed said that they spontaneously added sustainability-related content to their courses due to their own interests, most were unsure of the likelihood that a campus-wide curricula shift would take place. In several interviews with administrators close to the sustainability office, as well as a faculty member, the perception of curricular railroading emerged from differing perspectives. Tensions have arisen when the Office of Sustainability attempted to determine an academic definition of sustainability (personal communication, July 30, 2014; December 14, 2014). The attempt was unsuccessful. Additional issues arose when the new MA in Sustainability was in the planning stages; an undergraduate dean was essentially pushed out of the discussion after consensus could not be reached regarding faculty effort, course make-up and

pertinent knowledge provision (personal communication, July 24, 2014; personal communication, July 30, 2014).

Reaching consensus in terms of knowledge is only half of the battle. Incentives and compensation also prove difficult to navigate. As previously noted, the MA in Sustainability offers stipends for hard science, law, and business faculty but not those in other areas (personal communication, July 30, 2014). This was corroborated by an administrator within the program who noted that they have, “no dedicated faculty, so no salaries to pay—you can’t beat that business model” (personal communication, July 24, 2014). He went on to say that stipends were paid but did not specify for what areas. Lack of departmental depth and funding issues with “sharing” faculty create difficulties when required courses must be taught and faculty are asked to take on more students without compensation. This is an issue that has arisen in both the environmental studies program as well as the MA in Sustainability (personal communication, July 30, 2014).

### **Institution Two academic integration effort**

Like Institution One, the desire to integrate principles of sustainability content exists. Contacts at the Office of Sustainability expressed a desire as did some interviewed faculty. Similar themes arose within interviews at Institution Two regarding the potential acceptance and process of integration. Topics related to institutional relationships, meaning construction and meaning communication were all present in interviews. Issues related to academic freedom were not explicitly expressed, nor was the overt need for compensation.

Interviewed faculty members were initially approached via email. Those that replied and ultimately provided an interview were all actively working sustainability-related material into their courses either directly or indirectly making them more amenable to this discussion.

Most were confident in their grasp on how sustainability should be presented and appeared quite happy to determine what they needed on an individual, departmental and possibly larger, programmatic levels. Much autonomous work has been going on without large-scale oversight. This is largely due to the comfort of shared efforts and situated disciplines that conform to the college's mission. An individual working within different departments, noted a distinction that was implied by others when he said, "curricula is faculty driven, the farm is administratively driven" (personal communication, October 30, 2014). The idea of competing camps on campus was reiterated by others and most faculty that were interviewed had little experience or knowledge of how they could incorporate the physical campus—the realm of facilities—into their own work.

When the topic of departmental relationships, inter-disciplinarity and meaning was brought up, one faculty member noted that, ultimately what you have is a "bunch of people working independently with no grand plan—communication would make it all more effective" (personal communication, May 22, 2014).

The element of needed communication was raised by both participants interviewed on the facilities, and academic, side of the campus. While many faculty not involved in program construction, noted that they did not believe a shared meaning of sustainability was necessary, staff and administrators offered that, "It would be useful to know and convey the college's stance clearly" (personal communication, September 4, 2014). This sentiment was echoed by an upper level administrator currently working with the new president to make the integration of sustainability across the curricula a reality, which includes a shared vision and a shared meaning on some level (personal communication, January 15, 2015).

Overall, the communicated sentiments of campus stakeholders provided a breadth of information that could be understood as both foundational, and supplementary, to the other data strands. Divisiveness in structures and perceptions were evident in interviewed conversations, providing a basis for looking further into organizational cultures, management, and ESD integration potentials. Constructed meaning and considerations of word choice also proved enlightening in terms of the larger campus discussion. This discussion was not necessarily consistent, overt and definitely did not have the same import or engagement for all participants. That information, coupled with the student survey data, will provide the basis for the discussion in the following chapter.

## **Chapter 5: Discussion**

The themes derived in the results section will be carried over with specific attention as to why they were determined and the particular entanglement of meaning to the study. A discussion of how each, along with its subtexts, will be addressed in this chapter. Emphasis has been placed on the construction and control of meaning—or not—by administrative bodies such as the sustainability offices and how that is shared with other members of the institution. Narrative analysis and documents—both text-based and website materials—have been examined and will provide for a discussion rooted in a social constructivist discourse analysis focusing on addressing where, and how, gaps exist between what the HEI says it is doing (and how) and the perceptions of faculty and staff along with relevant survey data representing the narrative trickle down. The following discussion will address the shared meaning construction, control over terms, communication styles and related actions—both real and perceived for each institution.

### **Institutional meaning making**

One of the major questions involved in the project design, and literally translated into each interview, concerned the individual and shared definition of terms and space—sustainability as a concept, coursework, integrated subject etc. This project really sought to understand how the definition (or missing definition) contributes to the perceived focus of sustainability on the campus. Each institution went about defining—or not—sustainability somewhat differently. Given that only the Director of the Office of Sustainability at

Institution One could provide the institutional definition, it begged the question of what messages were being conveyed across the board.

