Teaching Sustainability as a Fundamental Value in Two-Year Colleges: Two Case Studies of Achievement and Adversity

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Kimberly R. Criner
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by

KIMBERLY R. CRINER

has been approved for
the Environmental Studies program
and the College of Arts and Sciences by

______________________________

Ted E. Bernard
Professor of Environmental Studies

______________________________

Howard Dewald
Dean, College of Arts and Sciences
CRINER, KIMBERLY R., M.S., June 2012, Environmental Studies

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While the need for environmental education in the U.S. has been recognized for more than 40 years, there is still no widely excepted standard for teaching it as a fundamental value in higher education. The environmental and socio-economic challenges facing society today demand more than just knowledge of the natural world, but of social and economic systems as well. Two-year schools have unique challenges and advantages when it comes to sustainability education. The case studies in this thesis explore these challenges and advantages with the intent of arriving at conclusions as to how two-year colleges are implementing sustainability education in spite of the dominant disciplinary paradigm of education. The key variables identified are constituents and institutional characteristics that either support or impede the integration of sustainability into the curriculum; the effects of external politics on sustainability education; and common barriers to making sustainability education a fundamental value in two-year institutions in the U.S.

Approved: ______________________________________________________________

Ted E. Bernard
Professor of Environmental Studies
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CHAPTER ONE: INTRODUCTION

Sustainability – as it will be treated in this thesis – by definition and in practice is about “[creating] a civilization that can live…and proposer for long periods of time without undermining either natural ecosystems or the human ecosystem, meaning the complex, interwoven social systems of which civilization is built” (Goerner, Dyck, & Lagerroos, 2008, p. 31). But how do we teach society to rethink the progression of the last century, to reconsider the unity between their livelihoods and their ecosystems? We take for granted that campuses of higher education in the U.S., the institutions that will form eager minds and characters into productive and socially responsible citizens, would be the obvious and essential sites for enabling this transition. And we assume our students could indeed become the founders of a sustainable society, “one that can persist over generations, one that is far-seeing enough, flexible enough, and wise enough not to undermine either its physical or social systems of support” (Meadows, Meadows, & Randers, 1992 quoted in Sterling, 2001, p. 13).

While attending these institutions, the 18 million students presently enrolled in the U.S. are in a position to reconsider their future careers and their places in the world (Association for the Advancement of Sustainability in Higher Education {AASHE}, 2010). Think: careers that contribute to a stable, green economy, prioritizing efficiency, cradle to cradle production and renewable resources, and individual and societal awareness that reflects the interconnected relationships between human and natural systems. Many colleges and universities have begun to examine their infrastructure and processes, realizing their own aggregate impact on the planet. There is also an
opportunity here to inject lessons for students not only about individual choices, but also about the interconnectedness of their world.

Environmental Ed.: A History

The recognition of the importance of environmental education is in no way new. In fact there have been a number of national and international proclamations calling for environmental education. In the U.S., the Environmental Education Act, which established the Office of Environmental Education (OEE) and made grant funding available for environmental education curricular development, was signed in 1970 (Baker, 2000). The 1980s saw the OEE dissolved and the act rendered obsolete as Congress moved toward transferring educational leadership to the state level (Baker, 2000). The spirit of the act was renewed in 1990 when Congress passed the National Environmental Education Act (NEEA), which reestablished the OEE, housed within the U.S. Environmental Protection Agency (EPA), and charged the EPA with providing “national leadership to increase environmental literacy” (Baker, 2000, & U.S. Environmental Protection Agency {USEPA}, 2011).

Section 2.(a) “Findings” of the NEEA asserts that Congress has found that:
(3) Environmental problems represent as significant a threat to the quality of life and economic vitality of urban areas as they do the natural balance of rural areas.
(4) Effective response to complex environmental problems requires understanding of the natural and built environment, awareness of environmental problems and their origins (including those in urban areas), and the skills to solve these problems (USEPA, 2011).

Notice that the tri-legged buzzword of today, “sustainability,” is not yet appearing here, but the NEEA clearly notes the connection between environmental protection and economic development, as well as the importance of education in providing the resources
to counter said environmental problems. One should pay particular attention to Section 2.(b) titled “Policy”:

It is the policy of the United States to establish and support a program of education on the environment, for students and personnel working with students, through activities in schools, institutions of higher education, and related educational activities, and to encourage postsecondary students to pursue careers related to the environment (USEPA, 2011).

This thesis is not intended to solve the frustrating puzzle of why, now 40 years later, there is still a very recognized need for this kind of education. Rather, this history is meant to illustrate that the recognition that we are not born programmed with a user’s guide for our fragile planet is not radical. In fact, a series of textbooks by G. Tyler Miller, Jr. started to appear in the early 1970’s to serve as that guidebook. For example, Miller’s Living in the Environment, first published in 1979 and now in its 17th edition, brought new knowledge on ecosystems and humans’ interaction with them, formerly available mostly in piecemeal articles, into an easily accessible, comprehensive volume for students and instructors alike. And while the U.S. Congress was waxing poetic about their mission for environmental education, similar efforts were taking place on an international front.

The Talloires Declaration, which asks colleges and universities to “educate for environmentally responsible citizenship,” was also composed in 1990 at an international conference of university presidents and chancellors on “The Role of Universities in Environmental Management and Sustainable Development,” which took place at the Tufts University European Center in Talloires, France (University Leaders for a Sustainable Future {ULSF}, 2008). The document called for the creation of a Secretariat to oversee the adoption of the declaration by more institutions and to foster them in its mission (ULSF, 2008). Today this role is maintained by the Association of University
Leaders for a Sustainable Future and the document today has over 400 university signatures from over 50 countries (ULSF, 2008). For the record, Tufts University continued to play a role in the leadership and promotion of the Declaration through 1997, and today Tufts carries on a hybrid of the mission through their international Talloires Network, which was founded at the Talloires Conference 2005, from which also came the Talloires Declaration on Civic Roles and Social Responsibilities (ULSF, 2008, & The Talloires Network, 2012).

The more recent 2007 American College and University Presidents’ Climate Commitment (ACUPCC) calls for colleges and universities to “[model] ways to eliminate global warming emissions…by providing the knowledge and the educated graduates to achieve climate neutrality” (ACUPCC, 2012). The Climate Commitment charges campuses to ultimately develop and implement a climate action plan that will bring them to climate neutrality, with education being as important as energy inventorying and infrastructure; the Commitment text asserts that campuses “integrating sustainability into their curriculum will better serve their students and meet their social mandate to help create a thriving, ethical and civil society” (ACUPCC, 2012). Yet, despite such proponents for sustainability education (not to mention a U.S. policy for environmental education and career training!) for more than three decades, the majority of colleges and universities in the U.S. are struggling against the dominant, disciplinary paradigm of higher education to integrate these concepts as core values across the curriculum.
Political (Un)Sustainability

My initial research into efforts of Ohio public institutions of higher education to integrate sustainability into their curricula, which began in the spring of 2010, was originally meant to inform the Ohio Board of Regents (OBR) of existence of these efforts and to make recommendations about how they might better support such initiatives. The result of the research was to be a consultant’s report to OBR as described by the requirements of the Ohio University Master of Science in Environmental Studies Environmental Leadership option for graduation.

The fate and impact of this report was unfortunately dictated by the (un)sustainability of political support that backed it. OBR’s first and heretofore only Sustainability Projects Coordinator, to whom the report would have been submitted for consideration and further action, left OBR and was not replaced. Board of Regents’ supervision of the report was then handed to the Executive Vice Chancellor, an individual who in theory supported the project, but whose higher rank and plethora of responsibilities unsurprisingly left little room for priority or expectation for the project. Finally, the November 2010 gubernatorial election brought a political upheaval which not only eliminated an audience for the report, but also left the future leadership and goals of OBR uncertain. The ousted Governor Ted Strickland had become known as a leader in higher education reform, promising to streamline the decentralized system with his newly established University System of Ohio (Grasgreen, 2010). President of the Ohio Association of Community Colleges, Ron Abrams, said of the outlook of the present reforms if John Kasich were elected “...A lot of work in the strategic plan is just getting off to a start [and] it depends on multi-year efforts to continue...I think everybody truly
believes that a lot of what we’ve done will possibly go by the wayside” (Grasgreen, 2010).

Several such worries were confirmed when in February 2011, the Strickland-appointed chancellor of the Ohio Board of Regents, Eric Fingerhut, stepped down. Fingerhut, on board with Strickland reforms, had engineered a 10-year strategic plan, that had been “hailed by many as a national model for the future of public higher education,” for the University System of Ohio in 2008 (Kelderman, 2011). His departure surely left the longevity of this plan in jeopardy. Kasich’s election would prove to threaten sustainability beyond the college campus when he began to eye the natural gas deposits in the Marcellus Shale field underlying eastern Ohio (Johnson, 2010). He has proven poised to “‘exploit the wonders of [the] state’” in the name of business, including “drilling for oil and gas in state parks and on state land” (Johnson, 2010).

Herein lies the context for this thesis. While the disciplinary paradigm and structure of higher education pose one set of challenges for sustainability education, the undermining of the potential of this report by changes in leadership suggest that sustainability initiatives within this higher education system are only as stable as the positions of the people leading them. The statewide political support needed to unite them is absent as long as it is subject to party politics.

Research Question

In the nearly three years that I have been examining trends in teaching sustainability in higher education, my attention has come to focus on the unique challenges and advantages of community colleges and regional campuses. While also
fighting against the dominant paradigm that obscures interdisciplinary teaching in four-year research universities, these largely two-year institutions have their own unique challenges having to do with educational expectations and level of investment by both students and faculty. Meanwhile, the creativity and collaboration of more isolated environments serves to inspire home-grown approaches from a variety of unassuming leaders.

This thesis asks the question: Given the traditional organizational structures and paradigms of higher education, how have a community college and a regional campus system in rural Ohio managed to incorporate sustainability both into their academic programs and across their curricula?
CHAPTER TWO: LITERATURE REVIEW

The dominant philosophy of higher education in the U.S. creates many barriers to the implantation of sustainability in the curriculum. On a foundational level, there is the idea that the goal of educating is to impart upon students lessons from the teacher. Freire (1970, p. 71-72) described this as the “banking” concept of education, in which the role of students “extends only as far as receiving, filing and storing the deposits” of the teachers’ narrations, “which are detached from reality, disconnected from the totality that engendered them and could give them significance.” Here is illustrated a fundamental error of an educational system that does not teach students how their newly-digested knowledge applies to the world around them. Even in the case of environmental education, without the collaborative connection between disciplines and the understanding of how it plays out in the world around, lessons are delivered as abstractions or objects of study, rather than innovative ways of thinking and living (Orr, 1994; Haigh, 2005). Haigh (2005) argues that teaching sustainability is still seen as an addition to existing curricula, rather than a change in thinking or approach. As Sherren puts it, sustainability is seen as “the ‘soft’ option for study, rather than the biggest challenge of our continuing existence” (2007, p. 342).

When it comes to approaching the present environmental problems, our system of learning and knowing is flawed. By compartmentalizing knowledge into disciplines we are taught to see challenges as separate rather than interconnected, to believe that political science, ecology, and economics have nothing to do with one another (Cortese, 2003; Orr, 1994). The existing paradigm focuses on the competitive and successful individual, resulting in emerging professionals with assumptions of human dominance, faith in
technology, and little concept of cooperative efforts, which can be applied to all levels of systems (Cortese, 2003). Given this, it is no wonder that apathy to act toward larger ecological problems is so generally apparent in society; we so trustingly believe that technological advances will help us come out on top - at worst, make due - as we always have.

In order to understand how something as seemingly as empowering as acquiring knowledge became so backward, one must look at the Prussian model on which our modern schools are based (Goerner et al, 2008). “The bureaucracy not only prescribed curriculum, it also policed it for political correctness and used it to inculcate beliefs supportive of the political status quo” (Goerner et al, 2008, p. 278). It’s no wonder that an educational system designed for the type of society it wanted to produce, is failing for the same reasons that society is, and why it cannot enlighten us fast enough to save us from ourselves (Goerner et al, 2008, pp. 279-280). To overcome this pattern and to face our environmental challenges, Orr (1994) urges us to rethink education.

Changing the Paradigm

Orr (1994) credits the present disorder of our ecosystems to the trend in education of placing humanity outside, even above, its ecological setting. He suggests six principles upon which education for a living planet should be based (Orr, 1994). First and foremost, all education should be environmental education; students should be taught to learn and live within their natural environment, not as if it is separate (Orr, 1994). Within this context, several of his principles combine to value the purpose of education as the mastery of one’s character and citizenship, not of a given subject; those who are educated
are responsible for how that education is used, including its effects on ecosystems and human communities (Orr, 1994). Lastly, educational institutions should lead by example through their own sustainable practices and consider creative processes and places for education to take place (Orr, 1994). After all, learning does not cease when students leave the classroom – after all, learning begins long before we ever go to school – and they should be prepared to apply critical thinking outside of this setting (Orr, 1994).

Taking these principles a few steps further, Orr (1994) offers two solutions for practicing them within the current disciplinary system. By learning about natural systems through face-to-face or hands-on field experiences abstraction would be removed, the study of place would be enhanced, various disciplines would be called upon, and aesthetic value would be introduced (Orr, 1994). Furthermore, he advocates for the engagement of both student assignments and faculty research in real world problem solving (Orr, 1994). This would encourage collaborative thinking, the recognition of the world as a classroom, and empowerment of everyone involved to believe they are capable of effecting change for the good.

This type of “active learning” is what Stibbe and Luna (2009, p. 10) prescribe for acquiring “sustainability literacy,” or those “skills, attitudes, competencies, dispositions and values that are necessary for surviving and thriving in the declining conditions of the world in ways which slow down that decline as far as possible.” And this type of empowerment to practice, to resilience amid the recognition that we’ve passed key tipping points will be crucial for society’s survival when that time comes (Gilding, 2011, pp. 126-127).
Sterling (2001) echoes Orr’s concern for the values and organization of the educational system and argues for its complete overhaul. He identifies two crises with education in the existing paradigm: first, it is limited in helping us deal with our most pressing problems, and second, it allows managerialist (recall the Prussian model of education cited earlier) and market values to override democratic ones. When reasoning for an overhaul of this system, a complete paradigm change, Sterling makes a simple case: “educational systems need to engage in deep change in order to facilitate deep change” (2001, p. 15). Sterling uses the term “sustainable education” with purpose, not just to describe the concepts therein, but to imply a new type of education, which values both society and ecology. This would be a “second order change,” redesigning the whole system on a collaborative basis, rather than a change of the first order, or adjusting the existing system.

The drawbacks of adjusting the current educational system, by adding more environmental education, for example, is that changes promoted within will continue to be outweighed by the larger educational system, the socio-political system that shapes that larger system, and the cultural trends of that society (Sterling, 2001). Working against any sort of evolution of those higher entities and institutions is at the expense of students’ energies on storing the deposits of knowledge from their teachers, as they are taught to do, rather than generating creative power and developing the critical consciousness to elevate them as “transformers of the world” (Freire, 1970, p. 73). Thus is the cyclical nature of the current educational system’s stunted ability to create social change.
Meanwhile, Sterling (2001) acknowledges that time is not on our side for a second order change; institutional change is slow, and the many mounting environmental crises are outrunning our ability to do anything about them. For one - and what will definitely be the cause of many others - even if we halted all greenhouse gas emissions immediately, we would still have another .5 to 1.0 degrees Celsius to look forward to, on top of the .8 degrees of warming we’ve already brought on (Orr, 2009, p. 2). This is due to the fact that much of the energy from heat trapping greenhouse gases are absorbed in the uppermost layers of the ocean; only after the ocean begins to subsequently warm will increased temperatures, and their ecosystem-altering effects be observed (Gilding, 2001, p. 57). As Orr put it, “We are now in a close race between our capacity to change at a global scale and the forces we have unleashed” (2009, p. 4). While a complete paradigm shift might be desirable, there have been a few studies which aim to give practical direction to those attempting to make change right now, within the existing educational system.

Change Strategies and Canons

In 2010, McNamara set out to study leadership strategies that promote successful change efforts in higher education in regard to sustainability. The study surveyed the 330 Association for the Advancement of Sustainability in Higher Education (AASHE) member institutions about their leadership, strategies, and progress of sustainability initiatives on their campuses, including curriculum. Responses to the curriculum portion of the survey indicated that 15% of participating institutions had not included curriculum in their sustainability goals; another 12% had made no progress; while 20% felt they had
achieved their curricula goals (McNamara, 2010). This study did not reveal what the goals of individual institutions were and therefore it is unknown just how encompassing their “achieved” goals actually are. Moreover, it is clear that some schools still do not even consider the academic component when thinking about sustainability on campus.

