

AN ABSTRACT OF THE DISSERTATION OF

Peter G. Williams for the degree of Doctor of Philosophy in Education presented on October 16, 2009.

Title: Institutionalizing Sustainability in Community Colleges: The Role of the College President

Abstract approved:

George H. Copa

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. The following questions guided the research: (a) What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard? (b) What are the important influences to achieving institutionalization of sustainability in community colleges? (c) What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect? The philosophic approach was interpretive social science and the research method was case study. This study involved visiting three community college campuses, which made up the cases, and collecting data, primarily through interviews, which were supplemented by review of documents and observations of the participant’s home institution. For each of the cases, two interviews were conducted. One was with the college president, and one was with a sustainability champion.

Five themes describing the meaning of institutionalized sustainability emerged from the individual case studies. These themes were: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, (d) extensive student involvement in sustainability activities, and (e) knowledge of sustainability of leaders. Four of the same themes were evident for all of the colleges: (a) widespread use of

sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, and (d) knowledge of sustainability of leaders.

Four themes emerged from the interviews concerning what were the important influences to achieving institutionalization of sustainability in community colleges. These themes were: (a) lack of financial resources, (b) cross disciplinary sustainability initiatives, (c) lack of support in sustainability by district leaders, and (d) passionate support of sustainability by college community. A key finding of my study in regard to the second research question was the discovery that two themes concerning the institutionalization of sustainability were shared by two of the colleges: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives.

Three general themes emerged from the interviews, observations, and supporting documents concerning what role the college president played in addressing institutionalizing sustainability in community colleges. These themes were: (a) support sustainability at every opportunity, (b) incorporate sustainability into strategic plan, and (c) sign on to national sustainability initiatives. A key finding of my study in regard to the third research question was that all three of the themes concerning the role the college president played in addressing influences to institutionalizing sustainability were shared by all of the colleges.

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Institutionalizing Sustainability in Community Colleges:
The Role of the College President

by
Peter G. Williams

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APPROVED:

Major Professor, representing Education

Dean of the College of Education

Dean of the Graduate School

I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

Peter G. Williams, Author

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DEDICATION

“It’s a Kindergarten bag. It’s full of Kindergarten stuff. It’s like a dissertation, but it’s not.”

-Madeleine Louise, age 5, explaining her new Kindergarten welcome bag to her 3-year-old sister, Heidi Rose.

To my precious daughters Madeleine Louise and Heidi Rose, who need a sustainable world in order to bloom and thrive. To my mother Nancy Dana Williams, who always emphasized education and encouraged me with unconditional love.

Institutionalizing Sustainability in Community Colleges: The Role of the College President

CHAPTER 1: FOCUS AND SIGNIFICANCE

Chapter 1 of the research study will describe the focus and bases for significance of the dissertation study. After a brief introduction, the focus will specifically address the purpose and research questions to be addressed by this study. Then, attention will turn to the reasons that make the study an important contribution to knowledge about leadership in community colleges, and higher education more generally.

Focus of Study

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. As the number of environmental threats to the world appears to escalate, the issue of sustainability is becoming an increasingly important topic. Environmental problems are evident in a variety of forms, including global warming, water pollution, water shortages, air pollution, habitat destruction, species extinction, and ever mounting demands for limited natural resources (Brown, 2006; Millennium Ecosystem Assessment, 2005a; Worldwatch Institute, 2006). The leading international network of climate scientists stated in the Intergovernmental Panel on Climate Change (IPCC) report that global warming is “unequivocal” (Intergovernmental Panel on Climate Change, 2007, p. 5) and that human activity is very likely causing most of the rise in temperatures since the mid-20th century. Holdren, as cited in Rosenthal and Revkin (2007), stated the IPCC report “powerfully underscores the need for a massive effort to slow the pace of global climatic disruption before intolerable consequences become inevitable” (p. A5). As these environmental issues become more evident, institutions of higher education are becoming significant players within society for addressing many of these issues (Hignite, 2006).