### **Power in terms**

Within the confines of Institution One, interviewed administrators frequently spoke to the need to “educate” and “empower” or encourage “ownership” of the information and activities. This differed from the bulk of faculty who largely thought their messaging to be irrelevant and basically lost on the students unless it came in the form of a recycling bin in the case of Institution One. There appeared to be a disconnect in terms of who was understood to be responsible for communicating this message of sustainability and exactly what it looked like at both institutions. Given the absence of a shared definition, that is not surprising. Many of the individuals noted that the creation of an Office of Sustainability and the prospect of a “message” left too many thinking that campus sustainability was not a communal endeavor but rather segmented to that office and those employees.

Based on the data collection, it is possible that this segmentation might be purposeful on the part of Institution One. Hajer’s (1997) work in environmental discourse analysis—especially the political negotiation of terminology in the realm of institutional bias construction—speaks to issues of control, power and agency in the creation of meaning. Using that as a platform to understand these polyphonic qualitative narratives helps to create a sense of structure—or not—and is useful when examining the Office of Sustainability’s Director’s statement that we, “tell them what we want them to know in order to affect the group’s behavior.” This statement, on the heels of a reply regarding the flexibility of the definition of sustainability—while true in a diplomatic sense, contributes to that lack of coherence (common in environmental discourse) and leads to the disunity and inability to

reach consensus—especially on the academic side. Interviews with faculty and administrators illustrated that point. Additional references to economics and efficiencies by those in upper level sustainability positions as well as collected interview data and institutional literature, led to a safe recognition that economics and the environment were a tandem messaging strategy and underlying focus on the campus. Given the exclusivity, reputation for MBA, legal and medical graduates, this sustainability angle is unsurprising. Student survey data did not conform quite as tightly to that expectation however. Though Institution Two is recognized as a more “liberal” institution than Institution One, the survey data with regards to human exploitation, necessary environmental degradation for economic gain and similar questions demonstrated marked homogeneity in responses at both schools. This was an interesting and somewhat unexpected result.

Institution Two had an equal lack of shared meaning when it came to sustainability. That being said, there was a considerable amount of positivity on the part of staff, administration, and faculty regarding the aims of the college and their impact on the students that was not present at Institution One. Though some individuals were also concerned about the potential sequestering of sustainability due to the work of a dedicated staff, overall, most individuals seemed hopeful that even with autonomous actions such as adding extra content to their course or encouraging a football player to get his hands dirty on the farm, they were making a difference. Survey data did indicate that students felt well informed about campus activities as well as recycling protocols and food waste divergence.

The students’ responses indicated a greater depth of understanding within the scope of sustainability and corresponded to interviewees’ perception that social and environmental justice were dominant messages on the campus. There was a potential disconnect between

the perceived and the real with regards to the activity involvement of the students. While most interviewed expressed the belief that the students were very active in sustainability-related groups or functions, the survey data did not indicate a high level of activity.

It may not be that they are *not* active, but rather that they do not describe it in the same terms as staff or administrators. For instance, when asked what kind of activities they witnessed student involvement, the common answers were recycle mania or dorm energy competitions. The student data did not reflect that perception. When prompted to list what groups they were involved with, students were making connections to social and cultural elements of sustainability that those interviewed had possibly not considered. No survey respondents mentioned recycle mania. That implication could be that students do not assume that recycling is worthy of being considered an activity and is a rather mundane, expected practice. This differed from the opinion by most interviewed at Institution One that recycling seems to be the dominant message communicated by the Office of Sustainability. Most interviewed were pessimistic about even that sinking into their students.

What is absorbed by students and is transformed into translatable action is also pertinent in terms of the HEI itself. One of the driving forces for the construction of this project was examining the relationship between campus rhetoric and reality. Institution One, selected for its self-described emphasis on adopting sustainability throughout the curricula, did not actually seem to fulfill that claim. The bulk of referenced material promoted by the Office of Sustainability was related to food or technology and research and was corroborated by interviewees. Though there is nothing wrong with that, the fact that sustainability curricula workshop has not been updated in the past ten months may indicate that the instructional or academic side of the campus efforts has lessened in recent years. Based on

survey data and student responses, there was no discernible benefit provided by having what current additional courses exist on campus with sustainability in the syllabus. Given various interviewees' statements regarding the negative reception of attempts to create a shared curricular definition of sustainability, it is possible that bureaucratic diplomacy will engender better dialogue with necessary stakeholders, though plans for any large-scale integration of sustainability across the campus curricula seemed unrealized at the time of this research.