McNamara (2010) found that faculty members were the catalysts for change in more than 50% of participating institutions. However, they were also identified among those constituent groups found to be resistant or indifferent. This study concluded that sustainability initiatives, especially as they pertain to curriculum, benefit from the engagement of departments across campus; otherwise, opportunities for collaboration are limited and efforts become entrenched in one discipline (McNamara, 2010). Some recommendations for engaging more faculty members in these efforts were to provide incentives for adapting courses or adding new ones, and allowing release time for faculty education on curriculum development (McNamara, 2010). Both of these suggest the necessity of support and encouragement from higher levels such as department heads or administrators.

Sherren (2007) complements this study of leadership strategies by drawing conclusions on content for curriculum initiatives. Finding a gap between conceptual and case work, Sherren (2007) surveyed attendees at two sustainability conferences in February and October of 2005. Her purpose was to speak to practitioners and planning committees about the areas of study that should be included in a sustainability education initiative or program. Participants were asked to identify what they would recommend as core and elective courses for a new undergraduate degree in sustainability by choosing from a list of disciplines. Over half the respondents identified the following subject areas
as being at the core of teaching sustainability: ecology, environmental science, economics, ethics, policy, resource management, cultural, and international studies. Disciplines that were not chosen to be either core or elective were: health and behavioral sciences, history, and archaeology (Sherren, 2007).

This study was not without bias. Nearly 100% of participants identified their area of study as either core or elective. Furthermore, they were twice as likely to choose their own expertise as a core area (Sherren, 2007). Therefore, those aforementioned topics of study not chosen as essential or optional were obviously not represented in the study participants. And yet, they could all be argued at least supplemental to understanding sustainability: is human health not affected by the environment? Does sustainability consciousness not (hopefully) induce certain human behavior? Are historic events not important in understanding cause and effect for our own future? And does archaeology not treat the timelines and extinctions of species, ergo their sustainability? While those with a competent grasp of sustainability understand it as encompassing everything, “everything” hardly makes a plausible avenue of undergraduate study (meaning, yes, something probably has to go). Yet, the omission of these very relevant subjects indicates that most faculty still hold tight to their own disciplines.

One benefit of the study is that it allowed participants to imagine an ideal mix of study without becoming bogged down with processes and approvals on their own campus. One must recognize, however, that this study deals solely with the creation of a new major in sustainability. While the spread of such programs would be valuable in attracting more students to the study of, and professional careers in, sustainability, the
capacity of such a program would do little toward teaching sustainability across the curriculum.

Efforts on the Ground

To overcome the challenges set by the current structures and paradigms of higher education, several U.S. institutions have developed their own models for sustainability education. The following will present just a few of the examples that have been described in the literature.

The Ponderosa Project at Northern Arizona University (launched 1995) and the Piedmont Project at Emory University (launched 2000) are similar programs that train faculty members on integrating sustainability into their curricula, no matter the discipline (Bardaglio, 2007). The reasoning here is that it is the university which is responsible for teaching sustainability, not a single program (Bardaglio, 2007). These projects invite not only their own faculty, but faculty from other institutions who will hopefully turn around and promote the same practice at their own school. The Kanawha Project, which was established at Ohio University by Dr. Michele Morrone after attending the Piedmont Project at Emory University, and which will be studied in this thesis, is an example of this intended outgrowth.

In the case of Berea College, aligning physical operations with curriculum has served to unite the school in its mission of systematic sustainability and stewardship (Bardaglio, 2007). The college utilizes its 1,000 acres of farmland and 8,000 acres of forest and riparian ecosystems as learning laboratories; meanwhile a green-design
housing project allows married or single-parent students to learn about sustainable living outside of their courses (Bardaglio, 2007).

Still other institutions have chosen place-based programs as vehicles for teaching sustainability. Michigan State University reasons that sustainability cannot be taught as a “grand abstraction,” nor “can we understand ourselves or our behaviors in disembodied, generic ways” (DeLind & Link, 2004, p. 124). Thus, they created a two-credit seminar called “Our Place on Earth,” a joint effort between a dozen colleges and departments, in hopes of promoting a sense of respect and responsibility among students for the place they inhabit. The course utilizes speakers, readings, and out-of-classroom experiences around campus and in nearby natural areas, prompting students to reflect on the sustainability of relationships, natural and man-made, that surround them (DeLind & Link, 2004).

By requiring that global environmental awareness and social responsibility are components of all degrees, Oakland Community College in Oakland County, Michigan, is seeking to make sure that each of their graduates will be environmentally literate (Rowe, 2004). These learning objectives were identified through environmental scanning of key trends in society and education. The scan identified core competencies ranging from critical thinking and communication skills, to those promoting sustainability. By adopting competencies dealing with sustainability along with those that were more commonly acceptable in higher education, the college’s Curriculum Research Task Force was able to gain support and approval for the overhaul of the curriculum that was necessary to thread these themes throughout (Rowe, 2004). While each of these cases
depicts a varied approach and degree of success, national or regional unity in these efforts has been heretofore lacking.

A Call to Action

The Association for the Advancement of Sustainability in Higher Education\(^1\) (AASHE) made sustainability in curriculum a priority in their 2010 campaign A Call to Action, which produced a report of the same name. Out of a summit drawing faculty from institutions across the country came a document of actions and recommendations toward bringing about a national movement. AASHE differentiates curriculum from other sustainability initiatives in that it cannot be achieved through legislation (though, given my own OBR experience, I would argue that state support can only help, and I hope it will come to pass in a meaningful way sooner rather than later); rather they see the movement being led by the 1.2 million faculty across the country (AASHE, 2010). To this end, AASHE hosts a biannual Curriculum Leadership Workshop where faculty representatives receive training on how to promote sustainability curriculum development on their campuses. The association set the goal of having 10% of courses nationwide “help students understand the interaction between social, environmental, and economic forces, and to apply that understanding to a real world problem” by the end of 2011\(^2\) (AASHE, 2010).

\(^1\) Founded in 2005, AASHE coordinates campus sustainability efforts both regional and nationally, in addition to acting as the North American professional association for those interested in advancing these initiatives (AASHE, 2012).

\(^2\) As of June 2012, there has been no follow up report to the *A Call to Action* publication. During the Fall 2011 AASHE annual conference Curriculum Convocation a verbal update of progress toward creating regional network centers for curriculum resources, among other efforts, was delivered, but such quantitative measurement of how many students are learning what about sustainability was not offered. I refer now to my later assertion that sustainability curriculum initiatives and efforts at measuring them are
AASHE’s *A Call to Action* recommended the establishment of regional centers that would serve to coordinate faculty development workshops and support their constituents within the unique context of their region. Campus-level recommendations for furthering sustainability education included: developing and adopting sustainability learning outcomes; recognizing faculty for their efforts; tying sustainable practice to education; and writing sustainability into strategic plans, among others. If AASHE’s national initiative gains momentum it could speed the acceptance of, or at least spread support for, sustainability education within our current disciplinary system.

Conclusion

The literature argues not only for the necessity of educating about sustainability to meet head-on the environmental problems modern technologies have set into motion, but also for the reform of our current system of higher education. As Jensen wrote, “the success of our educational system should be judged on the basis not of what graduates know but of their attitude toward what they know” (Jensen, 2008, p. 298).

According to Freire (1970), students are given little opportunity to form any attitudes as part of their educational experience, instead their instructed focus is on depositing and storing knowledge. What’s more, with knowledge compartmentalized into disciplines, graduates are lacking systems-based approaches to problem solving. In light of this, Orr (1994) encourages the reconsideration of the intended purpose and value system of education, while Sterling (2001), points to a complete shift in the educational paradigm as an answer. Others, such as Sherren (2007), attempting to offer guidance still too widely varied to lend to quantitative analysis on a national level. But I would guess that STARS will help AASHE measure their progress toward this goal in the near future.
within the current system, are asking practical but limiting questions about creating change on the campus level.

There is also more written about individual efforts (Bardaglio, 2007, Delind & Link, 2004, & Rowe, 2004), mostly shining light on their achievements to this end. AASHE’s A Call to Action poses perhaps the most promising possibility at present of uniting these piecemeal projects into a national movement and having a real effect on U.S. graduates’ understanding of sustainability.
CHAPTER THREE: METHODOLOGY

In order to address my research question I set out to explore two case studies of Ohio public institutions of higher education, both in rural southeastern Ohio, and their efforts, processes, and challenges to integrate sustainability into their curricula. The case studies are Hocking College (an example of a technical/transfer college) and Ohio University’s regional campuses (an example of a regional campus system). Through my scan of the literature I developed the series of sub-questions that follow. The literature likewise helped me to form assertions about what answers I might find in my own case studies:

- Question 1: Which campus constituents have been key players in advocating for, creating, or deterring sustainability curricula?
  - Assertion: (A) Faculty members who have personal connections to sustainability issues and/or who are in tune with the mounting environmental and socio-economic crises we face and recognize a responsibility toward teaching it, as well as supportive administrators have been advocates for sustainability curricula. (B) Faculty members that are unaware of sustainability issues, who do not understand sustainability or its connection to their discipline, and who hold tight to the disciplinary paradigm in which they were educated will be reluctant participants toward the goal of integrating sustainability curricula.

- Question 2: How do institutional practices and academic sustainability efforts interact?
• Assertion: Institutional practices and academic sustainability interact in such ways that sustainable infrastructure and initiatives on campus can be used as learning tools or demonstration “labs” for students. Students may also learn from interacting with sustainability practices on campus by investigating solutions to problems or short-comings in campus sustainability.

• Question 3: What institutional characteristics have enhanced or impeded sustainability curricula?

• Assertion: (A) Departmental silos, dependence on compartmentalized knowledge, and the tendency to focus on faculty/student advancement over education for character and citizenship are institutional characteristics common in U.S. higher education that have been impediments to sustainability curricula. (B) Instances of sustainable infrastructure and practice being used to enhance educational experiences, as well as success stories of place-based training, have enhanced sustainability curricula.

• Question 4: How have campus constituents responded to the integration or creation of sustainability curricula?

• Assertion: Campus administration and academic affairs boards have been accepting, in theory, of sustainability curricula when it is tied into existing campus goals. Faculty will largely react according to the camp they fall into in question 1.
• Question 5: How have external politics affected the integration or creation of sustainability curricula?

• Assertion: External politics will affect the integration or creation of sustainability curricula according to the popular political platforms of the current administration, leaving sustainability curricula vulnerable to inevitable political change.

• Question 6: What challenges to integrating or creating sustainability curricula have been overcome?

• Assertion: The challenging institutional characteristics in question 3 as well as the reluctant faculty attitudes in question 1 have been overcome in some cases by engaging faculty through training or incentives.

• Question 7: What barriers remain to integrating or creating sustainability curricula?

• Assertion: The barriers in question 1 and 3 still exist, stunting the system’s and students’ ability to effect social change; meanwhile, curriculum enhancement is not always seen as a sustainability goal.

Snapshot: Hocking College

Founded in 1968, Hocking College is located on 2,300 acres in Nelsonville, OH and serves more than 6,000 students through over 50 associate degree programs (Hocking College, 2010). They are probably best known for their Natural Resource studies,
including forestry, ecotourism, and wildlife management, among many, which utilize Hocking’s expansive tracts of forested land for hands-on learning. The student population is composed of both on-campus residents and local student commuters (Hocking College, 2010). In addition to technical career preparation, Hocking also offers general education transfer options and developmental education (Hocking College, 2010).

Hocking College has started using sustainable practice already present on campus as an educational tool to be incorporated into departmental curricula. Namely, the sustainable forest management plan, which they recently took on in order to maintain their campus forests, rich as they are in learning resources, lends itself as an educational component in the forestry and wildlife departments. And there are plans for other departments to begin making use of it as well. Hocking has also introduced a sustainability awareness assessment into its first-year orientation programs (called “Smart Start”) and sustainability is being proposed as an independent thread among the college’s stated learning objectives which are echoed for students throughout their years there, what Hocking calls “Focus on Success.” It was this multi-faceted, in-process approach by Hocking that made them an attractive case study for this thesis.

Snapshot: Ohio University Regional System

The mission of the Ohio University regional campus system, comprised of Chillicothe, Eastern, Lancaster, Southern, and Zanesville, is to provide high-quality education throughout southeastern Ohio (Ohio University Office of Regional Campuses {OUORC}, 2009). They were established in response to the 1944 GI Bill, which invited more than 2 million veterans of World War II to go to college (OUORC, 2009). Today,
these regional campuses offer experiences and flexibility much like a community college, allowing students to pursue a degree or enhance their job skills while living at home, working, or caring for a family. They also offer transfer options to the Athens main campus and other four-year universities and colleges (OUORC, 2009). Each of the regional campuses is populated entirely by off-campus commuters.

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Students / FTE</th>
<th>Programs Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chillicothe</td>
<td>2305 / 1778 FTE</td>
<td>Nursing, Education, Human Services Technology, Law Enforcement Technology</td>
</tr>
<tr>
<td>Eastern</td>
<td>1017 / 675 FTE</td>
<td>Criminal Justice, Early Childhood Education, Community Health Services, Exercise Physiology</td>
</tr>
<tr>
<td>Lancaster &amp; Pickerington Center</td>
<td>2514 / 1791 FTE</td>
<td>Early &amp; Middle Childhood Education, Nursing, Long Term Care Administration</td>
</tr>
<tr>
<td>Southern &amp; Proctorville Center</td>
<td>1983 / 1486 FTE</td>
<td>Criminal Justice, Early &amp; Middle Childhood Education, Nursing, Health Services Administration</td>
</tr>
<tr>
<td>Zanesville</td>
<td>2106 / 1385 FTE</td>
<td>Nursing, Early &amp; Middle Childhood Education, Psychology, Social Work</td>
</tr>
</tbody>
</table>

Figure 1: The OU Regional Campus System

Faculty members from the five Ohio University regional campuses were invited to participate in the second year of the Kanawha Project. The goal of the Kanawha Project was to infuse sustainability literacy throughout the undergraduate curriculum through faculty professional development. Of the three campuses that maintained activity and produced results - Lancaster, Chillicothe, and Southern - success has ranged from individual course adjustments to inspiring the promotion of a campus sustainability culture.

By focusing on these two case studies, I seek to investigate the challenges – as well as the advantages and ingenuity - of community colleges and regional campuses attempting to integrate sustainability into their courses and beyond. Arguments exist for teaching sustainability, as do case studies putting it to practice, but what has been missing thus far is an exploration of the shortfalls in these individual efforts and an examination of the institutional barriers that prevent or slow their progress. They will also serve as examples of how, with creative and divergent thinking, site specific solutions and practices can be developed by tuning into a college’s specific strengths and forging “unlikely” partnerships.

Data collection

Data for these case studies was collected by in-person and phone interviews. Nine interviewees were selected based on their roles in sustainability education efforts at their respective schools. These individuals – faculty and program and sustainability coordinators - emerged from initial and subsequent interviews as leaders with compelling
perspectives to share. Interviews were recorded and transcribed. They were then coded to identify themes. Coding originated from the sub-questions listed above that guided the interviews, and reflect themes that emerged during the interview process.

Qualitative research methods were chosen due to the variety of organizational structures and independent approaches to teaching sustainability in these case studies and the in-depth and open exploration necessary to locate their themes (Patton, 1999). Since qualitative data collection allows the researcher to capture the distinctive points of view of participants through open-ended questions, the influence of the unique culture of each campus will be more fully represented than if quantitative techniques were applied exclusively (Patton, 1999). At the same time, existing literature on teaching sustainability will likely not completely illuminate human realities, and therefore will not fully prepare the researcher to place findings into defined categories (August & Tuten, 2008). Rather than limiting the study to what the literature suggests one should see, the diversity of human experiences recorded, or “the multiple truths frequently uncovered in qualitative inquiry,” can be a testament to the quality and integrity of the research (August & Tuten, 2008).