Higher education in the United States has become an extremely influential aspect of society (Brubaker & Rudy, 1997; Newman, Couturier, & Scurry, 2004),

and thus provides a strong context for influencing sustainable practices. Many environmentalists, such as Cortese (2003), believe that institutions of higher education must take the lead in influencing societal behavior. “Higher education institutions bear a profound, moral responsibility to increase awareness, knowledge, skills, and values needed to create a just and sustainable future” (p. 17). Presidential leadership may be a critical aspect for influencing sustainable practices on a college campus. “Responsibility for campus sustainability is still diffuse; compelling institutional leadership is needed” (Watts, Albright, Kaplan, & Sirianni, 2006, p. 6). The relationship between community colleges and sustainability is exemplified by the fact that in 2004 the Board of Directors of the American Association of Community Colleges passed a resolution in support of the United Nations Decade of Education for Sustainable Development, which is scheduled from 2005 to 2015 (Rowe, 2005).

Research Purpose

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. The study provides insight and understanding about what it looks like to have sustainability institutionalized at a college campus, what factors impede and support the institutionalization of sustainability, and what role a college president plays in implementing the institutionalization of sustainability.

Research Questions

Three research questions formed the basis of this study:

1. What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard? The rationale for this question was that there seemed to be a big difference between having an environmental initiative, such as a recycling program, and having the concept of sustainability integrated in all aspects of the college. It would be helpful to understand the parameters around this institutionalization of sustainability on a college campus. The terms sustainability and

institutionalization have multiple meanings, and the meanings of these terms will be further probed in the literature review.

2. What are the important influences to achieving institutionalization of sustainability in community colleges? The rationale for this question was that, for any major endeavor on a college campus, there were probably factors that both blocked and facilitated the endeavor. To understand institutionalization of sustainability on a campus, it would be helpful to understand the factors that were both barriers and facilitators.
3. What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect? The rationale for this question was that the core purpose of this study was to understand the role that a college president played in institutionalizing sustainability on a college campus. Specifically, it would be helpful to understand the role a college president had played on campuses that were well known for their sustainability programs and where the president had been a major influence in gaining the college's reputation.

Significance of Study

The role that a college president plays in institutionalizing sustainability on a community college campus has both practical and scholarly importance to society. Understanding the role that college presidents play in community colleges that are exemplary in institutionalizing sustainability is significant because: (a) There is a need to support sustainability initiatives, (b) higher education has a significant role in supporting sustainability, (c) institutionalization is the next challenge in implementing sustainability, (d) presidential leadership is essential to the institutionalization of sustainability, and (e) there is a lack of research on presidents' role in institutionalizing sustainability in community colleges.

Need to Support Sustainability Initiatives

Sustainability initiatives reflect a cultural transformation of concern for the 21st century. Sustainability is an issue that is being addressed on a weekly basis in both scientific journals and in the popular press. There is a growing consensus among scientists that there is both a practical and scholarly need to support

sustainability initiatives for the health of the planet. “The need to seek a worldview compatible with sustainability” is evident (Reitan, 2005, p. 80).

International organizations are taking a firm stand concerning the need to support sustainability initiatives. The United Nations Millennium Ecosystem Assessment stated, “Human well-being and progress toward sustainable development are vitally dependent upon improving the management of Earth’s ecosystems to ensure their conservation and sustainable use” (Millennium Ecosystem Assessment, 2005b, p. 2).

The threat of widespread environmental degradation is matched only by the tremendous opportunity for beneficial action.

The evolving impact of environmentalism on our politics and culture has made an especially persuasive case, for those who will listen, that we are beginning a new century not only with the technological ability to destroy the cultural and biological conditions for the survival of human life on earth but also with the capability to alter the genetic foundations of human life and thus consciously shape human evolution in materially and spiritually beneficial ways. (Rosenbaum, 2005, p. 363)

There is a tremendous need to support sustainability initiatives for the health of the planet. This is supported by a growing consensus among journalists, scientists, and international organizations.

Higher Education Has Significant Role in Supporting Sustainability

There is widespread belief that institutions of higher education must play a significant role in promoting sustainability in society. “The concepts and themes of sustainability should be integrated into all levels of education” (Martens, 2006, p. 40). Community colleges are in a particularly unique position to support sustainability education, and thus the sustainability of the environment, since a large percentage of the population in the United States attends community colleges. According to a 2006 special community colleges edition of *The Chronicle of Higher Education*, community colleges educate 45% of undergraduates nationwide (Ashburn, 2006).

The students of today will become the leaders of tomorrow. It is imperative that institutions of higher education educate students about the environmental needs of the world.