Sustainability across the campus is on the proverbial table at Institution Two. With a newly installed president, significant support, and a strong record of overall campus sustainability, the divide between facilities and academics may be bridged in the near future. This, in and of itself, is less a problem of communication but rather perception. None of the faculty interviewed had any direct dealings with the facilities side of campus and though communication was offered as a means to improve overall relations, they will first need to find shared ground.

Issues surrounding resource allocation—real or imagined—for the farm and a certain amount of jealousy will need to be dealt with prior to the establishment of a collegial and productive work environment. This divide is common amongst HEIs in the case of sustainability and points to a divergence in administrative, discursive, and even physical space. The production of meaning and recognized absence of dialogue between parties also validates work focusing on the political construction of knowledge within the realm of sustainability (see Hajer, 1997; Palmer, 2003; Tregidga, Milne, & Kearins, 2013). Given the energy and awareness of the collective parties on either side of the divide at Institution Two, it would appear that progress in this area is definitely possible and will likely involve real change.

### Words to act on

Though both institutions are small, private colleges catering to an interdisciplinary atmosphere, the absence of emphasis on compensation and lack of real disciplinary rigidity at Institution Two differed from Institution One. Looking at this within the realm of critical discourse, word choice reflects each institution's values and serves as a model to staff, administration, faculty and most importantly, students. After assessing word frequencies and addressing dominant themes, of the most interest was the use of the word "community" at Institution One.

Careful word choice was noted in the online marketing of rideshare advantages. In a 2013 media release, the Office of Sustainability offers that students might be suspicious of the term "alternative" and hopes that rather than a negative connection to subversiveness, they hope that, "alternative *transportation* brings to mind a sense of open sharing and community" ("Alternative Transportation," 2013). This speaks to efforts by the institution to shift the focus on community development and cohesion, indicating that changing some behaviors in an already established framework, is not only acceptable but also gently encouraged.

This bleeds directly into discursive literature regarding the overuse of buzzwords, such as the ubiquitous community (as indicated by Bourke & Meppem, 2000). The argument that it is a faulty mythologized ideological construct is key here. Both HEIs use it, but to what effect? Institution One likely does not want to be 'apart' from the community. Therefor their verbiage speaks to the participation in safe and easy events and faculty noting that they are not willing to rock any boats to start something new and novel but rather go along with the flow or join an already functioning group or event.

This differs slightly at Institution Two due to its outspoken foundation in social change. The word choice is riskier, less traditionally conservative than that of Institution One and this is evident in the Office of Sustainability's website. It utilizes action-oriented wording to inspire energy and involvement. Relational elements are also wisely added to the website with the provision of concrete examples of how the presented themes, initiatives, or campus activities directly impact the reader. In summary, community is used at Institution One to calm and ensure the students that what is being asked of them is, "normal" or acceptable, allowing distance as well as acceptance. Institution Two uses the term less frequently and seeks to engender a sense of communal action rather than simply "community."

Another important point related to word usage involves what is not being said, what is not included, or understood as important to the campus message. Embodied in both the collected data, as well as reviewed literature in areas of sustainability and discourse analysis, is the risk of objectivity. In this sense, words like "community" or "sustainability" or common environmentally-focused discourses may "become so firmly established that their contingency is forgotten" (see Laclau, 1990; Jorgenson & Phillips, 2002 as cited in Tregidga, Kearins, & Milne, 2013). This loss of contingency results in the idea that there is a set, unwavering meaning that is taken for granted. At both schools, it was assumed that the sustainability office would handle that meaning. Given the relationship between power legitimization and constructed meaning—especially the objectivity aspect—it is not surprising that most stakeholders that were interviewed, relinquished ownership of any definitions outside of their immediate area of expertise or focus.

Knowledge ownership may be fickle in an academic setting. The source of the campus messaging is vitally important for unpacking origin and definitional parameters. Sustainability offices are oftentimes offshoots of facilities management and reflective of that mindset. Values that are incorporated into particular offices—be it facilities or other administrative body, occupy inherently contested space when it comes to meaning construction and ultimately message communication. Approaching this constructed and contested meaning with a Foucauldian lens, it becomes apparent that whoever occupies positions of power and is given the authority to define usages—either academic or in the operational sense—will embed their own sense importance and values as they see fit (see Tregidga, Kearins, & Milne, 2013 for a detailed discussion regarding this point).

As HEIs develop strategic plans focused on their sustainability efforts and increase the profile of the Office of Sustainability, glossier communication emerges. In the case of Institution One, their director of Sustainability is a polished MBA with a lengthy administrative record that used the phrase “market penetration” in reference to how active students are on campus in sustainability-related activities. This differs from Institution Two where their Director has grounds maintenance experience and no MBA. One is neither better than the other, but depending on the public face, as well as the upper level administrative hand, campus efforts will likely look differently.