Qualitative analysis has proven to be effective in other accounts of campus culture change efforts; University of Maryland-Baltimore County, for example, approached an action plan for minority-student underachievement using these methods (Hirshman & Hrabowski, 2011). In this case, focus group discussions with students, faculty, and staff led to the “institution look[ing] carefully at itself, identify[ing] its strengths and weaknesses, recogniz[ing] the challenges it faces, and understand[ing] how its response to those challenges can lead to desired outcomes” (Hirshman & Hrabowski, 2011).
A second case for the use of qualitative research in this study is that widely accepted standardized or validated measures for assessing sustainability education do not exist and therefore this study does not lend itself well to quantitative analysis (Patton, 1999). AASHE’s Sustainability Tracking Assessment & Rating System (STARS), which was piloted in early 2008, was developed in answer to the need for a common campus sustainability assessment system (STARS, 2012). In 2006, an informal network of higher education associations that value sustainability, calling themselves the Higher Education Associations’ Sustainability Consortium (HEASC), issued a document calling “for a system for assessing & comparing progress in campus sustainability” (HEASC, 2006). The document points out that while many institutions have conducted their own internal assessment of various sectors of campus sustainability, there is no system that assesses and compares sustainability between campuses and on a scale of campus-wide sustainability achievement (HEASC, 2006). And the HEASC argues therein that such a system would help in addressing all areas of campus sustainability, including curriculum (HEASC, 2006). Looking back at McNamara’s (2010) study of successful sustainability efforts, you will recall that only 20% of campuses surveyed felt they had achieved their curricular goals, though those goals were undisclosed and individual. Arguably, the further development and wide-scale adoption of the STARS system will lead to the most promising quantitative assessments of sustainability curriculum in higher education.

After speaking with faculty involved in the Kanawha Project on OU’s main campus and with Hocking College’s sustainability coordinator about his goals for sustainability curriculum, it was clear that the scope of these stories would best be presented as case studies, given that both initiatives are largely in-process and ongoing.
These cases do not demonstrate every type or number of effort happening in campus sustainability in Ohio, but they do represent a unique subset that lends itself well to comparison and to drawing insights that can inform further growth and development of sustainability education across the system.

Significance

As the literature above clearly shows, the need for higher education to tackle the turnaround in collaborative learning and systems-thinking is urgent if society is to avoid the consequences of the 20th century legacy of waste and shortsightedness. Efforts at this among institutions remain ill-coordinated and challenged by the system of higher education we have today. While this thesis brings the exploration and discussion home to Ohio, its findings will have a broader implication to higher education nationwide.

While we have even less time for the rethinking of education that Orr (1994) called for over a decade ago, Ohio institutions are getting campus-based projects off the ground and they are doing it mostly independent of each other. By examining closely the initiatives of the institutions presented in the case studies, I will search for common trends of successful implementation and deterrence. Like the case studies cited in the literature, achievements in the case studies below will be given their due. However, I tell the stories in this thesis with a critical eye to identifying barriers and hurdles specific to the context of community colleges and regional campuses in rural southeast Ohio. By recognizing the common complications and rewards of these cases, perhaps in the near future Ohio can better support these efforts within its university system.
CHAPTER FOUR: CAMPUS CASE STUDIES

The following case studies of Ohio University’s regional campuses and Hocking College will follow much of what I’ve reviewed above in the literature. Faculty members will prove to be the torch-bearers of sustainability curriculum efforts, while likewise, their efforts to engage other faculty will often be among their biggest challenges, due in part to the siloing of disciplines and the internal and external politics which dictate the priorities of any educational system. The cases of the OU regional campuses will show successes and short-falls of the faculty workshop model, while the case of Hocking will show how moving to a holistic view of the campus as an educational center can bring synergy to campus sustainability efforts. Both will reveal a stronger culture of sustainability as an outgrowth of curriculum efforts. All will demonstrate ground gained, but they will also illustrate a need for a campus-wide strategy for cross-disciplinary sustainability education, in addition to consistent campus sustainability advocacy and leadership.

The Kanawha Project: Ohio University Regional Campuses

Introduction

In the winter of 2007, Dr. Michele Morrone, Director of the Environmental Studies Program at Ohio University’s (OU) Athens campus attended a workshop of the Piedmont Project at Emory University, a faculty development program intended to strengthen campus engagement in sustainability through interdisciplinary and cross-curricular teaching. Morrone returned to OU with the intention of implementing this model of curriculum enhancement at OU.
In 2007, Morrone co-wrote with Dr. Nancy Manring, Associate Professor of Political Science, a grant to the 1804 Fund - which was established by the Ohio University Foundation to fund “curricular innovations” – applying for funding to launch “The Kanawha Project: Environmental Issues Across the Curriculum.” The appeal of the project was to be able to infuse sustainability throughout the curriculum by weaving these themes into many different disciplines, thereby avoiding the cumbersome university curricular review process required for developing new courses. By inspiring faculty to re-examine their existing coursework and seek out the real-world and sustainability connections that could be made by meeting the same teaching goals, sustainability could be implanted course by course by engaged faculty and increase student exposure to sustainability concepts across campus.

The 1804 grant enabled the Kanawha Project (the first year of which involved only Athens main campus faculty) to offer an incentive to faculty participants in the form of a $500 stipend. Fifty faculty members from the Athens campus applied for one of 20 spots that first year and faculty in disciplines from Art to French to Marketing successfully revised their courses to include sustainability concepts. The structure of the program consisted of an introductory dinner and an all-day workshop, followed by monthly “learning communities” to explore different topics.

In 2008, the Environmental Studies program received a 2-year grant from the Ohio Environmental Protection Agency’s Ohio Environmental Education Fund to expand the Kanawha Project. Faculty from the regional campuses joined faculty from the Athens campus to form the second faculty cohort. The first year of the expanded project was spent introducing the second cohort to environmental sustainability themes through the
same faculty development model. The second year of the project supported faculty participants in implementing the Kanawha model in their own departments on the Athens campus or on the regional campus they were representing. There were no monetary incentives available through this particular grant, which made recruitment more difficult. McCosker noted that an additional challenge was the monthly round-trip drive, as long as 260 miles for the Eastern campus participants, that participating faculty had to make in the first year of training. Because of this she saw participation from Zanesville and Eastern fall off. Lancaster, Southern, and Chillicothe campuses, however, found varying degrees of success and challenge in the experiences of taking the project back to their own schools. These campuses were charged with adapting the program to their own unique campus environments, and did so with little to no communication among them, resulting in different approaches to engagement, a variety of faculty proponents, and creative spinoff projects among the remaining three. Table 1 illustrates in a snapshot the differences and similarities that were revealed in the case studies to follow.
Table 1: Three approaches to the Kanawha Project

<table>
<thead>
<tr>
<th></th>
<th>Lancaster</th>
<th>Chillicothe</th>
<th>Southern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type / Frequency of Faculty</td>
<td>Committee meetings / Twice each quarter</td>
<td>“Green Bag” lunch hours / Monthly</td>
<td>“Conversation in passing” / Not organized</td>
</tr>
<tr>
<td>Engagement in Kanawha</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disciplinary Areas of Faculty</td>
<td>Health Technology</td>
<td>Geography</td>
<td>Biology</td>
</tr>
<tr>
<td>Leadership</td>
<td>English</td>
<td>Fine Arts</td>
<td>Communications</td>
</tr>
<tr>
<td></td>
<td>Physics</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Inspiration to Participate</td>
<td>Personal Interest</td>
<td>Personal interest</td>
<td>Personal interest</td>
</tr>
<tr>
<td>in Kanawha</td>
<td>Dissatisfaction with educational constructs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campus Sustainability Spinoff</td>
<td>Campus garden / Garden compost</td>
<td>Campus-wide purchasing of post-consumer content paper</td>
<td>n/a</td>
</tr>
<tr>
<td>Projects</td>
<td>“Sustainability Week” outreach events</td>
<td>Earth Day outreach events</td>
<td>Formation of OU-C Environmental Club</td>
</tr>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: Personal interviews.
Debra Smith, professor of Health Technology, and Matt Wanat, professor of English, at the Lancaster campus came to the Kanawha Project for strikingly different reasons. For Smith it was a chance at redemption, a much sought after chance to make what difference she could in the course of our environmental future.

I’ve always been looking for an avenue to express my regret that we didn’t solve these problems...So when this project came up...it touched very emotional...chords in me about the future of the world for my children...because our generation didn’t do what we thought we were gonna do...

For Wanat, it was a glaring absence of discussion of the real world amid the rhetoric of cultural theory in his 20th century American literature and film curriculum. “So for me, it was intellectual interests in a kind of gap in what I see in my field that brought me back...sounds silly but, brought me back to the earth.”

For Smith, involvement in the Kanawha Project has both opened doors and illuminated barriers. She sees Lancaster becoming a model of an effort that reaches beyond their campus to integrate with the main campus in Athens as very positive, citing my own visit as an example of something that never would have happened otherwise. At the same time, in her view, the workshops have not been directional or prescriptive; “They’ve instead been like opening the door...to a basement. Where it’s still pretty dark,” she said with a well-intentioned laugh. Faculty participants from the regional campuses have not only had to discover on their own what the most effective modes of implementation would be for their campus, but often had to do it department by department on the same campus.
“Communications between departments [at the] regionals is often problematic,”

She says. Smith also saw other regional campus dynamics in play; being a non-residential campus with mostly adjunct faculty, there is an evident lack of connection to the campus and the community for both students and faculty.

Wanat joined in, in his own theoretical way, “It almost has to be a mission of the university or it doesn’t exist.” He went on to expound on the paradigm of higher education, the expectation of specialization, and his own discouragement at the barriers to interdisciplinary teaching:

...There’s very little sort of meta-discussion of the fact that English is virtually meaningless as a word for a discipline. I’m a Polish-American, nothing to do with England, you know? And within my discipline, it’s honestly just historical processes that led us to these sorts of disciplinary places.

These laments were not particular to Lancaster or the OU system, as he recalls similar discouragement at these institutional barriers at Mayville State in North Dakota, where he had worked two years before. Now in their third year of participation in the Kanawha Project, Smith has seen an upturn in interest from other Lancaster faculty. What used to result in unanswered emails or “but I teach math...,” has evolved into “Yes, I do teach math and yes, I am Group II [adjunct], I’m not a Group I [full-time]...I’m really interested in exposing my students to this, what can I do?” Smith credits this to persistence and having formal and informal conversations with faculty directly. “The approach on this campus is to have it legitimized as a very active and participatory committee...just like every other committee, it becomes integrated into the culture.”

The most tangible example of success at integrating sustainability in the practice and educational experience of the Lancaster campus is their small Campus Garden (20 ft.
x 30 ft.). The Lancaster Kanawha cohort of faculty, made up of Wanat, Smith, Sandy Doty (Physics) and Joe Faber (Biology) started the garden in spring 2010 as a way to provide hands-on educational examples. Smith explained that the garden emerged as the congealing effort of the Kanawha Project participation after their committee (one of four different original sub-committees of interested faculty) entertained a variety of ideas from a common reader, freshmen experience, and more, ideas that either had too many barriers or not enough leadership from their committee. As of my visit in October 2010, Wanat had been using the garden as a service learning project in his composition class. His students are assigned readings about sustainability, regionalism, and food, and then the produce is donated to a local food pantry, making a local economy and social justice connection. They had also built compost bins earlier that month. He explains that this integration lends to composition because “I can teach any theme I want as long as I’m teaching them to write.” And he hopes the trend will continue.

Once we start making these interdisciplinary connections, not only do we do something that’s maybe better for the environment but we do something that’s better for academia [referring to his earlier discouragement at higher education paradigms]...And the community.

The garden has also given a face to sustainability on campus. “[It’s] been such a boon for us, it’s defined a focus. It’s begun to help people understand it,” says Wanat, who admits that “it was initially a hard sell to people who didn’t already understand it.”

In spring 2011, the garden was to be expanded by an additional 20 ft. x 40 ft. to provide additional learning space as well as faculty and staff gardening plots to encourage and enable sustainable practice and awareness in other parts of the campus community. The possibility of adding beekeeping to the garden portfolio has also become
a pet project of Wanat’s, though due to start up costs and liability concerns, he suspects they won’t see it until summer 2012.

Smith, Wanat, and Doty also combined forces to develop a seminar that combines Health, Physics, and English, described as a “cross disciplinary exploration of sustainability themes in personal health, energy, entropy, and literature as well as a discussion of managing sustainability in multiple spheres” (see Appendix A). They listed the course through the Business Management Technology department at OU Lancaster to avoid an arduous approval process at the Athens main campus.

Wanat and Smith both agreed that transcending traditional department segregation may be easier to do on a regional campus; “Because, you know, you’re next door to people in other disciplines...You’re not sort of operating in this territorial way...” said Wanat. Here, the often negatively-cast seclusion of regional campuses has banded those of different disciplines together in a common cause. “It feels less like departments here and more like a community of professors.”

Beyond the garden, the Kanawha committee at Lancaster is working to make sustainability a part of the campus culture. In spring 2011, they held a “Sustainability Week,” which included food-focused films and a roundtable discussion dealing with agriculture, government, business, and the Kanawha Project, which meant to take the sustainability discussion outside of the classroom.

3 According to Wanat, as of May 2012, the garden was going strong thanks to contributions from faculty across campus, including Faber and Doty and faculty members from Math and Latin/Classics. Wanat received an internal grant to hold a beekeeping workshop and he along with a Math professor have gone through Central Ohio Beekeeping Association training with which he hopes to establish beehives nearby off campus. The garden continues to present unique partnership opportunities. For example, a Lancaster student had recently reopened a food pantry at her church and is planning to use space in the garden to plant beans for the pantry in repurposed pallets.
“I mean we really are looking at our culture, looking at what we need to do and trying to pull all of these arms together to get some energy created,” says Smith. Smith, who had attended OU Lancaster in her youth, attested to what a huge cultural shift this was for the campus, not just for sustainability but for any type of campus community engagement. “It has become very [common] to take a class and leave.” It is for this reason that Smith feels that their efforts to enlighten students to sustainability have to exist outside traditional classwork. If students take time off from school or are only there for a short time, they have to have some consistency in their sustainability exposure. “I don’t think that it’s going to be successful here at this regional campus if we only express that in a curriculum way,” says Smith.

Along with a means of growing a connection to the campus community, these activities are renewing a connection to the surrounding Lancaster community as well, a partnership that according to Smith has been weaker than many in the community would wish (her husband is Mayor of Lancaster). In fact, a portion of the produce from the garden has been donated to a local food pantry, enabling a feeling of pride among involved students in helping the community. Said Smith,

It allows us to increase our visibility, be more of a community partner, coalesce our faculty around the community as well as their teaching, empower and engender students to understand their connectedness...not only with their educational goals but with their community.

Wanat feels that the garden’s success may be in part due to the nearby farming culture around Lancaster. He has found that students are drawn to local angles and issues when talking about sustainability and he has been able to tie that all back to local food issues and community need. Moreover, he has seen students step up in class to take the lead in
the garden or on building the compost bins, because these are skill sets they have that they would not normally be able to share with their classmates.

This was to be my most validating interview, for along comes Debra Smith with another sentiment right out of my Introduction and I realize I am indeed talking to the choir, or a fan of David Orr.

I think another barrier is that my perception is that faculty don’t see themselves always as people who teach people how to learn...And really what Kanawha does is it forces you to look at your curriculum and decide that it is not an expression of your ego. But it is an expression of commitment to empowerment. And commitment to what education historically had held itself out to be. And that is freedom...

Smith says the Kanawha Project has enabled her to talk to fellow faculty about teaching sustainability without criticizing them and the degrees that define them. Yet, she knows the problem remains of overcoming the traditional values that people don’t even see.

Chillicothe

“I teach Geography and there’s nothing more environmental than Geography,” says Gary Haynes as he explains why he did not immediately respond to his Dean’s email looking for participants in the Kanawha Project. He understood that the project was looking for non-traditional curricular areas to get involved, and he thought of himself as “everything traditional.” But after a few weeks, no volunteers, and assurance that a geography professor would in fact be a meaningful participant, Haynes offered to be the Chillicothe delegate to the Kanawha Project.

For Haynes, a huge benefit of the Kanawha Project was his own professional development.
Every one of those learning communities that we went to I came back with something different...I knew that they put limestone and calcium in acid mine areas to buffer acidity in the streams, I mean I know that, but I never really had seen a unit. Period... So I got a chance to actually see it, take pictures of it, look at the water running out of the drip mine...

Through activities like this, faculty participants are actually able to view educational experiences differently, rethinking the way they’ve become accustomed to teaching in a classroom. Haynes, who has led field trips as part of Continuing Education workshops for educators, began to see ways that sustainability could become a part of these experiences. For example, a day trip to observe Amish cultural lifestyles, could now become a case study in sustainable lifestyles. He expounded upon all of the different ways that the Amish could exemplify this, and even surprise: “…they have solar panels on their buildings now. People freak at that, they think the Amish are just really old.”

In spite of his evident success at organizing these kinds of field trips for educators, he has not been able to do the same with his classes.