It is now beyond any doubt that higher education institutions around the world are beginning to recognize that they have a unique responsibility towards the goal of sustainability. Universities are an integral part of the global economy and since they prepare most of the professionals who are occupying key positions today and who will do so in the future, they are uniquely positioned to influence the direction we choose to take as a society. (Leal Filho, 2002, p. 2)

Institutions of higher education have a significant role in supporting sustainability. The students of today, particularly in community colleges, need to understand the environmental needs of the world, for they will be the leaders of tomorrow.

Institutionalization as Next Challenge in Supporting Sustainability

One significant challenge in advancing the sustainability agenda is moving from sustainability initiatives and isolated activities on a college campus to the institutionalization of sustainability across all aspects of a college.

Institutionalization of sustainability on a college campus allows sustainability issues to be incorporated in all aspects of a college campus, including purchasing, landscaping, transportation, energy, dining services, solid waste management, and curriculum development.

Of particular importance to the future of community colleges is the integration of sustainability concepts into the mission of community colleges. The understanding and application of sustainability concepts to the community college environment has critical implications for the future in terms of providing a foundation for effective leadership within community colleges. The three legs of sustainability-- ecological integrity, social equity, and economic prosperity--can all assist community colleges in surviving and thriving within a rapidly changing world. "Community colleges are in a crucial position to help people learn the skills we all need to help build democratic societies and a sustainable future" (Rowe, 2005, p. 52).

Institutionalization of sustainability across all aspects of a college is the next challenge in supporting a sustainability agenda. One foundational way to institutionalize sustainability on a college campus is to integrate sustainability concepts within the mission of the college. Other significant ways to integrate

sustainability concepts include purchasing, transportation, energy, dining services, and curriculum development.

Presidential Leadership and Institutionalization of Sustainability

The support and leadership of college presidents may be a significant aspect of successfully educating students about sustainability. Barlett and Chase (2006), in their seminal book *Sustainability on Campus: Stories and Strategies for Change*, emphasized that support from the top is critical for successful sustainability initiatives at institutions of higher education. “Committed administrators can make key changes in how universities accept the responsibility of helping us move to a more sustainable world” (Bartlett & Chase, 2004, p. 4).

Presidential leadership may be critical to the institutionalization of sustainability on a college campus. The president can unite other interested college community members who are striving for a sustainable campus.

Lack of Research on President’s Role in Institutionalizing Sustainability

While there is a significant, and growing, amount of scholarly research concerning sustainability in higher education, there appears to be virtually none concerning the role of community colleges. Aside from the chapter titled “Building Political Acceptance for Sustainability: Degree Requirements for All Graduates” by Rowe (2004) in the book *Sustainability on Campus: Stories and Strategies for Change*, there appears to be virtually nothing in the literature about sustainability issues at community colleges. Specifically, little is known about the role that a president plays in institutionalizing sustainability on a community college campus.

Summary

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. Three research questions formed the basis of this study: (a) What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard?, (b) what are the important influences to achieving institutionalization of sustainability in community colleges?, and (c) what role has the college president played in addressing influences to

institutionalizing sustainability at community colleges that are exemplary in this respect? The role that a college president plays in institutionalizing sustainability on a community college campus has both practical and scholarly importance to society. Understanding the role that college presidents play in community colleges that are exemplary in institutionalizing sustainability is significant because: (a) There is a need to support sustainability initiatives, (b) higher education has a significant role in supporting sustainability, (c) institutionalization is the next challenge in supporting sustainability, (d) presidential leadership is essential to the institutionalization of sustainability, and (e) there is a lack of research on presidents' role in institutionalizing sustainability in community colleges.

CHAPTER 2: REVIEW OF LITERATURE

The purpose of the literature review was to gather and evaluate the most current academic research relevant to the topic of the role that a college president plays in institutionalizing sustainability on a community college campus. The central questions guiding the literature review were: What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard? What are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges? What role has the college president played in addressing barriers and mobilizing facilitators to institutionalizing sustainability at community colleges that are exemplary in this respect? Implications were drawn for the design of the study from the literature review.