Also related to the message source is the issue of gender. References related to the difficulties of working within a male-dominated facilities hierarchy were made during Institution One interviews as well as the assumed perception of increased acceptance and flexibility of women to environmental issues. All of this raises the question about expectations of involvement and visibility. Interviewees at Institution One routinely

mentioned the effective politicking and rhetorical style of the director in her dealings. Most people noted that she was especially adept at making smooth transitions and ruffling few feathers—critical skillsets in higher education administration. However, this begs the question of gendered leadership style in sustainability offices--would a man in her position be as likely to use rhetoric or would stiff-arm tactics be an acceptable approach?

Institution Two also has a female in its Office of Sustainability but in the role of coordinator. She offered that she felt uncomfortable doing office energy audits because, “no one really wants to be told they are doing something wrong” (personal communication, May 15, 2014). This hesitance coupled with her gender and youth might make people take her less seriously.

Gender and leadership styles are only two components involved in the communicated messages of sustainability on HEI campuses in the United States. The explicit goals and focus of the campus, as well the less overt message can be understood as a complex, interlocking dialogue in which the stakeholders sometimes speak different languages. This project attempted to explore the messages, communicative style and student absorption as reflected in values and perceptions on two campuses of higher education. Much work is yet to be done in this area and the following section details specific limitations as well as recommendations for future work.

### **Limitations of the project**

This project was limited by a number of factors. One of the main issues encountered was related to the student survey deployment at one institution. Access to student emails was not gained as anticipated. This was largely unforeseen and contributed to a smaller than desired sample size and low response rates. Additionally, due to the eventual means of

deployment, the likelihood of respondents having some degree of affiliation to Office of Sustainability was great. In addition to having a truncated timeline due to access limitation, it also ultimately lessened the randomness of the sample. The goal was to not target students with prior awareness or relationships to the Sustainability offices or related initiatives. It is unlikely that that goal was met.

In terms of research design and instrument usage, the survey itself should be reworked. The questions in the “Values” section are too normative and too simplistic. It is a given that most surveyed individuals would respond with the idealized response when confronted with abstract questions that may, or may, not related directly to themselves. Recommendations for improving the instrument and data collection procedure follow this limitations section.

An additional limitation relates to the eventual difficulty in obtaining interview participants. While it was not expected that all staff, faculty and administrators contacted would leap to the interview table, the continual rejections and rerouting of interview requests to the Sustainability office at one institution resulted in a purposive sample of respondents that were closer to the center of campus sustainability than was originally planned.

A larger number of interviews could have provided more insights into the research question. Ultimately, given the phenomenological nature of the study, the interpreted results and linkages to the literature were dependent on the current researcher. Another individual may have found areas of importance—or not—that differed from this project’s results.

### **Recommendations for improved design**

A number of recommendations for improvement are suggested based on the completion of this project. Specific improvements to the research design would involve:

- A real push for individual institutional customization of the survey:
  - Increased depth based on campus familiarity of issues, initiatives and student demographics would be helpful to gain real insight into student understanding, actions and values;
- Student focus groups:
  - As is it was deployed, the survey assessed mostly generalized, socially appropriate issues that were likely to illicit normative answers;
  - Focus groups would get to the “why’s” of their awareness and actions; and
  - They would also eliminate the ease of answering, “yes, poverty is a real issue,” and contribute to a deeper understanding of how they process, use and act on provided information.

Given the push of sustainability initiatives and increased efforts of HEIs to adopt broader messaging with regards to both curricula as well as general campus activities and physical space, improving the manner in which we assess the real impact on students is increasing in importance. Refining the survey instruments, adding layers of qualitative data collection and improving the clarity of the overall project would assist with future HEI programming and more importantly, actual provision of information that translated into positive action.

### **A path forward: contributions and suggestions for further research**

Little previous research had been completed in the area of perceptions and values of students at the time of the project conception and it is still a lightly covered area of sustainability research in higher education. Given the sheer volume of information presented to students, staff, faculty, and administration on the campuses of HEIs around the globe,

understanding the strategies—hidden or direct—for the construction of meaning, (mis) communication, and receipt of sustainability information is an important matter to address. Insights from this work demonstrated that marked differences do exist in how we understand the concept and actionable work involved with sustainability. These insights add depth to the current discussion and increase the awareness of less obvious or overlooked factors related to implementing sustainability initiatives on higher education campuses. It is hoped that this multipronged, triangulated approach—unique to typical research designs in this field of study—will contribute directly to the body of fomenting knowledge in the area of sustainability in higher education. Given the complexity of the issue, this work may serve as an example of the need to place less emphasis on one particular area, or superficial assessment, and instead seek a holistic understanding of campus communication and action.

Areas of further concentration into the realms of communication and action should also include leadership and organizational styles with an emphasis placed on gendered differences in management and receptiveness to new ideas. This study identified interstices of tension related to management and overarching institutional structures that have not been previously addressed such as gender. Further research might also take on the ideas of socioeconomic and racial privilege and the disconnection from concrete issues in higher education as well as the general population.