I know on the main campus they do a little bit more field trips. I think. And they can somehow [do this] because they all kinda live there...[While our students,] they all have families and jobs all during the day...I think half of them would say, ‘Well I just can’t, look, I’ve got a disadvantage. I work eight to five...’

Haynes describes the age range of his students as everything from high school students taking the “early college option” to people that partied too much in Athens and flunked out decades ago (the latter, he says, are often the better students, having come back for a second or third chance at an education and job training).

And here we have a common challenge to student engagement and curricular change on a regional campus. Students come to campus to get in, get grades, and get out. They have other lives, other priorities, even other academic aspirations. The regional
campus for many is a means to an end and even a last resort. It is the minority who are looking for a sense of community, for a peer network, for an innovative educational experience. According to Haynes, “I think you could summarize it, you could say that they don’t really have any academic standards here, anybody that wants to come in here can just show up and try it.” That’s really not to say that any student shouldn’t be given a shot at a higher education, but this anecdotal take on the expectations of students speaks loudly to the expectations put upon the education they receive.

In Haynes’ experience, the challenge of disassociation from the campus culture applies to faculty just as much as students. He has worked at bringing the Kanawha Project model of learning communities back to Chillicothe’s campus, and he says he has seen interest, but for so many, their position at Chillicothe is not their only livelihood.

See half our faculty or more...they’re not local. They drive in, they have a full-time job at some psychological clinic in Columbus [for example]...There’s a rotation pattern where faculty members that commute in...They’re not here four days a week, just two days a week.

And so you have the majority of faculty who come to campus to do the job their adjunct faculty job description details and not necessarily anything more, including investing in a campus culture or the community or working toward innovative educational change.

This did not stop Haynes from starting up once monthly “green bag” lunch hours as a means of widening the reach of the Kanawha Project to the Chillicothe campus. The lunches were scheduled on different days of the week each month in order for those who were only on campus part of the time to be able to attend at least some of the time. According to him, one of the most popular and successful discussion topics was describing to faculty sustainability practices the campus was already implementing while
putting them in a context for how they improved the campus and community. These included stormwater management, energy efficient lighting, and moving to 60% post-consumer recycled content paper.

The way the last item came about was a particularly ordinary story with a particularly poignant moral. According to Haynes, one of these green bag gatherings prompted the question, “Why aren’t we using recycled paper?” After the meeting, Haynes went to the purchasing office and asked how much more it would cost to buy recycled-content paper. “I don’t know. No one ever asked me,” was the reply. Now curious, they looked up the contracted vendor’s price list. Finding that it was the same price to purchase 60% post-consumer content paper as the non-recycled product everyone was used to, they ordered a trial shipment to test for print quality.

And we tried it and she said that several people noticed it. I mean several people, the Dean’s office and everybody noticed it and she told them in each division that she was going to buy the recycled paper for like a big shipment, just to make sure [they saw] nothing wrong with it and it looks good and it works in the copiers [and the response she received said] it was all perfect.

Haynes’ story shows the Kanawha Project having important spinoff impacts, getting campus community members to start asking questions and finding that sometimes that is all it takes: someone questioning the status quo.

Kanawha Project green bags at Chillicothe were not without recruitment success; Margaret McAdams, Professor of Fine Arts, who has worked with concepts of human impact on nature in her art work for decades, quickly saw her Studio Concepts course as a good avenue to incorporate a specific project dealing with sustainability. Her expectations for the course require student collaboration and installation encompassing a space or environment. Her spring 2010 students were charged with researching art on
sustainability and thinking about how that could be incorporated into a space on campus.

This led to a class exploration of campus space and environment, which subsequently led to discovering a “dumping ground” for discarded consumer materials in the woods bordering the campus. According to McAdams,

They all started pulling those things out because the decision was, well let’s sort of gather materials...And they ended up focusing on a reading that I did in class, from the book, *The World Without Us* by Alan Weisman...And what really stuck in their mind was that plastic can disintegrate but never totally...but can break down into molecular sized pieces.

The result was an outdoor installation between two main campus buildings that involved plastic drink bottles cut to wrap around trees and jutting out of the ground. The message of “Found on Campus,” which was the title of the piece, was that “all of our stuff will have plastic in it if we keep using plastic like we do.”

For all the success he could report, Haynes revealed himself perhaps fumbling in the “dark basement,” alluded to by Debra Smith, or at least someone looking for more validation. When I asked what kind of feedback he had received from campus constituents, he responded with pleasure at the reflective assignments submitted by some of his better students, but then the positivity he so obviously wanted to express waned.

The group in Athens that runs the Kanawha Project, I can only say positive things about the project...but they don’t do much follow up...They never even asked about last year, ‘Well could you send us copies of all your syllabi?’...Maybe they’re just busy. I don’t want to sound negative, but there’s not much...

I suspect that Haynes - like myself when offered the opportunity to work with the Ohio Board of Regents - was hoping that individual efforts would reach beyond himself, his campus - my degree - and that the imperative and potential of what we had been working toward would be put in decision-making hands.
When Orianna Carter, professor of biology at OU’s Southern campus, learned about the Kanawha Project she not only saw an immediate connection to her own interests and background in environmental health, but she saw a great opportunity to collaborate with OU’s main campus.

Because we’re very secluded in the way of regional campuses and any opportunity to bond and work as a team in Athens is key for us...to actually be part of a project. I mean from the time I’ve been here...this is my fifth year, that’s been rare...And Loraine and everyone up there welcomed us as vital members of the team.

Carter is all too familiar with the challenges of being at a regional campus.

It’s a dead end road for students to come into our biology...If you take microbiology, it gets accepted [as a transfer] nowhere...our organic chemistry, it doesn’t get accepted. Because we’re given a different number, a lower number, and it’s not useful...

According to Carter, prospective biology majors are looking to nearby Shawnee State due to Southern’s lack of a full two-year program in biology (from which they could then go on to Athens main campus) and adequate labs.

Carter’s participation in the Kanawha Project resulted in a fresh approach to her Biology for Majors course. While she continued to use the same textbook, Carter ultimately designed a three-quarter-long, hands-on project that would integrate with the lab component of the course. They called it the Atrazine Frog Study.

The project developed gradually, starting with an in-class study of the effects of environmental pollutants, such as herbicides, on the reproductive development of amphibians. The students were assigned literature reviews with the intention of engaging their critical thinking about how the science of particular studies was performed. Carter
then offered her students the opportunity to go out into the field to test local water bodies and frog populations (where she would have normally ordered the frogs from a catalog).

Because the subject is the reproductive health of the males, the males are becoming feminized, sperm counts are down, we’re showing it in the frog population, but it’s easy to extrapolate that back to what could be happening to humans in our own environment. So that gives them an investment in the issue...

By going out into the field, which in this case was a part of their regular, but unseen environment - the nearby countryside that few of them had any familiarity with - students were given an even richer exposure to the impacts of their topics of study. In fact, the experience brought into play some of the social conversation of sustainability, introducing students to the backyards and perspectives of the neighboring rural community.

We had the OU vans with us so we [had] labels. We’re college people, you know all this stuff. So [the locals] were a little bit intimidated, but then they were really, they really thought it was funny because we didn’t know how to catch a frog! We had no idea. And all of the students felt a little bit stupid. But they were to learn from their new local friends that this was not the extent of their naiveté. Here the students were in the daytime, when the best time to catch frogs was at night; Not to mention that it wasn’t even frog season. Not that this was really any fault of the students, Carter seemed to have set out that day unprepared to guide her students in their outing; nor, was it necessarily her downfall. After all, the expectations of the OU regional system has her teaching out of the textbook and ordering formaldehyde frogs. It was a learning experience for everyone. As it turns out, the campus’s Department of Wildlife permits covered their scientific collection of frogs, and exempted them from seasonal limitations, which according to Carter empowered the students after their initial humbling experience. “So they’re all like, ‘Cool, that makes us kind of special again.’”
Carter said she saw a “lot of resistance” among her students when she first started to focus her course on sustainability themes. “There’s a lot of media bias that’s always putting down anything that the green revolution is saying...it’s all Fox News and it’s all about corporate profit.” She tried to distill this attitude by bringing the conversation back to health, a mindfulness that she sees as hugely lacking in the community. “I mean I can hardly go through the day without some student coming in with some major issue in the family...this is one of the worst areas in the country for health.” She’s tried to open their eyes to the environmental reasons that some of this could be happening, and that “there are policies that could be changed, that should be changed to make them healthier.”

Carter’s classes did not find any hermaphrodite frogs that first year, which apparently to them was disappointing (clearly there is still a bit of disconnect between the classroom and their real lives!). But they did find atrazine in the tap water, evidence that herbicides are sprayed around the reservoir, which did get their attention. When I spoke to Carter in October 2011, she reported that they did find affected frogs the following year. The classes had evolved in other ways as well, including growing their own tadpoles.

In the fall of 2010, Carter was concerned with trying to grow her enrollment numbers by getting education majors to take her course as well. She sees it as a problem that students in this program, who will go on to teach middle and high school science, are not required to take biology. However, one year later it seemed that the class had developed a reputation that served it and students well. Carter reported that more students were staying on a second year to continue their fieldwork and take Carter’s genetics class
before transferring to Athens. One student was developing an independent study in which she planned on performing histopathology on the affected frogs’ tissue samples.

Attempts at holding a secondary sustainability integration workshop on Southern’s campus have been relatively unsuccessful, according to Carter. She said this was because only a few Group I (tenured) faculty (of which there are only a handful) were initially interested; she also added that most of them are getting ready to retire. She saw no interest from those with a lesser tie to their position on campus, such as adjunct faculty. When it came time to schedule follow-up meetings, the initiative seemed to lose priority with some of the other faculty. “We kept being like pushed around from time to time and it seemed like it became less important than what everyone else was doing.”

When we spoke in October 2011, there had really been no positive change in this regard. Though, she did tell me that they were working on implementing an adjunct professional development program, and that once that was in place she hoped to make Kanawha a part of it.

Carter’s Kanawha efforts worked fortuitously in unison with another initiative she is active in: SENCER or Science Education for New Civic Engagements and Responsibilities. “Kanawha came first,” she told me, and helped inspire her to develop the Atrazine Frog Study. Then in summer 2010, she attended a SENCER workshop which helped to plant the idea for a co-taught environmental communications course. She returned to Southern campus that fall and her idea was well-received by Professor of Communications, Purba Das. The initial plan was to try to pass the new course through Health Technologies (HTCH) for approval, hoping they would be more open to it in the same way that Lancaster had success in implementing their new seminar. This proved too
difficult, however, and HLTH 490: Environmental Health and Media Perceptions was eventually approved through the Athens campus School of Health Sciences and Professions. The course was co-taught online in summer 2011, and they planned to offer it in a partial in-class and online format the following year.

Carter has had difficulties in the past getting new courses approved through the University’s Department of Biological Sciences (based on the Athens campus).

I think every department...has a different perception of what the regional campus’s role is in education...they send it to their curriculum committee and they evaluate it and decide, well that’s already like a course we have. It doesn’t add anything...

Her previous experience speaks strongly to the shortsightedness that often exists in educational standards, the idea that we are teaching what we always have and what we are supposed to; nothing more is needed. This is especially disappointing to Carter, who sees ways in which these additions, improvements, innovations, etc. would have particular benefits for students at a regional campus like Southern. “Our students are coming in, often unprepared and often intimidated especially by any STEM - science, technology, engineering and mathematics,” she said. “[It’s] very hard to bring students into, so they’re not prepared for it.” Though arguably a better educational experience for all students, Carter sees a course that incorporates research and multi-disciplinary topics more beneficial for students at Southern, even more so than at the main campus, because of what they may have missed out on in their other school years.

It’s a challenging position indeed, while wanting to further align themselves and lessen their seclusion from the main campus, Carter recognizes that regional campuses have unique needs. She would like to see the solution to this be the increased
involvement of Athens department heads in the regional campuses. “We need that rigor. We need that validity of what we’re doing out there. But I can’t do it without support. You know, we could become better quality programming out here on the regional campuses...”

With all of their particular challenges and slow progress at integrating sustainability further into the curriculum, Carter sees only positive in regard to the Kanawha Project. For one, it provided much needed professional development for regional campus faculty. It appeared also to provide those educational moments for participants like Carter to think differently about their responsibility as educators.

It’s easy to integrate it but you need to be aware that, well, wait a minute, I do have a responsibility. I should address these issues...to provide and hand down to the student their own awareness...You know and their lifestyle and how they vote for policies and all that.

We are, after all, talking about how to re-learn how to learn, and likewise, re-learn how to teach. Carter’s reflections attest that even someone who comes from a science mind - what I would call a usual suspect - has something valuable and insightful to gain from a paradigm shift.

Conclusion

The case of the Kanawha Project at Ohio University’s regional campuses, and on its main campus for that matter, has indeed been driven by individual faculty (in keeping with McNamara’s (2010) findings that faculty take the lead in 50% of campus sustainability initiatives). As shown in the stories of these three campuses, roughly half of the faculty interviewed fall into the category I call “usual suspects,” or faculty in
disciplines that naturally see a tie to the environment and from there understand other aspects of sustainability, including Haynes and Carter. Still others, such as Smith and McAdams, came to the cause because of personal interest, that is, sustainability was a value already present in their lives and thus they found easy transition in imparting it to their students. Wanat was the exception I was buoyed to meet. Having become frustrated by the short-sightedness of our current educational paradigm and thereby finding gaps in the intellectual depth of his own discipline, he came to Kanawha to do something about it. His collaboration with Smith and Doty on a new cross-disciplinary seminar is an example of their success at breaking this traditional academic mold. It is also an excellent example of a regional campus overcoming the challenge to be innovative while under the thumb of main campus departments. Even Southern, with their seemingly slower progress, was finding similar ways around that obstacle.

With that in mind, I took away different accounts of the advantages and disadvantages of regional campuses from each interview. Smith and Wanat found the smaller environment advantageous in creating a sense of community and, as evidenced by the seminar and creation and use of the garden, cross-department collaboration. Haynes surely found advantage over cumbersome main campus purchasing processes when suggesting the seemingly easy transition to post-consumer recycled content paper; while on the other hand he appears to lack the resources and student freedom to give them the experiential education he sees possible. Carter, meanwhile, worries about the viability of her program and the dim transfer options it offers, wishing for more attention from the Athens parent department and the rigor she is sure it would provide.
Leadership plays imperative roles in these snapshots. Without Smith, Wanat, Haynes, and Carter having been ambassadors to their respective campuses for the Kanawha Project, there would be no regional campus Kanawha Project to study. In contrast, this is not an Ohio University initiative per se, but of individuals in the Environmental Studies Program. There is no mandate, no requirement, little encouragement, leading to the kind of half-hearted interest Carter has experienced, and leaving determined individuals, who carry their own personal reasons for investing in this, to lead the pack, such as it is, on their own campus.

Arguably, sustainability had little to no place in the culture of these three campuses prior to the Kanawha Project. And yet, its integration into the culture of the Lancaster and Chillicothe campus is shown to be both a cause and an effect of the project. In Lancaster’s case the visibility and tangibility of the garden has enabled them to make sustainability something local and familiar, taking it out of the abstract and unknown, thus, attracting more to the cause. For Chillicothe, the “green bag” lunches led to more sustainable practices on campus and prompted an art class to make a sculpture out of litter found on their grounds into part of the campus atmosphere. One could conclude that Carter’s difficulty in garnering more enthusiasm for the project - though she certainly is serving her students well by taking their studies outside into the landscape - could be due to an overly narrow focus on curriculum. Smith’s point about having consistency in exposing students to sustainability fits well here. In order to drive home the ultimate lesson of sustainability threading throughout the systems of our lives, we can’t just keep it in the classroom. We really should be creating learning environments
that exemplify the type of systems and societies we are hoping will eventually rise above all this.

Hocking College

*Campus as Curriculum*

My research of Hocking College began when their Sustainability Coordinator, Joe Wakeman, responded thoroughly and enthusiastically to my ill-fated survey in the summer of 2010 - this would be my only well-informed response. He was eager and obviously proud to tell me that Hocking had plans to integrate sustainability into all of its majors. Hocking’s Office of Sustainability and its sustainability master plan were the vision of Hocking’s current president, Dr. Ron Erickson, who came to the college in 2009. According to Wakeman, the plan focused on three goals: inject sustainability into the college’s operations, into co-curricular activities, and into their entire curriculum. “It may be a bit utopian,” said Joe, “but we would like to see the day when every student leaves here and enters life, both personally and professionally, and approaches [it to] still be sustainable because that’s the way it should be done.” He recognized this as a daunting task, but having been at the college for 15 years, both as faculty in the natural resources department and as an administrator, he was familiar with the college’s academic programs and had started to make sensible connections.