Approach to Review of Literature

The initial literature review was accomplished by utilizing the Oregon State University (OSU) online library for literature pertaining to sustainability in higher education. The primary source of data was the OSU Libraries Research Databases, including the full text education search function. Electronic Journals Service (EJS) and Education Resources Information Center (ERIC), Cambridge version, were used as the primary search tools. The primary search strategy included full text studies found in a variety of categories of education and sustainability literature and journals that were peer reviewed. Higher relevance was placed on more recent studies with particular emphasis on works written since 2000. The rationale for this emphasis was that sustainability in higher education was a growing field of interest, with a noticeable increase in publications concerning sustainability beginning in 2000, particularly with the inaugural issue of the *International Journal of Sustainability in Higher Education*. Given this recent evolving knowledge base, there was a growing body of research during that time span. The following key words and phrases, both singly and in combination, were used: sustainability, sustainable development, higher education sustainability, community college sustainability, institutionalization, college president, community college president (both singular and plural), organizational development, and ecological literacy.

Relevant articles, books, and web sites were identified from this search. As I became familiar with the literature concerning sustainability and sustainability in higher education, I narrowed my search to the role of the presidency in institutionalizing sustainability on a college campus. Because of this narrowing focus, I used more secondary sources on the broad topic of sustainability, but relied more on primary sources as the review narrowed to the topic of sustainability in two-year institutions and the role of the president in these institutions.

In addition, I also used the OSU Libraries Research Databases for dissertation abstracts that were similar or related to my research focus. Using the dissertations that I obtained from the search techniques above, I carefully reviewed references to obtain additional pertinent literature. Similarly, I also reviewed the references in the literature I gathered in order to obtain additional pertinent literature.

Organization of the Review of Literature

The literature review is divided into three sections: (a) sustainability, (b) sustainability in higher education with specific attention to the community college, and (c) the supporting role of the president in institutionalizing sustainability at community college. These three sections reflect a gradual narrowing to the focus of the dissertation. The sustainability section provides a broad review of literature concerning sustainability; the sustainability in higher education section provides a slightly narrower focus of the literature concerning sustainability in higher education, including sustainability activities, initiatives, and the institutionalization of sustainability across all aspects of the college; and last, the community college presidency section provides a review of literature concerning community college presidency and the role it plays in addressing barriers and mobilizing facilitators to institutionalizing sustainability at community colleges. This community college presidency section also reviews the issue of institutionalization. The introduction of each section of the review of literature includes an explanation and rationale for how that section contributes to the study's focus and design.

While the amount of literature concerning sustainability in general and sustainability in higher education has grown in recent years, it appears that little or

no research has been done as it pertains to the community college setting. In light of this lack of literature concerning sustainability in the community college setting, there appears to be tremendous opportunity to gain a greater understanding of the success of sustainability programs at both two-year schools and four-year schools and to attempt to translate this into applicable meaning for other two-year schools. In addition, there appears to be a growing interest in initiatives concerning sustainability in institutions of higher education.

Sustainability

In order to study and better understand the role that a college president plays in institutionalizing sustainability on a community college campus, the concept of sustainability will first be probed for its various meanings and connotations. This section provides a review of the literature concerning the meaning of sustainability. It begins with a brief history of environmentalism, followed by a history of the use of the term sustainability. This is followed by an overview of the definitions of sustainability, since it is a word that has multiple definitions and uses. This section will conclude with the definition of sustainability that was used in this study and the reasons for selection of this definition. The purpose of this section is to provide a review of the literature concerning the meaning of sustainability. Implications will be drawn for the design of this study.

History of Sustainability Movement

The purpose of this section is to provide a review of the literature concerning the history of the sustainability movement. This is intended to help inform the design of the study concerning the role that a college president plays in institutionalizing sustainability on a community college campus. This section is organized with an explanation of the value of a historical perspective for an interpretive social science study, followed by a brief history of both environmentalism and the term sustainability in the environmental literature.

The study was based on an interpretive philosophical approach, which supports the importance of a historical understanding. A key concept of interpretive social science concerns the belief that social reality is constructed by those who live it (Creswell, 2005; Van Manen, 1990). Social reality always has a

history upon which it has been built. “Any social activity...has a history, is part of a tradition that transcends the individuals currently engaged in the activity” (Gee, Michaels, & O’Connor, 1992, p. 237). Therefore, for a study based on sustainability, there is an inherent value in understanding the history of sustainability. All three of the research questions concern sustainability, so therefore a good foundational understanding of the history of sustainability will provide solid footing for an interpretive study concerning sustainability.