Even though these campuses were small, private, and reasonably affluent, it is still likely that with some modification, the following suggestions would be applicable to other campuses or organizations. And after concluding this project, specific recommendations to move the discussion from an academic exercise to a point of action include:

- identifying the dominant campus culture,
- initiating and invigorating campus dialogue,
- encouraging collaboration,
- sharing an understanding of campus sustainability.
- empowering individuals across disciplines and departments

Understanding what matters and how that meaning is created and negotiated on a HEI campus is critically important. Institutional mission statements and strategic plans provide a fertile starting point to determine what matters. Statements and plans may also be interpreted differently or simply not embodied by everyone on campus. Assessing the motivation and direction of all stakeholders would be a beneficial jumping off point in order to discover what aspects are shared and what may need negotiation to find common ground.

Once the campus culture has been assessed, initiating and improving the basic campus dialogue would be a key step. This project demonstrated that definitions of commonly used words such as *sustainability* were not consistent, and perhaps much more importantly, that not everyone felt they had an equal voice. Establishing formal and informal opportunities for staff, faculty, administrators to communicate their interests, opinions, and expertise would be especially helpful to ensure that everyone felt not only valued, but also invested in the result.

Investment is aided by collaboration. Another key element that came from this project—and also corroborated by the literature review—was that perceptions of who handled sustainability on campus were often skewed by the individual's position on campus. Improving the dialogue will generate avenues for the interdepartmental and cross-campus collaboration necessary to see changes on a larger, more holistic scale.

The traditional divide in HEI between facilities and academics provides an example of the lacking collaborative effort currently existent on many HEI campuses—including those involved with this project. Though each side was aware of the disconnect and for the most part, desired a better working relationship, was unsure how to go about finding common ground. That commonality cannot happen without ensuring that everyone feels capable of their role.

Encouraging stakeholders to take the lead will not happen unless they feel capable of their position and comfortable with the task. An issue often plaguing sustainability initiatives on HEI campuses is related to the fact that some individuals feel that they are out of their depth when asked to add elements of sustainability to their course or take on a related task. This reticence may be mitigated by fostering a shared understanding of campus sustainability. Not all participants believed that a shared definition was a necessary component of campus sustainability. Though they are likely correct in that belief, it would be helpful to have some shared consensus of understanding and awareness of its usage on campus. A strict definition would likely be too rigid and not foster the widespread contributions desired from all parts of the campus. Allowing interpretation within an understood framework encourages ownership. That ownership and shared understanding would make it not only easier for faculty to incorporate into their coursework but also increase the likelihood that it would have a more significant impact on the student body if there was some consistency.

Consistency and confidence are both behavioral models for emulation. Encouraging and empowering stakeholders across the campus will increase the potential for collaborative and proactive efforts in the area of sustainability. All too often, departments or individuals

remain on the periphery, not lending a voice or playing a role in campus-wide initiatives. Awareness of how they might contribute to the effort begins with dialogue and a heightened sense of value in terms of the individual, as well as collective effort.

Strategies and/or pathways to achieve a shared understanding and collaborative campus effort in sustainability on campus would involve largely traditional avenues of organizational management. General workshops as well as curricula-specific workshops would be useful in communicating information and ensuring that individuals felt comfortable with concepts and their place within the conversation. Surveys of campus climate, informational sessions and informal dialogue opportunities would also assist with the process.

Less traditional in terms of typical HEI workplace strategies would be to encourage tran- and inter-departmental collaboration such as bridging the divide between facilities and academics. So often students are told that they are part of a 'campus community.' If that is in fact true, then the institutional structure can seek to embody that by demonstrating the value of each department in its contribution to all aspects of the campus by incorporating a wider variety of learning opportunities. This could be as simple as recognizing and encouraging service-learning opportunities that utilize the campus itself, as workshop or laboratory, and make use of the full body of campus expertise from bottom to top.

### **Concluding thoughts**

Recognizing opportunity and reflection are key factors when going forward after any project. The basis and subsequent formative design for this project was rooted in a desire to understand what real impact sustainability initiatives and messaging have on campus stakeholders within two institutions. The simple premise of this study was to provide deeper

in-sights beyond the usual internal case study to understand how, and what, information was communicated and whether or not students were actually acting on that communication.

In higher education, the basic goal is to communicate information—to educate. Given the breadth and endless variety of information and communication styles in the area of sustainability initiatives, deriving an understanding of how rhetoric and reality intertwine on HEI campuses became a foundational and useful element of this project. The ultimate result has been a reiteration of some knowns such as the difficulties involved with full campus cooperation. It has also new generated some new insights into the role that gender might play in managing sustainability offices as well as the creation of a specific informational climate with selective word choice.

Most importantly, it has raised new questions and new directions for research. This was not an abstract, theoretical endeavor but rather an attempt to improve how we create, share, and act on information pertaining to sustainability. Given the seriousness of the topic, it is hoped that this project will add to the national and international research communities' sustainability dialogue.