The college has a strong Forest Management Technology program - and some would recognize immediately that forestry is a study of sustainability, of nurturing the forest such that it continues to produce and thrive for years to come - as well as a variety of natural resource offerings, and naturally therefore thousands of acres of forest property
to provide hands-on learning. What the college was lacking was a land management plan for this ample learning laboratory. Wakeman explained:

We use them for all kinds of class activities, so there’s lots of situations where there may be conflicts of activities. Of one class doing one thing and another class doing another thing and they don’t know and it may impact the other activity...not to mention that we may not always be showing best practices of managing our land.

Meanwhile, the forestry capstone course, Forest Management, has for several years now culminated in students actually working on a management plan for local private landowners. These landowners were often recruited out of Certified Forester and Associate Professor in the Forest Management Program, Bob Sabo’s own private forestry consulting business. He is able to offer a free management plan done by his students. Instructor of Forestry, Jim Downs’ Forest Issues and Policy Course covers forest certifications and the benefits of having a third party validate that one is managing their property correctly. Until now, it has been just another textbook topic in class, but Downs recognized that under the leadership of Dr. Erickson and his commitment to sustainability, this might be something that Hocking could actually pursue.

Thus, Sabo and Downs teamed up and took the idea of a student-produced land management plan for Hocking College to Wakeman and President Erickson. “It just fit like a glove,” said Wakeman. The first step was to have Sabo’s Forest Mensuration [inventory and appraisal] course inventory the forest in winter 2010. They would inventory saw timber as would be the usual assignment. But they also set up permanent plots, revisiting them a second time in the spring to gather additional data on invasive species, regeneration, dead trees, and more. After the second visit to the plots, the capstone students brought together a group of stakeholders from the college who had
interest in the management objectives of the forest. They then had to interpret and consolidate those objectives in writing the plan and presenting it at a second stakeholder meeting. Sabo explained:

It doesn’t sound like a whole lot until you think that normally these students in the fifth quarter mensuration course are in teams inventorying a five-acre tract for one project, then a forty-acre tract...[up to] a hundred and sixty-acre tract. Well, we instead took this twelve-hundred and seventy-five acres of our forest back here...

And that’s not even all of Hocking’s property; that didn’t include noncontiguous land or the floodplain. Even more impressive, this graduating class had only six students in it.

The next step in the collaborative process was to have Downs’ Forest Issues and Policy students pursue a third party forest certification. His class gave their recommendations on the best process for Hocking to pursue and thus, they are undergoing the Sustainable Forestry Initiative (SFI) certification. Wakeman was obviously in favor of their informed choice, explaining that it was a “holistic” land management plan looking at things like biodiversity, wildlife habitat, archeological importance, and more. And with that comes opportunity to include a number of other disciplines in a very relevant way. He explained that the forestry program would be the “pillar,” “but now we’re going to have wildlife classes go out, geology classes, archeology, mapping groups...So now you can maybe see this plan’s going to bring in large [amounts] of students. It’s never going to stop.” Sabo chimed in here with a critical emphasis, “And forestry, like you said, is never going to stop.” What he went on to drive home is that Hocking had found a sustainable way to integrate sustainability into a wide variety of their curriculum. Their forest, an incredible asset to their academic agenda, is a constantly changing thing. New cohorts of students will continuously benefit from
updating the discoveries of a previous year, will simultaneously add new contributions to
the knowledge of how to best promote the health of the forest.

But the success of this example of sustainability education is richer even than its
longevity. Here were systems that had previously operated separately and incognizant of
one another, which are now not only realizing ways to work together to meet their goals,
but to do so more efficiently and successfully. Said Wakeman,

It’s like for example our wildlife classes, we have almost three-hundred students
[that were doing inventories] out at our Stone Lake facility...But now they’re
shifting and doing it here. And so our geology, our geo-environmental majors are
going to go through and perform the classes that they were doing on field trips to
look for things they’re going to do here.

And speaking of more efficient and successful goals, not only is Hocking gaining a
much-needed land management plan to guide them in sustainable land practices, but the
educational experiences of these students just jet-packed past superficial, staged out-of-
classroom experience to taking on a real-world challenge that will not only make them an
asset to employers, but has made possible an investment in their projects that has not
been present before: the chance to determine the legacy of Hocking’s forests for years to
come. According to Downs, “the students have been great. I mean they’ve been tackling
assignments larger than probably what they would typically do because they see the
benefit in going through with this.”

As with sustainability, we continue to find all things connected. I saw unfolding
in our conversation the future sustainability of the campus and its academic programs
tying into the caliber and rigor of those degrees in an unprecedented way. But for
Hocking the forest played a bigger role in those efforts than most campuses can claim.
Said Wakeman,
You’re probably familiar with the Presidents’ Climate Commitment?...Well, it’s really difficult...but we have some assets that those schools don’t...We have a really unique and large natural resource program so we’re going to be counting our offsets through a more healthy ecosystem in our forest.

He admitted the numbers were “fuzzy,” but he anticipated that a third of their footprint could eventually be offset by their sustainably-managed forested land.

If a Tree Falls in a Forest...

Having taken Biogeography at Ohio University as a graduate student, my mind was churning with recognition of forest lifecycles - especially the Hemlock in the hardwood forests of the Hocking Hills - as I listened to Sabo expound upon sustainable forestry. What my field experience in that class did not have the capacity or time to cover, but what must be included in any systems thinking involving a forest, is the sustainability of the wildlife which inhabit the affected stand of trees. Funnily enough, it had taken this sustainable forest management initiative for departments like Forestry and Wildlife to start collaborating in a way that student learning could be enriched by each department’s respective activities.

I had the pleasure of interviewing Professor of Wildlife, Dave Swanson, in May 2011 to learn how his classes had been newly using the college’s forests in the last year since the sustainable forestry initiative began. He explained that the theme of removing “resources on a sustained rotational basis [while] still [providing] wildlife species with everything they need to survive and reproduce” was in no way new to the program. And yet, somehow they have managed to teach this without taking advantage of their vast forested property. According to Swanson, “...that land lab here on Hocking College, as
it’s sitting here for years with nobody doing anything...I mean we take our students out there and do a clear cut and then put a sign up and then thirty years later show people that this was a clear cut.” But with the forestry program initiating a sustained use of the Hocking property, invested departments have the opportunity to take their students to see different stages of forest succession instead of just lecturing about it.

It’s going to be a textbook without a book. It’s going to be a real learning lab now that students manage, that students watch, students collect data from. So it’s opening up a whole new avenue...instead of doing lectures we can go out there and just talk.

Swanson brought his own educational experiences to the table to account for the real value this will provide for students. He recalled that while earning his B.S. in Wildlife Resources Management at West Virginia University everything except tree identification was done in a lab. “Rarely did we get on a bus and go anywhere.” He perceives that many students come to Hocking because they “don’t want to be stuck in a classroom.” “Hocking has the reputation of hands-on doing,” he explains.

I asked Swanson about some of the wildlife species that called their property home. This day, his mind was on the migratory birds coming through the area; I learned that gray warblers and yellow breasted chats liked the most recent clear-cut stand, while scarlet tanagers, wood thrush, and Louisiana water thrush favored the mature pines. And thanks to the collaborative use of the forest, the welfare of these species is now being recognized by forestry students. “They’re seeking us out,” says Swanson, “They’re asking us our opinions, our objectives, and just to watch some of those kids transform into thinking way outside the box on a landscape level...they’re long-term thinking.”
And to think that all of this productive collaboration could have been lost to a parceling up of the forest. Swanson recalls some of the initial stakeholder meetings about the land management plan in spring of 2010; “[Some of the faculty] were wanting to carve out their own little piece...for their students only. I mean gates. They wanted keys...” He remembers sitting in those meetings and thinking, “This is not going to work!” But a year later in present day, he feels everyone is on board. “They’re working together. They’re thinking together. [Maybe we just] needed to get the plan together...it’s a learning process for the instructors as well as for the students.”

Beyond the enriching educational benefit to students in departments from forestry to wildlife and all manner of natural resource programs at Hocking, Swanson again brings a personal account to why educational models of this kind are extremely beneficial. Having worked as a forest wildlife research biologist with the Ohio Division of Wildlife’s Waterloo Research Station in Athens County, OH, he was all too familiar with landowners who stripped their land of commercial value without seeking out the expertise available to them to help manage their forests.

They had their land that was stripped of any commercially valuable trees. They got a chunk of money, but probably a very small percentage of what they could have...they could have reaped more economically and more in terms of sustainable use of the land down the road...better trees, better wildlife, better water quality and so on...

Swanson hopes that Hocking’s sustainable forestry initiative will not only benefit their students, enriching their academic experience and preparing them to take sustainable practice with them into their careers, but also to the community and to local landowners, who can learn from their forest and maintain their own valuable land resources.
Measuring Success

Wakeman recognized that in order to gauge their success at teaching sustainability they would have to measure a baseline, determine what degree of sustainability knowledge their students were entering campus with. Focus on Success was a new orientation program for first-year students in the fall of 2010. Wakeman suggested incorporating into this orientation a survey of sustainability literacy:

What if we come back from that and figure out, man, seventy percent of these students know a lot more than we think they know and they’re expecting college to be a lot more than it really is. We’ve got to get things ramped up. Or it’s the opposite. We’ve got some educational work to do and we’ll get them up to speed.

The benefit of using the orientation as an avenue for the survey, rather than an email or other optional method, is that the new Hocking students are more or less held captive in a computer lab during the session, lending easily to throwing a short exercise in sustainability literacy up in front of them. Wakeman did not seem to meet any resistance from faculty about including the survey either. He pitched it to the faculty member in charge of creating the orientation and from there it just became part of the package. From here he hopes to see sustainability disseminate throughout the curriculum such that they will be able to measure heightened awareness in an exit survey when the same students graduate.

Speaking to Wakeman on the phone in May 2011, I sensed that he was obviously still fairly excited to share the results of that first fall survey (see Appendix B). They had received 1,632 total responses to this initial survey, thanks to mandatory orientation. The survey was a brief six questions. The most involved of these listed 28 terms and students were asked to choose all of which they knew to be associated with or considered to
“define” sustainability. Among the terms appeared: “Tree Hugger,” “Recycling,” “Community,” “Green,” “Propaganda,” “Carrying Capacity,” and “Over-Regulation.” To my surprise, “Future” at 55% was perceived to be more associated with sustainability than “Recycling” at 47% and “Green” at 40%, suggesting an underestimated expectation on my part. However, then one sees that “Climate Change” is only recognized at 21%, “Extinction” at 10%, “Social Justice” at 11%, and “Carrying Capacity” at 12%. The lack of recognition of these types of over-arching problems with wide-reaching future implications, make it abundantly obvious how much work lies ahead.

Questions 3 and 4 asked if sustainability was important to the students’ lives and future careers. For “how important to life,” 27% said essential, 39% said very important, and 28% said somewhat important. For “how important to your future career,” 39% said essential, 41% said important, and 16% said somewhat important. For the moment the results of this survey have little bearing outside of Hocking’s campus, having no national level of comparison. However, if Wakeman is successful in implementing an exit survey as well as the entry version, they would have some internal method of measurement as to how their sustainability in the curriculum initiative is affecting their students’ awareness of sustainability.

Wakeman seemed very pleased with these results: “What it tells me is we better step up to the plate because they’re walking in with more than I thought they had.” I personally found it confounding that there was significantly more importance given to sustainability in their jobs than their lives. One could assume to find a heightened understanding of career importance at a school where students are pursuing degrees in forestry and other outdoor studies, and yet, a percentage of them are failing to make that
same connection to their quality of life and very existence. Moreover, the fact that associations of social and economic connotations (not to mention “Carrying Capacity” and “Climate Change!”) were coming in at 10-20% of those surveyed is especially troubling. While at least half of the students are clearly demonstrating some degree of understanding of sustainability, unfortunately it is a frustratingly narrow understanding that still focuses primarily on “the environment.” Hocking should bear that in mind when stepping to the proverbial plate.

I asked Wakeman what, if any, models he consulted in this project. His response was, “I’ve spent a lot of time picking Ed Newman’s (OU’s Recycling Coordinator) brain. And I completely intend on absolutely copying what you guys have done at OU with your food waste compost compactor.” Here you see evidence that even with waste management, there is no rule book. There are no directions to follow. And recycling is number one on any campuses’ sustainability list. The reason being that it’s so recognizable, so familiar, so comparatively easy. (Nine point five times out of ten when I ask a group of students what they know about sustainability, they say, if they say anything at all: “It’s, like, recycling, right?”) We are still all learning from each other, applying best practice from our peers when it fits our campus environment and culture. But in compost, Hocking does find a lot of sensible connections; their culinary and equine programs would be large contributors to an on-campus compost program, an example that illustrates how institutional characteristics can enhance sustainable practice as well as curriculum, and that opportunity for such cooperation may need little more than a fresh eye and a willingness to rethink the way things have been done in the past.
But we both digress, for this was not actually what I was asking Wakeman, though remarkably significant. What I wanted to know was if there had been a resource that informed his orientation survey. What informed the questions he was asking? “I sat in my office and thought them up,” he said. Again, there is no rule book. This is how new things happen in campus sustainability. He did bounce them off his Ohio sustainability cohorts, he told me, and received “feedback,” but apparently nothing that was new or informative. “Um, so yeah, wasn’t anything glamorous,” he admitted.

Next on his mind is how to reach those disciplines that do not immediately and obviously have a connection to Hocking’s forests – much like the Kanawha Project initiative to train faculty in non-environmental disciplines on how to incorporate sustainability into their existing courses. He is left with the question of how to engage faculty that cannot see their department’s logical connection to sustainability, or moreover, is meeting their educational objectives and does not conceive why something “extra” is needed? In order to address these areas, Wakeman is turning focus to Hocking’s Whole Success Skills, the eight “core learning values” that the institution attests will be accomplished by each graduate while at Hocking. When we met in September 2010, Wakeman aspired to add a ninth skill: an understanding of sustainability.

Wakeman explained that the skills are tracked through charts that show which classes incorporate which skill, thereby making sure that each student has the opportunity to master each. He described it as an XY axis with classes on one axis and the skills on another. Then when students receive their syllabi, on the back it will tell them which Success Skills the class meets as indicated by this master grid: A4 and C2 for example.
If you have a math course or you have a communications course, you know, the students aren’t really practicing that at times. Maybe the skills even diminish over time. But if we keep focusing on the Success Skills throughout the curriculum and we keep revisiting math and revisiting communications...it just builds a stronger...more successful student by the time he or she graduates.

Wakeman explained that faculty assess the accomplishment of these skills in different ways, perhaps through an assessment at the middle and end of the quarter, or maybe through a specific graded assignment. The common thread is that they require some kind of response or reflection from the student to show that they have absorbed the skill.

Currently Hocking has a skill set called Science, underscored by “demonstrates knowledge of science and the environment.” Wakeman hopes to pull from this standard and create a separate, more specific sustainability skill. He realizes timing it crucial here; Hocking like OU is transitioning to semesters in fall 2012. This means overhauling their entire curricula. Wakeman hoped others would agree with taking advantage of making multiple institutional changes at one time. On the other hand, it could be too much at once.

The latter sentiment proved to be true for Hocking’s deans, but Wakeman was not discouraged. When I spoke with him in May 2011, he was preparing to take language for an enriched Science skill to their Academic Affairs Council, with hopes that a revision of an existing skill would be better received than adding an entirely new one (see Appendix C). To create these new “Science” indicators, Wakeman consulted the U.S. Partnership for Education for Sustainable Development’s 2009 National Education for Sustainability K-12 Learning Standards and considered what the next steps in learning would be beyond those.
So my mindset was because I have more far-reaching goals that try to have an influence in Athens County. So it’ll be great if these kids are learning this...So I kind of want the perspective of extending this into college... So I’ve kind of built our Success Skills as an extension of this.

He then vetted his proposed indicators with an internal faculty committee that he pulled together because of their “experience in the realm of sustainability” as well as their varying perspectives. His hope was that with these aspiring sustainability indicators as skills that students must accomplish while at Hocking, faculty in those not-so-obvious disciplines will be prompted to revisit their curriculum and think about ways to incorporate sustainability.