To understand the usage of the term sustainability, it is beneficial to review the history of the term in environmental literature. Edwards (2005) described environmentalism as the precursor to modern sustainability. He viewed sustainability as both a movement and a revolution, because of the rapidly growing interest in the topic. “At the foundation of modern sustainability lies the human connection with nature” (Edwards, 2005, p. 12). The history of both environmentalism and of the term sustainability in the environmental literature provides a foundation for the usage of the term sustainability today.

In western literature concerning environmentalism, the transcendentalist movement in New England in the 1800s was the beginning of an understanding of the connection between humans and nature and the view of nature as a teacher. The most influential transcendentalist was Henry David Thoreau, who believed that the natural world symbolized and reflected spirituality and truth (Nash, 1976). In 1854, Thoreau wrote his most famous book *Walden* which included the statement, “I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived” (Thoreau, 1854/1965, p. 69).

Following the transcendentalists in the development of western environmentalism was a series of writers, naturalists, and conservationists in the 20th century. One of the earliest and most influential was John Muir, the founder and first president of the Sierra Club, who helped bring attention to the importance of wilderness preservation. “Everybody needs beauty as well as bread, places to play in and pray in, where Nature may heal and cheer and give strength to the body and soul alike” (Muir, 1912, p. 255). Influential authors such as Muir laid the

foundation for the environmental movement, which provides the roots for sustainability that is now being implemented at colleges around the world.

Building on Muir's work, several key publications during the twentieth century brought sustainable concepts to the attention of the public, although the term sustainability had yet to be coined. In 1949, naturalist Aldo Leopold published *A Sand County Almanac*, a collection of essays concerning conservation and land ethic, and now considered an environmental classic. Leopold believed that conservation required a respect for the environment, and he connected the health of an ecosystem with humans' survival. In his seminal work *A Sand County Almanac* (1949/1970) he wrote:

A land, ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve the capacity. (p. 258)

Leopold continued with his most famous statement, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (p. 262). Leopold provided one of the first connections between the environment and one's livelihood, a precursor to the connection between ecology and economy that is a crux of modern sustainability.

Another key environmental publication was the 1962 classic *Silent Spring*, written by Rachel Carson, which concerned the problems caused by the pesticide Dichloro-Diphenyl-Trichloroethane (DDT). This is arguably the most famous environmental publication ever, and is "considered by many to be the catalyst for the environmental movement in many industrialized nations" (Kirk, 2003, p. 10). The first annual Earth Day celebration occurred in 1970, and the environmental movement has been gaining speed ever since.

While the origins of environmentalism in the United States focused on resource conservation, the origins of sustainability in Europe had a greater concern for the economic sphere (Johnson, 1995). A significant event in the international environmental arena occurred in 1972 when the United Nations held the Conference on the Human Environment in Stockholm, Sweden. The objective was to find a connection between environmental concerns and economic issues such as

employment, development, and growth. It was the first time the term “sustainable development” was used within the international environmental community (Wright, 2002b).

The Stockholm conference marked the first step towards connections that are commonly used today in the literature concerning sustainability. “This global forum began the attempt to find positive links between environmental concerns and economic issues such as development, growth and employment” (Edwards, 2000, p. 15). One significant outcome of the Stockholm conference was that numerous environmental agencies were established, most notably the United Nations Environment Programme, whose mission was to “provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and people to improve their quality of life without compromising that of future generations” (United Nations Environment Programme).

It is important to emphasize that the historical roots of environmentalism in the first world differ from the historical roots of sustainable development in the third world (Judy Walton, personal communication, July 20, 2009).

Environmentalism in the west was developed over time with an emphasis on environmental protection and resource conservation. However, in the third world, “sustainable development was more than resource conservation, it was a vision of humankind’s social and economic future toward which government, business, and civil society could all contribute” (Adelson, Engell, Ranalli, & Van Anglen, 2008, p. 138).

In summary, this brief history provides context for understanding the development and usage of the word sustainability. The development of environmental concepts provided the foundation for modern sustainability. The transcendentalist Thoreau (1854) emphasized the connection between the natural world and truth, laying an early foundation for environmentalism. Influential authors Muir (1912) emphasized the importance of wilderness, while Leopold (1949) provided a connection between ecology and economy, providing a precursor of a key concept of sustainability. The 1972 United Nations Conference on the Human Environment provided the first use of the term sustainable development in

an environmental capacity. Sustainable development emphasized a relationship between environmental protection and economic development. This brief history of the environmental movement is intended to provide a framework to understand where the various definitions and meanings of sustainability originated and is foundational to the study purpose and questions as well as the context for the study's design. Since all three of the research questions concern sustainability, a good foundational understanding of the history of sustainability provides solid footing for the interpretive study concerning sustainability. An interpretive philosophical approach is ultimately a search for understanding, and a search for understanding of the present requires a foundational understanding of the past.