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## Appendix A

### Education for sustainable development (ESD)

ESD:

- is based on the principles and values that underlie sustainable development;
- deals with the well-being of all four dimensions of sustainability – environment, society, culture and economy;
- uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills;
- promotes lifelong learning;
- is locally relevant and culturally appropriate;
- is based on local needs, perceptions and conditions, but acknowledges that fulfilling local needs often has international effects and consequences;
- engages formal, non-formal and informal education;
- accommodates the evolving nature of sustainability;
- addresses content, taking into account context, global issues and local priorities;
- builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, an adaptable workforce, and a good quality of life;
- is interdisciplinary

(Characteristic of ESD, n.d.)

## Appendix B



Informed Consent  
Electronically disseminated  
Student Survey

The purpose of this survey is to explore what impact information and activities related to sustainability have on student perceptions, values, attitudes, and behavior.

Your participation in completing this survey is voluntary and you may decide to stop at any time for any reason with no penalty, or you may choose not to answer any of the survey questions. All responses will be kept anonymous and will not be linked to you in any way. You will be asked to complete 25 questions regarding your attitudes, perceptions, values and behaviors related to sustainability on your campus. This process should not take more than 10 minutes.

If you have any questions or concerns about the nature of this research or the survey please contact Stacy Schmauss, 336-413-4308, [schmausss@email.appstate.edu](mailto:schmausss@email.appstate.edu) or Dr. Les Bolt, Leadership and Educational Studies, 828-262-7045, or [irb@appstate.edu](mailto:irb@appstate.edu).

Appalachian State University's Institutional Review Board has determined this study to be exempt from IRB oversight.

**By continuing to the survey, I acknowledge that I am at least 18 years old, have read the above information, and provide my consent to participate under the terms above.**

Appendix C  
Institution One Survey Instrument

2. Age:
  - 18-20
  - 21-23
  - 24-26
  - 27-29
  - 30+
  
3. Gender:
  - male
  - female
  - other, specify if desired
  
4. I am currently a:
  - freshman
  - sophomore
  - junior
  - senior
  - other
  
5. I live:
  - on campus
  - off campus in university housing
  - off campus with family
  - off campus with friends
  - Other, please specify
  
6. I get the bulk of my news from:
  - newspapers
  - local television
  - national television
  - the internet
  - Other, please specify
  
7. I hike, camp or backpack often:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

8. I walk or ride a bicycle rather than drive a car whenever possible:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

9. I use public transportation whenever possible:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree  
If not, please explain:

10. My university offers many activities and/or groups focused on sustainability-related issues (environmental, social justice, human rights, etc):

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

11. I am currently active in campus groups focused on environmental or social justice issues:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree  
Please list groups active in:

18. My university offers many courses with a sustainability focus:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

19. Many of my professors discuss issues related to the environment or social equality in class:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

20. I have, or plan to take classes with environmental or sustainability-focused content:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

21. The media has greatly exaggerated reports of climate change and impending environmental crises:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

22. Humans have the right to alter the environment to suit their needs:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

23. Technological advances will fix our environmental problems:

Strongly Agree

Agree  
Neutral  
Disagree  
Strongly Disagree

24. Humans should adapt to their physical environment:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

25. Environmental degradation may be necessary for economic growth:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

26. The exploitation of some people may be required for economic growth:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

27. Protecting the environment should be a priority--even at the risk of economic losses for some:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

28. My actions affect others, even if I don't see their direct effect:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

29. We could learn from other cultures that live more harmoniously in their environments:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
30. Poverty is a serious issue facing many around the world:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
31. Access to a quality education is a universal right, which should be available to all people:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
32. Access to clean water is a universal right, which should be available to all people:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
33. I feel that our local and federal government should take action to reduce the effects of climate change and other environmental issues:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
34. I feel personally obligated to take action to help lessen the environmental and social problems facing the world today:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

Appendix D  
Institution Two Survey Instrument

2. Age:
  - 18-20
  - 21-23
  - 24-26
  - 27-29
  - 30+
  
3. Gender:
  - male
  - female
  - other, specify if desired
  
4. I am currently a:
  - first year
  - sophomore
  - junior
  - senior
  - other
  
5. I live:
  - on campus
  - off campus in university housing
  - off campus with family
  - off campus with friends
  - other, please specify
  
6. I get the bulk of my news from:
  - newspapers
  - local television
  - national television
  - the internet
  - other, please specify
  
7. I hike, camp or backpack often:  
Strongly Agree

Agree  
Neutral  
Disagree  
Strongly Disagree

8. I walk or ride a bicycle rather than drive a car whenever possible:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

9. I use public transportation whenever possible:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree  
If not, please explain:

10. I have used our campus bike shop services:

Yes  
No

11. My university offers many activities and/or groups focused on sustainability-related issues (environmental, social justice, human rights, etc.):

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

12. I feel well informed about sustainability-related events on campus:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

13. I am currently active in campus groups focused on environmental or social justice issues:

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

Please list groups active in:

14. My university offers many courses with a sustainability focus:

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

15. Many of my professors discuss issues related to the environment or social equality in class:

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

16. I have, or plan to take classes with environmental or sustainability-focused content:

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

17. I have a clear understanding of what can and cannot be recycled on campus:

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

18. I am aware that petroleum based fertilizers are NOT used on our campus grounds:

Strongly Agree

Agree

Neutral  
Disagree  
Strongly Disagree

19. I am aware of my electricity and water usage and make efforts to reduce my personal consumption whenever possible:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

20. I avoid buying products or supporting companies that are known to disregard the environment or human rights:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

21. I am aware that food waste from the campus cafeteria is diverted from the landfill:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

22. I purchase locally grown or sourced foods and products:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

23. I use a refillable water bottle (i.e. nalgene):

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

24. I have encouraged friends or family to alter their behavior to benefit the environment or welfare of others:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
25. I consider politicians' positions on environmental and social justice issues when voting or supporting them:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
26. The media has greatly exaggerated reports of climate change and impending environmental crises:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
27. Humans have the right to alter the environment to suit their needs:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
28. Technological advances will fix our environmental problems:
- Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree

29. Humans should adapt to their physical environment:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

30. Environmental degradation may be necessary for economic growth:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

31. The exploitation of some people may be required for economic growth:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

32. Protecting the environment should be a priority--even at the risk of economic losses for some:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

33. My actions affect others, even if I don't see their direct effect:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

34. We could learn from other cultures that live more harmoniously in their environments:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

35. Poverty is a serious issue facing many around the world:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

36. Access to a quality education is a universal right, which should be available to all people:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

37. Access to clean water is a universal right, which should be available to all people:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

38. I feel that our local and federal government should take action to reduce the effects of climate change and other environmental issues:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

39. I feel personally obligated to take action to help lessen the environmental and social problems facing the world today:

Strongly Agree  
Agree  
Neutral  
Disagree  
Strongly Disagree

## Appendix E

<b>Institution One Student Survey Results</b>			
	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b><i>Demographics</i></b>			
Age	67	1.55	.803
Gender	67	1.79	.410
Year in school	67	2.79	1.274
Residence	65	1.75	1.250
<b><i>Actions</i></b>			
I walk or ride my bike rather than drive a car whenever possible.	63	3.02	1.251
I hike/camp often.	66	3.06	1.051
I use public transportation whenever possible.	65	3.32	1.091
I avoid buying from companies with negative reputations (in terms of humans rights or environmental exploitation)	64	2.69	1.082
I encourage my friends to alter their behavior to benefit the environment or welfare of others.	67	2.28	1.098
I consider politicians' stances environmental and social justice when voting.	66	2.15	1.041
I am aware of my energy consumption and attempt to conserve.	66	2.12	.985
I purchase locally grown or sourced foods and products.	66	2.71	.973
I use a refillable water bottle.	66	1.79	1.144

<b><i>Campus life</i></b>			
My college offers many activities and/or groups with a sustainability focus (environmental, social justice, etc.).	64	2.39	1.078
I'm active in sustainability-focused groups	64	2.91	1.400
My university offers many courses offered with a sustainability focus.	65	3.18	.934
Many of my professors discuss issues related to the environment or social equality in class.	66	2.92	1.071
I take or plan to take sustainability-focused classes.	66	2.65	1.364
<b><i>Perceptions and Values</i></b>			
The media has exaggerated reports of climate change and impending environmental crises.	58	3.59	1.093
Humans have the right to alter the environment.	58	4.05	4.041
Technological advances will fix our environmental problems.	58	2.93	.746
Humans should adapt to their physical environment.	58	2.12	.623
Environmental degradation may be necessary for economic growth.	58	3.67	.906
Some human exploitation may be necessary for economic growth.	57	3.68	1.072
Protecting the environment should be a priority.	58	1.88	.880
My actions affect others, even if I don't see their direct	53	1.43	.572

effect.			
We can learn from other cultures.	55	1.56	.570
Poverty is a serious issue that many people face around the world.	54	1.20	.451
Access to a quality education is a universal right and should be available to all people.	55	1.38	.652
Access to clean water and should be available to all people.	57	1.19	.480
The government should act to reduce the effects of climate change and other environmental issues.	57	1.68	1.003
I feel personally obligated to act.	57	1.75	.892