As of October 2011, progress with revised indicator language for Hocking’s sixth Whole Success Skill was on hold. Almost immediately after Wakeman presented his proposal to the Academic Affairs Council he was instructed by Hocking’s President to focus his attention on the college’s transition from quarters to semesters. Over the phone, Wakeman explained that there was so much more than course revision to consider, such as financial aid cycles, academic process proofing, graduate analysis - and none of this was where it needed to be in order for them to be on track for transitioning in fall 2012. Thus, aside from some routine reporting, operations of the Office of Sustainability are temporarily on hold. Wakeman fully expected to pick up where he left off - with everything - as soon as the transition to semesters smoothed out.

**Conclusion**

While Hocking’s story is one of relative success at tying campus systems (in this case natural) to curriculum, the fact is, Hocking has advantages that the majority of
campuses do not. Few schools can boast a forest as learning lab. But there is value in considering their holistic approach, looking at campus sustainability as a whole, taking a fresh and informed eye to existing connections and finding new ones. Hocking was able to start with their strengths and work on institutional change with the blessing of a supportive leadership. They are an example that there is no one fix to sustainability literacy even within one campus. To really approach a cross-curriculum initiative it must happen from all angles possible; in this case, it did so organically through their natural resources curriculum, support from the orientation program, and by proposing to make sustainability a learning priority for every student at Hocking.

That said, it was disappointing to hear that Wakeman’s duties had been prioritized away from sustainability. No doubt getting the college up to speed with the rest of the state for the transition to semesters is a huge undertaking and should be an immediate priority. It’s hard to argue with. But if you zoom out and look beyond Hocking, couldn’t the same be said for unquantifiable and looming environmental and economic disasters? Do we really have the luxury of putting it aside? I couldn’t help but recall the ordeal with OBR, to which sustainability was still considered something additional, expendable. Wakeman was confident he would be back to it as soon as possible⁴.

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⁴ As of May 2012, Wakeman does not expect to return to the Office of Sustainability. He intends to advocate for the Sustainability Coordinator position to be re-listed and filled later in the year. He remains hopeful in his initial sustainability curriculum efforts, however, and believes that in his new position as Associate Provost of Curriculum and Instruction he will be at an administrative advantage to see through some of the trickier angles of his efforts, such as altering Hocking’s Success Skills to include sustainability.
CHAPTER FIVE: SYNTHESIS

Hypothesis Testing

Key Players

- Question 1: Which campus constituents have been key players in advocating for, creating, or deterring sustainability curricula?

- Assertion: (A) Faculty members who have personal connections to sustainability issues and/or who are in tune with the mounting environmental and socio-economic crises we face and recognize a responsibility toward teaching it, as well as supportive administrators have been advocates for sustainability curricula. (B) Faculty members that are unaware of sustainability issues, who do not understand sustainability or its connection to their discipline, and who hold tight to the disciplinary paradigm in which they were educated will be reluctant participants toward the integration of sustainability curricula.

My research has echoed McNamara’s 2010 study in that faculty members are the primary advocates of creating sustainability curricula. In the case of the OU regional campuses, Dr. Michele Morrone, through her own research into environmental literacy and her participation in the Piedmont Project, recognized the need and opportunity to initiate faculty development for teaching sustainability for OU (Morrone, Manci, & Carr, 2001). Together she and several invested faculty implemented the Kanawha Project which trained the faculty ambassadors, Debra Smith, Gary Haynes and Orianna Carter at the regional campuses. These ambassadors then returned to their respective campuses and recruited other faculty members to the cause, such as Matt Wanat, Margaret McAdams,
and Purba Das. In the case of Hocking College, Sustainability Coordinator, Joe Wakeman led the way for faculty members Bob Sabo, Jim Downs, and Dave Swanson to marry sustainability topics in their courses to the campus’s forested land, and in such a way that complemented the goals of each course and the sustainability of the campus itself. And in keeping with McNamara’s (2010) finding, faculty members also emerged as a reluctant constituent group.

Recalling the arguments of Freire (1970), Orr (1994), and Cortese (2003), the expectation of education to impart to students compartmentalized knowledge that is disassociated from the world they live in to the end of churning out competitive professionals – who may in fact also be distracted by the over-stimulating man-made advancements and customs that have become part of that world – not to mention that so many educators were educated within this system and therefore carry on its values – has made attracting many faculty to the efforts of sustainability education one of the challenges of the movement. Smith cited this difficulty in the lack of communications between departments and in her perception that “faculty don’t see themselves always as people who teach people how to learn.” In Haynes’s experience several faculty have other obligations outside of their [often] adjunct positions at the college and therefore have little time or motivation to devote to innovation, an issue exacerbated by the commuter nature of the campus. Carter seemed to face the worst case of faculty apathy; as of our first interview in fall 2010, the few tenured faculty on Southern’s campus were

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5 I must point out that while the literature and my own research do identify faculty members as being chief among the challengers of sustainability curricula, this is not to say that several among this faculty group are not doing various credible things in the realm of active and engaged learning. This study is specifically about the treatment of sustainability as a fundamental topic of higher education curricula, not the quality of education provided by those who haven’t gotten on board for a variety of reasons.
too busy or could not prioritize follow-up meetings and she saw no interest from adjunct faculty. I was happy to learn later of her partnership with Das on HLTH 490, but still her ambassador role has been slow going. Even in Wakeman’s account he was still struggling with how to achieve buy-in from the disciplines outside the natural resources program, such as business. It is the tendency toward compartmentalizing subjects and knowledge that Cortese (2003) points out that makes realizing the inherent cross-disciplinary connections to sustainability so difficult for some.

*Institutional Practice and Sustainability Education*

- Question 2: How do institutional practices and academic sustainability efforts interact?

- Assertion: Institutional practices and academic sustainability interact in such ways that sustainable infrastructure and initiatives on campus can be used as learning tools or demonstration “labs” for students. Students may also learn from interacting with sustainability practices on campus by investigating solutions to problems or shortcomings in campus sustainability.

Hocking College is an ideal example of institutional practice overlapping with academic sustainability efforts. In an effort to increase sustainability in practice, Wakeman recognized a need for a land management plan, which has turned into an ever-evolving hands-on project for forestry students, with ample opportunities for collaborative learning from other departments within the natural resources program and beyond. This is much like what Berea College was able to do with its farmland and
riparian ecosystems (Bardaglio, 2007), and is a brilliant example of Orr’s (1994) call for learning through hands-on field experience so as to remove abstraction and for engaging students and faculty in real world problem solving. But not all schools will have the natural assets that Hocking has⁶.

For the OU regional campuses the practice portion appeared to crop up as a symptom of Kanawha Project efforts. For the Lancaster campus it was the establishment of a Campus Garden, a fixture that has become a face for sustainability on campus and point of pride for students involved. This has also opened up doors for other curricular connections, such as biology, and other sustainability measures such as composting and providing for the local food pantry. At Chillicothe, Haynes continued to hold “green-bag” lunch hours, even if only to raise awareness with his colleagues of sustainability measures on campus and to brainstorm; the latter resulted in a fairly simple switch to post-consumer content recycled paper, which is now purchased across campus. When I visited Carter at Southern’s campus in October 2010, she was tucked away in a hard-to-find office in a confusingly-organized building in which I honestly don’t recall seeing any other people. And I can’t help but picture her like that when I reflect on this case study, siloed away, but doing her best with what she has. She has at least raised the bar for biology courses at the campus by taking studies out into the field and getting students’ attention, too. Carter’s situation is not unique, however, and is a common symptom of the institutional characteristics of the regional campuses.

⁶ While hands-on learning in the field and in the community has been known to provide a richer, more engaging learning experience than traditional classroom scenarios, delivering all lessons this way simply is not practical. Thus, initiatives like the Kanawha Project and incorporating sustainability into Hocking’s Success Skills are important avenues to bringing sustainability into all manner of disciplinary setting. The critical common denominator is connecting lessons to the real, outside world, whether they are actually standing in it at the time or not.
Institutional Characteristics

- Question 3: What institutional characteristics have enhanced or impeded sustainability curricula?

- Assertion: (A) Departmental silos, dependence on compartmentalized knowledge, and the tendency to focus on faculty/student advancement over education for character and citizenship are institutional characteristics common in U.S. higher education that have been impediments to sustainability curricula. (B) Instances of sustainable infrastructure and practice being used to enhance educational experiences, as well as success stories of place-based training have enhanced sustainability curricula.

The institutional characteristics outlined in the literature are largely general observations of the paradigm of higher education that these institutions operate within. These include becoming so entrenched in compartmentalizing knowledge between disciplines that it is next to impossible to see sustainability as something innate to learning, rather than something separate and extra, its own discipline (Cortese, 2003, & Haigh, 2005). Within this system, we are even taught to see ourselves and our human systems as existing outside of nature and the ecological systems we depend on (Orr, 1994). Additionally, the system values quantity of knowledge versus experiential learning and real-world applications thereof (Freire, 1970). These characteristics have impeded sustainability curricula development system-wide. However, characteristics unique to the campuses studied have also had an impact.
For the OU regional campuses, their seclusion from the decision-making processes - and the momentum and support of the Kanawha Project - at the main campus have created challenges to their creation and integration of sustainability curriculum, but it has not made it impossible. Both Smith and Carter were able to pass a new interdisciplinary course through the academic approval process, though it took some creative maneuvering to find the right department and listing so as not to set off any alarms for redundancy or lack of necessity. Meanwhile, Smith actually cited the seclusion of Lancaster’s campus as an asset in drawing together faculty from different disciplines because they are in closer quarters, facilitating communication and cooperation. Haynes and Carter, however, felt that lack of faculty investment in the campus and culture impeded many from opting to do something innovative or additional; of course, this perceived attitude plays right into the broader system characteristics outlined above.

The literature did highlight cases in which institutional characteristics significantly enhanced sustainability curriculum development, such as the natural learning laboratories at Berea College or Michigan State University calling upon its location and setting to achieve sustainability education goals through place-based programs (Bardaglio, 2007, & DeLind & Link, 2004). These, of course, represent models similar to what Hocking was able to achieve by creating sustainability curriculum and real-world problem-solving projects with its forest and its management plan at the center.

Leadership by the administration and financial support also play a roll. The Ohio University Sustainability Plan, adopted by President McDavis in June 2011 and in its second draft as of November 2011, originated from a diverse group of stakeholders on the Athens campus. The Sustainability Plan did not make any kind of appearance in my
interviews, however, the practices adopted therein are intended to encompass the regional campuses as well. The Sustainability Plan states goals to “Improve sustainability literacy of students, faculty and staff,” including “incorporate[ing] sustainability into orientation activities” and “support[ing] the development of courses that integrate sustainability themes and issues” (Ohio University Sustainability Plan, 2011). Seeing these pledges come into practice in the near future would surely mean increased recognition and support for the Kanawha Project on the regional campuses. Furthermore, the initial 1804 Fund award for the Kanawha Project was made possible by the University’s Foundation. It is certainly a beneficial institutional characteristic to have the University endowment set aside funds to grant toward “curricular innovations” such as sustainability curricula.

Constituent Responses

- Question 4: How have campus constituents responded to the integration or creation of sustainability curricula?
- Assertion: Campus administration and academic affairs boards have been accepting, in theory, of sustainability curricula when it is tied into existing campus goals. Faculty will largely react according to the camp they fall into in question 1.

Overall, my research revealed positive responses to the resulting integration of sustainability curricula (excepting resistance or apathy to getting involved, which is discussed above). Acceptance came most easily when it could be tied to an existing initiative or mission. For example, just as Oakland Community College’s Curriculum
Research Task Force was able to make a case for overhauling the curriculum to include sustainability indicators by including other commonly acceptable indicators in their proposal, Wakeman at Hocking College was able to easily tie the importance of a forest management plan (which resulted in a wealth of sustainability curricula opportunities) into the sustainability master plan, envisioned by the college president, Ron Erickson (Rowe, 2004). (It also helps to have supportive leadership!) And if quality education, citizenship, learner engagement, employability, to name a few, are all commonly accepted goals of higher education, certainly there are numerous arguments that could be made for teaching sustainability in tandem with the college mission.

Though students were not interviewed directly as part of my research, faculty interviewees in each of these case studies conveyed having witnessed a positive student reaction to the integration of sustainability curricula in the form of enhanced engagement and investment in their coursework, campus and even community. The campus garden at Lancaster enabled students to demonstrate unique skill sets that they wouldn’t normally be able to showcase to their peers in a traditional indoor classroom. It also drew students in by enabling connections to local food issues and farming practices. Students now take a sense of pride in giving back to the community through food donations. This is education as Orr (1994) would prescribe it, illuminating character and citizenship and empowering students to understand they can effect positive change.

At Chillicothe, fine arts students not only met course objectives of installing art to encompass a space, but they did so using plastic materials they retrieved from the woods abutting campus. Through this exercise the students were able to connect to their campus landscape, view it not as a place they visit a few times a week, but as a place they inhabit,
affect, and are responsible for. Their resulting art installation was intended to raise this awareness among their peers as well, allowing these students to wield creative power and realize transformative abilities, educational opportunities that Freire (1970) laments as missing from our current educational system.

At Southern, Carter is witnessing greater investment from her students in their coursework, so engaged by the hands-on fieldwork that they are taking more classes with her and developing their own independent studies to support the atrazine frog research. And not just because the fieldwork is more “fun” than abstract class lectures, but because this research is in the place they live, about things that have very real effects on the ecosystems nearby – which they were introduced to because of this study – and ultimately their own health.

The story is no different in the case of Hocking College, where forestry students working on the land management plan can take pride in real world problem solving to sustain Hocking’s forests. Through the project, even the wildlife students are reaching across disciplines to apply lessons on long-term landscape levels. Hocking represents Orr’s (1994) sixth principle for education on a living planet, or the institution leading by example through practice. Only in this case, the students are implementing the practice and gaining skills and sustainability world views and values that they can take into their own careers.

If success of these efforts is measured according to Jensen (2008), that is, on the basis of students’ attitudes toward what they are learning, these cases demonstrate that the integration of sustainability principles into the educational experience of students – and the cross-disciplinary systems thinking and real-world problem solving that come
with it – serve to foster enriched learning, stronger citizenship, and activism. The results show not only more effective learning, but hopefully the creation of citizens capable of using their education responsibly, poised to change the world for the better (Orr, 1994, & Friere, 1970). And yet, I’d be amiss to apply this evidence to students only. As Orr (1994) said, learning does not cease when we leave the classroom. Ever. And the same mind shift has to happen for faculty who have been teaching – and learning – in the dominant educational paradigm up until this point. I think Carter said it best: “I do have a responsibility. I should address these issues…to provide and hand down to the student their own awareness.”

*External Politics*

- Question 5: How have external politics affected the integration or creation of sustainability curricula?

- Assertion: External politics will affect the integration or creation of sustainability curricula according to the popular political platforms of the current administration, leaving sustainability curricula vulnerable to inevitable political change.

Sustainability has become a highly politicized issue because of the connotations it holds for both political parties. From a liberal standpoint - and I am obviously generalizing here - it means clean energy, economic security, and more equal access to resources. For conservatives, it can mean environmental radicalism, infringement on American freedom, and “green” corporate profit. Unfortunately, these snap judgments
can make comprehending the scope and complexity of sustainability in order to reach common goals very difficult and impede the discovery of common ground communication between the two camps. I’m not intending to debate political platforms here, but it is important to recognize how the political climate can affect treatment of sustainability as an educational topic. According to Orr (2009, pp. 6-7), politics is the reason we are facing crisis instead of already dealing with it thanks to ignorance by both parties to urgent warnings and failure to seek solutions. And he knows, having presented the “Wolfcreek Statement” on improved energy policy to President Carter in 1976, of which nothing has become (Orr, 2009, p. 23). If the dominant political views of the state are dismissing the validity of sustainability’s import to the future of the human race - ergo, education about it - then it is only going to get harder for advocates to gain any ground within their institution, for we know from Sterling (2001) that the educational system and its values are subject to being shaped by the cultural trends of society and favor market values to democratic ones (a symptom of that very society). This has all been evident in the political turn in Ohio in regard to educational priorities and even environmental conservation in the state.

This does not, however, necessarily mean that students, from whatever political background, will resist sustainability education when confronted with it. Carter reported meeting objections from her students when she first posed the sustainability theme to them. She credited this to media bias and what I can only imagine was that same sort of

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7 The sustainability movement has become complicated by more than just political camps. Opposing too are the macro-sized efforts at sustainable development and global crisis intervention, and the ground-up localized efforts of grassroots groups seeking justice and representation for a particular cause (Parr, 2009). Then, of course, there is also the water muddying of the growing popularity of “green” consumer goods, which sometimes only serve to convince society that they fully grasp sustainability and the stakes at hand and can make everything right by simply using a cleaner with a happy plant on the front (Parr, 2009).
political connotation mentioned above. But Carter was clever; by continually steering the conversation back to public health and relating it to their own lives, families, and communities she was able to invest them in the study and clear political bias from the table. That’s the sort of education that should be happening in this country instead of tiptoeing around taboo topics, and politics and corporate interests ruling what students should be able to consider and comprehend. If you let them, they’re rather smart enough to decide for themselves.