Sustainability Definitions

The term sustainability has multiple meanings, and is also being used more and more by both the media and in the literature. As an example of the broad usage of the term, a Google search of the word "sustainability" brought up 38,700,700 web sites. The intention of this section is to provide clarification concerning the definitions, meanings, and usages that are common in the context of an environmental emphasis in higher education. This section is organized to explain the original usage of sustainability, and provides a review of commonly used definitions.

The root word sustain dates from the thirteenth-century French word *sustenir* and the Latin word *sustinere*, meaning to support something from below (Newton & Freyfogle, 2005). The word sustainability originally described "a characteristic of relations (state or processes) that can be maintained for a very long time or indefinitely" (Judes, 2000, p. 100).

The term sustainable development was first used in an international environmental context in the widely circulated 1987 report titled *Our Common Future*. This report, written by the United Nation's World Commission on Environment and Development, attempted to reconcile economic development, social welfare, and global environmental protection. The World Commission on Environment and Development was originally asked to formulate "a global agenda for change" (World Commission on Environment and Development, 1987, p. ix).

The commission is more commonly known as the Brundtland Commission, named for the chair, former Norwegian prime minister Gro Harlem Brundtland. The report defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (p. 43).

The Brundtland report was the first document that tied together environmental concerns with economic and social justice concerns. For example, it stated, “Hence, our inability to promote the common interest in sustainable development is often a product of the relative neglect of economic and social justice within and amongst nations” (WCED, 1987, p. 49). Frankel (1998) pointed out that:

...once we get beyond the basic Brundtland Commission definition, sustainable development is most often thought of in terms of a triad, or the “Three E’s:” Economics, Environment, and Equity. What sustainable development requires, according to this view, is the harmonious balancing of these three elements – growth is to be pursued in a manner consistent with long-term environmental protection and social fairness. (p. 22)

While the basic concept of sustainability can be interpreted in a variety of ways, “most experts agree that a sustainable society must balance social equity, economic prosperity, and environmental integrity” (Krizek & Power, 1996, p. 7). These qualities are often illustrated with three interlocking circles representing the balance and connection (see Figure 1). This perspective maintains a focus on environmental quality while showing the strong relationship between ecological issues and social-economic status and justice. These relationships also support the magnitude of the importance of these issues, and how environmental issues are ultimately related to everyone in society.

As popular as this definition is within the environmental community, there are a number of criticisms of this definition (Hawken, 1993; Leal Filho, 2000). Jickling (1999) argued that the various interpretations of sustainability and sustainable development rest on highly dubious assumptions. For example, the Brundtland Commission stated that an integral aspect of sustainable development is the development of poorer, less developed countries to developed nations

standards. While this is a noble objective, it is impossible for the earth's resources to sustain such an objective (Wackernagel & Rees, 1996).

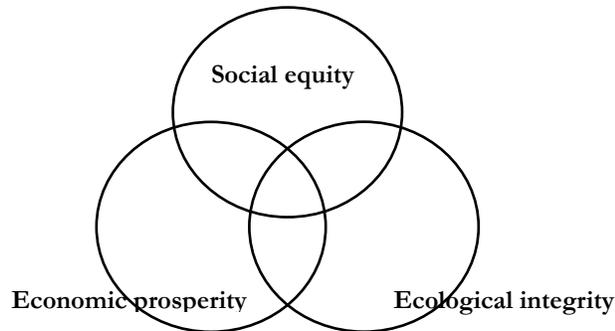


Figure 1. Sustainability components.

Jickling (2000) stressed that the term sustainability should be considered a stepping stone in the on-going evolution of environmental thought. He emphasized that there are significant limitations and problems associated with emphasizing sustainability as an organizing concept. He believed that the term is too generic and tends to flatten our contradictions. He used the example of a mining conflict where environmentalists and mine supporters were involved in a publicity campaign and both camps were using the word sustainability on behalf of their own agenda.