## Appendix F

<b>Institution Two Student Survey Results</b>			
	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b><i>Demographics</i></b>			
Age	88	1.30	.459
Gender	87	1.68	.470
Year in school	87	2.63	.851
Residence	86	1.41	.845
<b><i>Actions</i></b>			
I walk or ride my bike rather than drive a car whenever possible.	88	2.81	1.173
I hike/camp often.	88	3.08	1.147
I use public transportation whenever possible.	76	3.43	1.181
I avoid buying from companies with negative reputations (in terms of humans rights or environmental exploitation)	84	2.51	1.197
I encourage my friends to alter their behavior to benefit the environment or welfare of others.	44	2.23	1.179
I consider politicians' stances environmental and social justice when voting.	44	2.05	1.120
I am aware of my energy consumption and attempt to conserve.	85	2.01	.994
I purchase locally grown or sourced foods and products.	44	2.52	1.045
I use a refillable water bottle.	45	1.71	.991

<b><i>Campus life</i></b>			
My college offers many activities and/or groups with a sustainability focus (environmental, social justice, etc.).	86	1.70	.737
I'm active in sustainability-focused groups	86	3.16	1.291
I feel well informed about campus sustainability initiatives/ offerings.	86	2.30	.882
I use the campus bike shop.	87	.25	.437
I am aware that food waste from the cafeteria is diverted from the landfill.	43	2.16	1.233
I have a clear understanding what can and cannot be recycled.	85	1.99	.982
I am aware that no petroleum-based fertilizers are used on campus grounds.	86	2.93	1.335
Many of my professors discuss issues related to the environment or social equality in class.	85	2.19	1.052
My university offers many courses offered with a sustainability focus.	86	2.34	.889
I take or plan to take sustainability-focused classes.	86	2.52	1.437
<b><i>Perceptions and Values</i></b>			
The media has exaggerated reports of climate change and impending environmental crises.	83	3.99	.969
Humans have the right to alter the environment.	83	3.75	1.069
Technological advances will fix our environmental	83	3.11	.924

problems.			
Humans should adapt to their physical environment.	83	2.16	.724
Environmental degradation may be necessary for economic growth.	80	4.00	1.055
Some human exploitation may be necessary for economic growth.	80	4.01	1.206
Protecting the environment should be a priority.	81	1.73	.852
My actions affect others, even if I don't see their direct effect.	82	1.32	.606
We can learn from other cultures.	82	1.37	.676
Poverty is a serious issue that many people face around the world.	81	1.32	.686
Access to a quality education is a universal right and should be available to all people.	82	1.39	.813
Access to clean water and should be available to all people.	82	1.16	.457
The government should act to reduce the effects of climate change and other environmental issues.	83	1.30	.579
I feel personally obligated to act.	82	1.68	.887

## Appendix G



### Interviewee Consent Form

I agree to participate as an interviewee in this research project, focusing on investigating the values, perceptions and behavioral connections and meanings made by students, faculty and administration when presented with education for sustainability, or related campus activities in higher education settings.

I understand that my comments will be audio recorded, transcribed, and used for dissertation research and publication purposes to be conducted by Stacy Schmauss in the Leadership and Educational Studies Department at Appalachian State University. The interview will occur one time, and last no longer than forty-five minutes in duration unless agreed upon by the interviewee. I understand that there are no foreseeable risks associated with my participation.

I give Stacy Schmauss, ownership of the tapes and transcripts from the interview(s) conducted with me and understand that tapes and transcripts will be kept in the researcher's possession. I understand that information or quotations from tapes and/or transcripts will be published following my review and approval. I understand I will receive no compensation for the interview.

I understand that the interview is voluntary and I can end it at any time without consequence. I also understand that if I have questions about this research project, I can call Stacy Schmauss at (336) 413-4308, Les Bolt at (828) 828-262-7045 or contact Appalachian State University's Office of Research Protections at (828) 262-7981 or [irb@appstate.edu](mailto:irb@appstate.edu).

Appalachian State University's Institutional Review Board has determined this study to be exempt from IRB oversight.

I request that my name **not** be used in connection with tapes, transcripts, or publications resulting from this interview.

I request that my name **be used** in connection with tapes, transcripts, or publications resulting from this interview.

---

Name of Interviewer (printed)

---

Name of Interviewee (printed)

\_\_\_\_\_  
Signature of Interviewer

Signature of Interviewee

\_\_\_\_\_  
Date(s) of Interview (s)

### **Vita**

Stacy Schmauss was born to Diane and Jay Schmauss in Lake City, Minnesota. She graduated from Hoquiam High School in 1992 and entered the United States Navy.

Following her military service she began her circuitous college career, resulting in a Bachelor of Arts from Washington State University in 2000 and Master of Arts degree from the University of North Carolina, Greensboro in 2003 prior to entering the doctoral program in Educational Leadership at Appalachian State University in 2010.

An exercise and music enthusiast, Ms. Schmauss may be found on a mountain trail, running on the beach, or behind a volunteer booth on any given day. She resides in Winston Salem, North Carolina with her three children and odd assortment of pets.