Challenges Overcome

- Question 6: What challenges to integrating or creating sustainability curricula have been overcome?
- Assertion: The challenging institutional characteristics in question 3 as well as the reluctant faculty attitudes in question 1 have been overcome in some cases by engaging faculty through training or incentives.

The challenges presented by our educational system to the integration of sustainability curricula have already been outlined at length above and I will not belabor the points of Freire (1970), Orr (1994), Haigh (2005), Cortese (2003), and Sterling (2001) here. Let’s look instead at what successes these case studies have demonstrated in overcoming, or side-stepping, these barriers.

Challenge #1: Knowledge is taught in the abstract without real-world applications or implications (Freire, 1970, & Orr, 1994).
Each of these profiles has illustrated an example of the ways faculty have drawn students outside the classroom and the world around them. For Lancaster, it was the campus garden; for Chillicothe, the art-installation turned campus clean-up/advocacy campaign; for Southern, the fieldwork looking for Atrazine in frogs; and for Hocking, the forest management plan.

Challenge #2: Knowledge is compartmentalized into disciplines, lacking the context of interdependent systems necessary to teach and comprehend sustainability (Cortese, 2003, & Orr, 1994).

The best possible example of this is Hocking’s use of their forest as an interdisciplinary learning lab for the many programs within their Natural Resources school and beyond. Through this effort, programs that had been working seemingly side-by-side but completely oblivious of one another are now finding ways to cooperate and build on each other to understand what it really means to sustain a forest. The campus garden at Lancaster once again proved an asset to their efforts in that it has become a common ground for several disciplines, including: Health, English, Physics, and Biology. The regional campus may also be in an advantageous position for cross-disciplinary collaborations due to their close quarters on a smaller campus, as cited by Smith. Both Smith and Carter were able to create cross-disciplinary sustainability-focused courses in spite of the silos between departments. However, they had to do so creatively, shepherding them through non-traditional avenues so as to avoid pushback, a symptom of the stagnant state of education and of the rampant lack of understanding of the fundamental nature of sustainability.
Challenge #3: Sustainability is viewed as something additional to existing curricula (Haigh, 2005).

The success of the Kanawha Project and of Hocking’s efforts at integrating sustainability within existing courses proves this view as false. And yet, this dominant mindset of education can only be overcome through education and leadership. The American College and University Presidents’ Climate Commitment is an example of the kind of public leadership statement higher education administrations can make to show that sustainability is a mission of the institution. Both Dr. Ron Erickson, president of Hocking College and Dr. Roderick McDavis, president of Ohio University have signed the Climate Commitment, thus pledging to carry out the climate actions and education outlined within and cited above.

Challenge #4: The purpose of education is seen as mastery of a subject over citizenship, and places humanity outside of ecology (Orr, 1994).

Going back to the four core hands-on, real-world projects cited in Challenge #1, we see evidence of promoting individual and societal responsibility as well as humans existing within and affecting their natural environment. Again, “hands-on” may be ideal according to Orr (1994), but the real-world connection is the more crucial characteristic and can be achieved in any educational setting. The garden not only promoted a connection to food systems, but also an awareness of community access to fresh food, giving the students an avenue to effect positive change through food donations (Freire, 1970). The plastic art installation showed students taking pride in their campus grounds and using their new-found knowledge responsibly, to spread awareness to their peers (Orr, 1994). The pesticide fieldwork gave students an opportunity to experience the
connection between the natural environment and their own health, and likewise the actions of society and the health of the environment (Orr, 1994). And in contributing to the forest management plan, Hocking students are ensuring responsible stewardship of the forest for years to come.

**Barriers Remaining**

- **Question 7:** What barriers remain to integrating or creating sustainability curricula?
- **Assertion:** The barriers in question 1 and 3 still exist, stunting the system’s and students’ ability to effect social change; meanwhile, curriculum enhancement is not always seen as a sustainability goal.

While the case studies described herein have shown a number of unique and creative ways that faculty at these colleges have overcome the challenges to sustainability curricula that the dominant paradigm of higher education in the U.S. poses, that dominant paradigm is still the rule and these successes are the exception. The barriers that remain are the very same that have always been there. As Wanat said, “It almost has to be a mission of the university or it doesn’t exist.” And as long as sustainability is a kind of peripheral priority, or at worst, a half-empty catch phrase to attract enrollment, for most campuses, with curriculum sometimes not even making the list we are not going to see the kind of proactive changes needed to make sustainability fundamental to the educational experience (McNamara, 2010). Challenging still is that there is no widely accepted prescription for teaching sustainability, or for campus sustainability for that
matter\textsuperscript{8}, leaving so many making it up as they go along and more often than not confronting barriers rooted in the dominant paradigm among campus constituents and processes (STARS, 2012).

\textit{Conclusions}

In my time spent analyzing these case studies, getting to know my interviewees, and now more than a year into my own sustainability curricula work at Johnson County Community College (JCCC), I am convinced that teaching sustainability must be tackled from every possible angle. Individual curriculum modifications, interdisciplinary course creation, and real-world problem solving projects are wonderful successes, and it’s evident from the impressions of my interviewees that the students they reach are impressed with a greater understanding of the place they live and how they can be positive contributors to its sustainability. But these faculty innovators cannot alone effect the change that we need to turn any of the sustainability crises we face, and which grow rapidly more unstable all the time. No, it also has to become part of the fundamental learning expectations of the college.

I admire Wakeman’s approach with Hocking’s Success Skills and as I write this I am preparing my own approach to JCCC’s Student Learning Outcomes. I recently took my proposed language for a sustainability outcome to the faculty sustainability curriculum committee here, a group of very dedicated and hard working faculty who have

\textsuperscript{8} This is becoming less and less obscure thanks to the efforts of AASHE, STARS, and the SEED (Sustainability Education & Economic Development) center, which either facilitate sharing of resources and best practices or enable rating and comparison on progress of efforts amongst campuses. But momentum for these efforts is still building, and likewise still competing with the dominant paradigm and the challenges outlined.
been brainstorming about sustainability curricula at JCCC before my position was even invented. I wanted their advice on the language before I met with the executive vice president of academic affairs, the first step in what will surely be a long process toward approval (or rejection) by the Educational Affairs Committee.

Their response, to me, was laughable. “Kim, this isn’t going to fly, you’re better off trying to embed it in an existing outcome.” (Much like the reception Wakeman received from his board). “Kim, you have a bright future here, we don’t want to see you be the bad guy.” These are faculty who believe sustainability should be an educational priority! Now I appreciated everything they were saying, because they obviously know the inside politics of academic processes here far better than I do. But in that moment it was so completely evident to me why things in these institutions change at a snail’s pace; the educational system is so wound up in its processes and approvals, so institutionalized!

As of May 2012, my Learning Outcome quest was flat-out denied any entertainment of an additional sustainability-focused outcome. “The outcomes should be timeless,” I was told. To which I responded that we’re doing our students a disservice if we refuse to allow education to evolve with the world around them (while I’m simultaneously thinking, what could be more “timeless” than survival?). And yet, this preliminary meeting was not the least bit a failure. The Deans of Academic Affairs and Curriculum as well as the Director of Outcomes Assessment were actually open to enhancing more than one existing outcome to include sustainability, either by name or in concept. That was a compromise I was satisfied to make, but not before I laid out my argument for the need for and advantage of having a dedicated sustainability outcome,
including sharing the results of an Institutional Research survey from the previous fall, indicating that students recognized the importance of understanding sustainability and their interest in learning more about it (see Appendix D), just so they knew that this wasn’t the last they would hear about it.

Regardless of how it appears on the page – and maybe this resolution will work better than I originally thought, after all, the Outcomes office made the case that it would probably be treated much more seriously if it were part of an outcome they were already measuring rather than a new separate thing (tracking outcomes assessment at JCCC is still so new that departments for the time being only have to focus on a single outcome) – I am convinced that sustainability has to be a stated value of the education students will receive at JCCC or it just won’t happen. I know this because I facilitate a version of a Kanawha-type incentive program here, called the Sunflower Project. I’ve held workshops during faculty development days; I’ve tried appealing to deans department by department. No one is against it, per se, but if it’s not required, if it’s not expected, I will only get as far as the faculty who have a vested interest. And the human race simply does not have time for sustainability to be optional. We have set the Earth off to find a “new equilibrium” and it will do so with or without us (Orr, 2009, p. 19).

Sustainability in higher education is a rapidly growing movement, and it’s about time. AASHE, STARS, and SEED are connecting campuses, making resources more readily available and sharing practice more possible. Sustainability curriculum is among their priorities, as is policy. Higher education should be looking to them for support and guidance as campuses embark on their own multi-pronged approach to sustainability curricula. So too should colleges seek strong political advocates, both inside the college
and out, because as long as the dominant system of teaching and learning continues to undervalue interdisciplinary real-world applications of knowledge, that seems to be the best chance at actually creating meaningful change.
BIBLIOGRAPHY


Exploring Sustainability Management
Spring 10-11
2.0 Credit Hours

Course Description:
Advanced projects concerning business technology explored with instructor in teams or one to one. This course is designed to explore topics of health, energy and culture. It is a cross disciplinary exploration of sustainability themes in personal health, energy, entropy, and literature as well as a discussion of managing sustainability in multiple spheres.

This course is designed to be taken by students who are currently enrolled in or have taken any of the following courses: HLTH 202, Eng 323.1, Eng 308J, and Physics 203. These courses are not prerequisites or corequisites, but suggested courses the student has taken or is taking in order to fully appreciate the components of this course.

Instructors:
Matt Wanat
Ph.D., Ohio State University
Assistant Professor
Office: 327 Brasee Hall
T: (740) 654-6711 ext 301
E: wanat@ohio.edu

Sandy Doty
Ph.D., Rensselaer Polytechnic Institute
Associate Professor
Office: 205 Brasee Hall
T: (740) 654-6711 ext. 213
E: dotys@ohio.edu

Debra Smith
M.A., Virginia Polytechnic Institute and State University
Assistant Professor
Office: 206 Herrold Hall
T: (740) 654-6711 ext. 218
E: smithd11@ohio.edu

Required Texts:
Readings as assigned by faculty

Berry, Wendell: *Another Turn of the Crank*, Counter Point, Washington, D.C., 1995 1-887178-03-1

MacKay, David JC; *Sustainable Energy – without the hot air*. Available as a free pdf download at: http://www.withouthotair.com/download.html

**Additional Resources for the Course** – Available at the HVLM library

Berry, Wendell; *The Unsettling of America: Culture and Agriculture*, Sierra Club Books/San Francisco, chapter 6


**Class Time and Location:**

Fridays 1:10 – 3:00 p.m.

Brassee Hall 416

**Goals and Objectives:**

- The student will be able to discuss the concept of sustainability in personal health, energy and entropy, and literature.
- The student will be able to perform simple calculations with respect to sustainability, i.e. resources needed to sustain current energy consumption.
- The student will be able to produce a final project that reflects college level understanding of the themes.
- The student will be able to compare and contrast the disciplinary approaches to sustainability issues.
- The student will be able to identify the issues of managing sustainability within the areas explored in the course.
**Class Format:**

The student will participate in a course designed in a lecture and workshop format with significant group activity to support the production of a final project by each student. Students will interact with faculty and other students to explore the course learning objectives and produce a well researched final project that addresses the themes of the course. All projects will be approved by faculty and throughout the quarter, faculty members will work with the student to produce a final project that is comprehensive and addresses the students’ understanding of the themes of the course. The course will be available on Blackboard where reading assignments and other documents to assist the students will be available.

**Grades:**

This course will use the standard grading scale of Ohio University as detailed in the student handbook. It is the responsibility of the student to be familiar with the standard grading scale, policies and procedures related to grading including disputes regarding grades.

**Grading Scale**

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Grades can be found on the website by clicking “Tools” and then “My Grades”.

**Final Project:**

The final project in the course will be the only opportunity for earning points in the class. The student will be required to either:

- Submit a paper on a topic approved by one of the faculty members of the class
- OR
- Submit a comprehensive project on Blackboard using the wiki tool in accordance with faculty guidelines and approval.

The project must address each of the course objectives thoroughly.

The student will be advised regarding the structure, length and organization of the paper/project by faculty as the student chooses a topic.
Sample topics are:

• Food safety, energy consumption and the concept of sustainability
• Medicine – a business or a sustainable effort?
• Cancer research and its similarity to agribusiness and energy commodities
• Green technology – business as usual or true sustainability?
• Ecocriticism and literature
• Sustainable business

Project – Propose and Grading Rubric

The project for this class should represent a comprehensive understanding of the learning objectives of this course. The intent of the course is to engender college level consideration of a topic approved by a faculty member teaching the course. There are many options for students and a great deal of time will be given to discussing topics with students and guiding their choice. The project may take the form of a paper, a web site, a wiki, or other presentation options as approved by a faculty member. Each area of concentration in the course; health, literature, and physics, will be represented by a faculty member. As the student chooses a topic, they will work with the faculty member aligned with the subject matter chosen.

The project will be graded based on the following considerations:

Grammar, spelling, APA form
College level work is expected with no grammar or spelling errors and appropriate format
The student will be able to discuss the concept of sustainability in personal health, energy and entropy, and literature.

The project will represent a thorough understanding of the concept of sustainability as it relates to the chosen topic area. The student must demonstrate the ability to define sustainability in the chosen content area, explain its relevance to the chosen content area and show evidence of support in the literature.
The student will be able to perform simple calculations with respect to sustainability, i.e. resources needed to sustain current energy consumption.

The project will include a discussion/demonstration of quantitative considerations that relate to the chosen content area. Examples would include calculations of energy use, calculations of financial impacts of sustainability, etc.
The student will be able to produce a final project that reflects college level understanding of the themes.

Regardless of the chosen content area, the project must reflect a consideration of all the themes presented in the course, i.e., health, energy and literature. For example, if the
content area is business related, the project must explain the relationship to health, physics and literature within the project.

The student will be able to compare and contrast the disciplinary approaches to sustainability issues.

The project must also discuss the comparisons and contrasts that exist within the content area in regards to health, physics and literature. For example, if the content area is health, the project needs to discuss how that area is similar to issues of sustainability examined by physics and literature. The student will be able to identify the issues of managing sustainability within the areas explored in the course.

The project must identify and explain the issues of managing sustainability within the chosen content area. For example, what major themes exist in literature that postulate or examine sustainability.

Services
The HVML offers technical assistance to students who have questions about Blackboard, managing files, etc. The technical help is located on the main floor of the Library at the circulation desk. On the Blackboard site, you will find tutorials that may be helpful as you complete assignments.

Discipline and Expected Behaviors
This class will follow Ohio University guidelines as demarked in the student handbook for discipline. It is expected that all class members conduct themselves with respect for the instructor and other students in the class. The student should refrain from the use of cell phones in class for talking, texting, etc. The student will refrain from any language, gestures, or actions that would offend class members or threaten their safety.

Academic Misconduct:
Plagiarism is a serious offense and will result in a score of 0 (zero). Ohio University policies regarding academic honesty and the consequences of dishonesty apply in this class. Please refer to the complete university policy on academic misconduct that includes student rights for grade appeal by accessing http://www.ohio.edu/judiciaries/academic-misconduct.cfm#students

"Academic misconduct is an A1 violation of the Ohio University Student Code of Conduct and is defined by the student code of conduct as dishonesty or deception in fulfilling academic requirements. It includes, but is not limited to, cheating, plagiarism, un-permitted collaboration, forged attendance (when attendance is
required), fabrication (e.g., use of invented information or falsification of research or other findings), using advantages not approved by the instructor (e.g., unauthorized review of a copy of an exam ahead of time), knowingly permitting another student to plagiarize or cheat from one's work, or submitting the same assignment in different courses without consent of the instructor.”

http://www.ohio.edu/judiciaries/academic-misconduct.cfm#students

Attendance
Attendance and participation are very important to the success of the student. There will be It is VERY important that students attend the in class sessions. Excessive unexcused absences (more than 2 University EXCUSED absences) will result in a 5% reduction in overall class grade.

Withdraw from the class is the responsibility of the student.

Extra Credit
There will be no extra credit opportunities in the course. The expectations and opportunities for credit are clearly outlined in the syllabus and no additional work will be given which results in extra credit.

Purpose of Syllabus
The purpose of this syllabus is to clarify expectations of both the students and the instructor. It is intended to be a contract between the students and instructor or the institution and may be amended in writing throughout the course.

“The lectures, classroom activities, and all materials associated with this class and developed by the instructor are copyrighted in the name of the faculty members and this date Feb 2, 2011.

Class Schedule

Class Date
Class Activity
Due Dates
April 1
Intro to class, review of syllabus

April 8
The Writer and Sustainable Culture
Reading Assignment:  Pages 1-63 of Another Turn of the Crank

April 15
Entropy as a Consideration
Reading Assignment: http://www.withouthotair.com/download.html

April 22
Health as a Sustainable Resource
Reading Assignment:
Pages 86-109 of Another Turn of the Crank

April 29
Discussion of projects, small group activities
**Student will submit project title to class faculty advisor**

May 6
Meetings with faculty advisor regarding project
**Students are required to attend as many events as possible during Sustainability Week at OUL – specifically the panel discussion is required**

May 13
Meetings with faculty advisor regarding project

May 20
Meetings with faculty advisor regarding project
**First draft of project due**

May 27
Meetings with faculty advisor regarding project

June 3
Student presentations – short synopsis of projects
**Projects Due**
### APPENDIX B: HOCKING STUDENT SURVEY

#### Results Overview

**Date:** 1/14/2011 4:53 AM PST  
**Responses:** Complete  
**Filter:** No filter applied

1. Please choose any of the following descriptors that best define "Sustainability":

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future</td>
<td>904</td>
<td></td>
</tr>
<tr>
<td>Liberal</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>Tree hugger</td>
<td>224</td>
<td></td>
</tr>
<tr>
<td>Renewable</td>
<td>690</td>
<td></td>
</tr>
<tr>
<td>Efficient</td>
<td>849</td>
<td></td>
</tr>
<tr>
<td>Balance</td>
<td>701</td>
<td></td>
</tr>
<tr>
<td>Granola</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>355</td>
<td></td>
</tr>
<tr>
<td>Endure</td>
<td>460</td>
<td></td>
</tr>
<tr>
<td>Pollution</td>
<td>275</td>
<td></td>
</tr>
<tr>
<td>Socialist</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td>761</td>
<td></td>
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<tr>
<td>Global warming</td>
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<td></td>
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<tr>
<td>Propaganda</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>565</td>
<td></td>
</tr>
<tr>
<td>Carrying capacity</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>Biodiversity</td>
<td>410</td>
<td></td>
</tr>
<tr>
<td>Social Justice</td>
<td>177</td>
<td></td>
</tr>
<tr>
<td>Environment</td>
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</tr>
<tr>
<td>Ecology</td>
<td>497</td>
<td></td>
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<tr>
<td>Communist</td>
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<td>Green</td>
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<td>Extinction</td>
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<td></td>
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<tr>
<td>Garbage</td>
<td>194</td>
<td></td>
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<tr>
<td>Over-regulation</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Corporate Social responsibility</td>
<td>214</td>
<td></td>
</tr>
<tr>
<td>Carbon footprint</td>
<td>345</td>
<td></td>
</tr>
<tr>
<td>Green house gas</td>
<td>321</td>
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</table>

1/14/2011
2. Your age:

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<th>Count</th>
<th>Percentage</th>
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<td>18-21</td>
<td>1083</td>
<td>66%</td>
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<tr>
<td>22-25</td>
<td>175</td>
<td>11%</td>
</tr>
<tr>
<td>26-30</td>
<td>138</td>
<td>8%</td>
</tr>
<tr>
<td>31-40</td>
<td>128</td>
<td>8%</td>
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<tr>
<td>41-50</td>
<td>76</td>
<td>5%</td>
</tr>
<tr>
<td>51-65</td>
<td>25</td>
<td>2%</td>
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<tr>
<td>66+</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>5</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>1632</td>
<td>100%</td>
</tr>
</tbody>
</table>

3. How important is sustainability to your life?

<table>
<thead>
<tr>
<th>Importance Level</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>438</td>
<td>27%</td>
</tr>
<tr>
<td>Very important</td>
<td>642</td>
<td>39%</td>
</tr>
<tr>
<td>Somewhat important</td>
<td>453</td>
<td>28%</td>
</tr>
<tr>
<td>Indifferent</td>
<td>89</td>
<td>5%</td>
</tr>
<tr>
<td>Not important at all</td>
<td>10</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>1632</td>
<td>100%</td>
</tr>
</tbody>
</table>

4. How important will sustainability be to your future career or business?

<table>
<thead>
<tr>
<th>Importance Level</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>632</td>
<td>39%</td>
</tr>
<tr>
<td>Very important</td>
<td>675</td>
<td>41%</td>
</tr>
<tr>
<td>Somewhat important</td>
<td>260</td>
<td>16%</td>
</tr>
<tr>
<td>Indifferent</td>
<td>49</td>
<td>3%</td>
</tr>
<tr>
<td>Not important at all</td>
<td>16</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>1632</td>
<td>100%</td>
</tr>
</tbody>
</table>

5. What do you think of an end-of-year open campus auction or garage sale?

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great idea</td>
<td>738</td>
<td>43%</td>
</tr>
<tr>
<td>Good idea</td>
<td>596</td>
<td>37%</td>
</tr>
<tr>
<td>OK idea</td>
<td>309</td>
<td>19%</td>
</tr>
<tr>
<td>Bad idea</td>
<td>19</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>1632</td>
<td>100%</td>
</tr>
</tbody>
</table>

6. Are you interested in participating in an event to benefit the community?

| Yes | 589 | 36% |
| No | 195 | 12% |
| Depends on the event | 848 | 52% |
| Total | 1632 | 100% |
DEMONSTRATES KNOWLEDGE OF SCIENCE AND THE ENVIRONMENT
(F-1) Demonstrates knowledge of basic scientific principles.
1. Applies fundamental concepts governing energy and matter.

2. Applies fundamental concepts of life science.

3. Applies fundamental concepts of geoscience.

4. Applies scientific principles to technology specific processes.

(F-2) Uses scientific method to solve problems.
1. Recognizes and applies components of scientific method.

2. Defines meaning of "theory" as used in science.

3. Applies scientific methods to evaluate problems and design solutions.

4. Recognizes and applies appropriate research techniques.

5. Distinguishes between science and quasi-/pseudo-science.

(F-3) Demonstrates awareness of human physiological, psychological and social development.
1. Applies the concept of homeostasis in all three areas.

2. Describes the interrelationship among the three areas.

(F-4) Demonstrates understanding of factors which contributes to physical and emotional health.
1. Describes environmental influences on physical and emotional health.

2. Recognizes boundaries that an organism maintains to sustain life.

3. Explains how exercise influences physical and emotional health.

4. Explains how nutrition influences physical and emotional health (G-1)

5. Manages stressful situations effectively.
(F-5) Demonstrates awareness of ecological principles.
1. Assesses/evaluates the roles that living and non-living components play in maintaining healthy ecosystems.

2. Describes the flow of energy and matter through ecosystems and the natural environment.

3. Recognizes the significance of biodiversity to healthy ecosystems.

4. Explains how population and carrying capacity contribute to environmental change.

(F-6) Identifies environmental impacts of human behavior.
1. Assesses/evaluates the impact of human activities on the natural environment.

2. Disseminates human behavior from natural process as they relate to environmental change.

3. Recognizes the roles of economics, human society and the natural environment as parts of an interactive dynamic system.

4. Defines and cites examples of Environmental Justice.

(F-7) Demonstrates understanding and application of sustainable principles.
1. Articulates sustainable approaches to life that minimize negative impacts to future environments.

2. Designs sustainable systems that embrace “cradle to cradle” life systems.

3. Identifies and calculates individual and/or group ecological footprints.

4. Evaluates economic progress beyond the financial bottom line. Rather, progress is measured by multiple indicators such as the natural environment, health factors, social responsibility and the overall well-being of a population.
DATE: October, 2011
TO: Kim Criner
FROM: Gina Brewer
SUBJECT: STUDENT SURVEY OF SUSTAINABILITY—FALL 2011

The Office of Institutional Research was recently asked to survey JCCC students to gain insight into their perceptions of and interest in sustainability. The survey was administered electronically via email to 4,666 current credit students; two follow-up emails were sent as reminders to those who had not responded. In total, 798 surveys were submitted, resulting in a response rate of 17%.

Survey respondents were 36% male and 64% female. Respondents’ ages ranged from 17 to 71 years old with an average age of 29, although most respondents were between the ages of 18 and 24 (47%). Nearly three-fourths (73%) of those responding were Caucasian.

Results are highlighted in the following bulleted points and detailed tables.

- Twenty-four percent of respondents indicated they understand the term ‘sustainability’ very well; 41% indicated they understand it well.

- Two-thirds of respondents associated the following words with the term ‘sustainability’: recycling, efficiency, and renewable.

- Nearly half of those responding indicated they are very interested in the topics of Health & the Environment (46%) and Renewable Energy (45%).

- Seventy-two percent either agreed or strongly agreed that studying topics related to sustainability will make them a more responsible citizen; 67% agreed/strongly agreed that studying topics related to sustainability will improve their quality of life.
Table 1
How Well Do You Believe You Understand the Meaning of the Term “Sustainability”?  

<table>
<thead>
<tr>
<th>Understanding Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Well</td>
<td>193</td>
<td>24.4%</td>
</tr>
<tr>
<td>Well</td>
<td>322</td>
<td>40.8%</td>
</tr>
<tr>
<td>Average</td>
<td>231</td>
<td>29.2%</td>
</tr>
<tr>
<td>Poorly</td>
<td>34</td>
<td>4.3%</td>
</tr>
<tr>
<td>Very Poorly</td>
<td>10</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Total Respondents</strong></td>
<td><strong>790</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table 2
Which of the Following Words Do You Associate with the Term ‘Sustainability’?  

<table>
<thead>
<tr>
<th>Word</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling</td>
<td>535</td>
<td>67.0%</td>
</tr>
<tr>
<td>Efficiency</td>
<td>534</td>
<td>66.9%</td>
</tr>
<tr>
<td>Renewable</td>
<td>528</td>
<td>66.2%</td>
</tr>
<tr>
<td>Future Generations</td>
<td>519</td>
<td>65.0%</td>
</tr>
<tr>
<td>Responsibility</td>
<td>515</td>
<td>64.5%</td>
</tr>
<tr>
<td>Ecosystems</td>
<td>490</td>
<td>61.4%</td>
</tr>
<tr>
<td>Daily Habits</td>
<td>464</td>
<td>58.1%</td>
</tr>
<tr>
<td>Nature</td>
<td>444</td>
<td>55.6%</td>
</tr>
<tr>
<td>Green</td>
<td>429</td>
<td>53.8%</td>
</tr>
<tr>
<td>Important</td>
<td>416</td>
<td>52.1%</td>
</tr>
<tr>
<td>Farming</td>
<td>406</td>
<td>50.9%</td>
</tr>
<tr>
<td>Population Growth</td>
<td>378</td>
<td>47.4%</td>
</tr>
<tr>
<td>Economics</td>
<td>375</td>
<td>47.0%</td>
</tr>
<tr>
<td>Pollution</td>
<td>362</td>
<td>45.4%</td>
</tr>
<tr>
<td>Public Health</td>
<td>348</td>
<td>43.6%</td>
</tr>
<tr>
<td>Waste</td>
<td>342</td>
<td>42.9%</td>
</tr>
<tr>
<td>Globalization</td>
<td>317</td>
<td>39.7%</td>
</tr>
<tr>
<td>Fossil Fuels</td>
<td>306</td>
<td>38.3%</td>
</tr>
<tr>
<td>Urban Planning</td>
<td>301</td>
<td>37.7%</td>
</tr>
<tr>
<td>Climate Change</td>
<td>297</td>
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<tr>
<td>Water Rights</td>
<td>250</td>
<td>31.3%</td>
</tr>
<tr>
<td>Politics</td>
<td>218</td>
<td>27.3%</td>
</tr>
<tr>
<td>Social Justice</td>
<td>191</td>
<td>23.9%</td>
</tr>
<tr>
<td>Poverty</td>
<td>194</td>
<td>24.3%</td>
</tr>
<tr>
<td>Profitable</td>
<td>164</td>
<td>20.6%</td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
</tr>
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<td>----------------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>Extinction</td>
<td>159</td>
<td>19.9</td>
</tr>
<tr>
<td>Expensive</td>
<td>92</td>
<td>11.5</td>
</tr>
<tr>
<td>Over-regulation</td>
<td>86</td>
<td>10.8</td>
</tr>
<tr>
<td>Externalities</td>
<td>57</td>
<td>7.1</td>
</tr>
<tr>
<td>Hippies</td>
<td>49</td>
<td>6.1</td>
</tr>
<tr>
<td>Fad</td>
<td>42</td>
<td>5.3</td>
</tr>
<tr>
<td>Other</td>
<td>53</td>
<td>6.6</td>
</tr>
<tr>
<td><strong>Total Respondents</strong></td>
<td><strong>798</strong></td>
<td></td>
</tr>
</tbody>
</table>

Note: Multiple responses allowed; therefore, percents total more than 100%.
Table 3: Please indicate your level of interest in each of the following topics and whether or not each topic has been discussed in coursework.

<p>| Discuss | Level of Agreement | Yes | No | N | N | % | % | % | % | % | % | % | % | % |
|---------|---------------------|-----|----|---|---|---|---|---|---|---|---|---|---|---|---|
| Water conservation | Interested | 18.4 | 4.4 | 76.2 | 3.2 | 18.4 | 38.2 | 7.6 | 38.2 | 2.4 | 18.4 | 2.4 | 18.4 | 2.4 | 18.4 |
| Business ethics | Interested | 22.1 | 3.1 | 74.8 | 3.2 | 21.1 | 17.6 | 76.2 | 17.6 | 21.1 | 17.6 | 21.1 | 17.6 | 21.1 | 17.6 |
| Social justice | Interested | 38.2 | 4.4 | 67.4 | 4.4 | 38.2 | 2.4 | 67.4 | 2.4 | 38.2 | 2.4 | 67.4 | 2.4 | 38.2 | 2.4 |
| Renewable energy | Interested | 2.4 | 3.1 | 97.6 | 3.1 | 2.4 | 17.6 | 97.6 | 17.6 | 2.4 | 17.6 | 97.6 | 17.6 | 2.4 | 17.6 |
| Nuclear history | Interested | 38.2 | 4.4 | 67.4 | 4.4 | 38.2 | 2.4 | 67.4 | 2.4 | 38.2 | 2.4 | 67.4 | 2.4 | 38.2 | 2.4 |
| Food security | Interested | 4.4 | 3.1 | 96.2 | 3.1 | 4.4 | 17.6 | 96.2 | 17.6 | 4.4 | 17.6 | 96.2 | 17.6 | 4.4 | 17.6 |
| Environmental regulations | Interested | 6.2 | 3.1 | 93.8 | 3.1 | 6.2 | 37.5 | 93.8 | 37.5 | 6.2 | 37.5 | 93.8 | 37.5 | 6.2 | 37.5 |
| Climate change | Interested | 3.1 | 3.1 | 96.2 | 3.1 | 3.1 | 6.9 | 96.2 | 6.9 | 3.1 | 6.9 | 96.2 | 6.9 | 3.1 | 6.9 |
| Alternative transportation | Interested | 3.1 | 3.1 | 96.2 | 3.1 | 3.1 | 6.9 | 96.2 | 6.9 | 3.1 | 6.9 | 96.2 | 6.9 | 3.1 | 6.9 |</p>
<table>
<thead>
<tr>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>8.3</td>
<td>22.1</td>
<td>27.7</td>
<td>35.4</td>
</tr>
<tr>
<td>25.6</td>
<td>33.4</td>
<td>20.8</td>
<td>15.2</td>
<td>5.0</td>
</tr>
<tr>
<td>3.9</td>
<td>10.3</td>
<td>21.6</td>
<td>39.2</td>
<td>27.9</td>
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<td>3.9</td>
<td>10.3</td>
<td>21.6</td>
<td>39.2</td>
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<td>3.7</td>
<td>5.0</td>
<td>31.3</td>
<td>9.9</td>
<td>7.9</td>
</tr>
<tr>
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<td>4.0</td>
<td>28.9</td>
<td>4.0</td>
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</tbody>
</table>

Please indicate your level of agreement with each of the following statements.