Newton and Freyfogle (2005) argued that the conservation movement should discard the term sustainability because it has numerous grave defects as a planning goal. Their primary criticism was that the term sustainability lacks a clear, solid meaning. They believe that the term sustainable primarily means “considering the long term” (p. 24), but that it is never clear who is sustaining what. They argued that conservation needs to be primarily about cultural change, and that the term land health would be better suited than the term sustainability.

In response to Newton and Freyfogle, Ehrenfeld (2005) agreed that sustainability has many meanings, but argued that this is an advantageous trait of

the term. He believed that the possibility of multiple meanings and interpretations allows people to create very different approaches to conservation issues within the broad context of sustainability.

One modified definition of sustainability is supported by Paul Hawken (1993) in his respected book *The Ecology of Commerce: A Declaration of Sustainability*. He said:

The word “sustainability” can be defined in terms of carrying capacity of the ecosystem, and described with input-output models of energy and resource consumption. Sustainability is an economic state where the demands placed upon the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations. (p. 139)

Another, simpler, definition of sustainability was by Leal Filho (2000) who described it simply as “the processes and approaches that may ultimately lead to the long-term and environmentally-sound use of natural resources” (p. 11). In contrast, he defined sustainable development as:

... a long-term process via which countries may pursue economic growth and the improvement of the life quality of their citizens. This may be achieved via well-drafted policies and action plans, in a way that takes into consideration issues such as justice, equity and ethics, as an intrinsic part of environmental considerations. (p. 11)

He emphasized that sustainability goes much further than traditional approaches to environmental protection by emphasizing both traditional environmental components but also the “political, economic and social matters that integrate the environmental equation” (p. 12).

In summary, this section provides clarification concerning the definitions, meanings, and usages of the term sustainability that are common in the context of an environmental emphasis in higher education. The term sustainable development was first used in an international environmental context in the widely circulated 1987 report titled *Our Common Future*. The report, commonly referred to as the Brundtland report, defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). The Brundtland report was the first

document that tied together environmental concerns with economic and social justice concerns. “Most experts agree that a sustainable society must balance social equity, economic prosperity, and environmental integrity” (Krizek & Power, 1996, p. 7). This perspective maintains a focus on environmental quality while showing the strong relationship between ecological issues and social-economic status and justice. There has been widespread debate and disagreement in the literature concerning the appropriate definition of the term sustainability.

Since all of the research questions pertain to sustainability, the implications for the study of this section had to do with understanding the various definitions of sustainability that were commonly used. In terms of the second research question, one of the barriers to achieving institutionalization of sustainability may be related to a confusion concerning the definition of sustainability. An understanding of the definitions of sustainability also impacted the design, as a successful case study requires a good working knowledge of the definitions of the key terms, such as sustainability.

Selected Sustainability Definition

To conduct a study that emphasizes sustainability, a term that has many definitions, it is important to select a specific definition and to provide rationale for the selection of the definition. This section declares the definition that was used in this study, and provides the rationale for the selection of the definition.

The definition of sustainability that I used in this research project is one that incorporates the balancing of the three components of social equity, economic prosperity, and ecological integrity. This definition is rooted in the Brundtland report (WCED, 1987), which was the first to tie together environmental concerns with economic and social justice concerns. The reason for the selection of this definition was that it was the most prominent definition currently in use (Edwards, 2005; Krizek & Power, 1996; Sterling, 2004). Edwards (2005) described “the key to contemporary sustainability – the importance of evaluating any proposed initiative with reference to the interaction of three fundamental criteria: ecology/environment, economy/employment and equity/equality, known today as the Three Es” (p. 17).

This section provided a review of the literature concerning the meaning of sustainability. It began with a brief history of environmentalism, which emphasized that the development of environmental concepts provided the foundation for modern sustainability. The transcendentalist Thoreau (1854) emphasized the connection between the natural world and truth, laying an early foundation for environmentalism. This foundational aspect of the relationship of truth to environmentalism, and thus to sustainability, has interesting implications for the interpretive philosophic approach of this study, with its emphasis on an understanding of truth. For example, the role that presidents play in institutionalizing sustainability on a college campus may be related to their conceptualization of the relationship of sustainability and truth in the world. In other words, if the president believes in the value of both sustainability and truth, and perceives the relationship between sustainability and truth, he or she may be more inclined to support sustainability initiatives on his/her campus.

Influential authors Muir (1912) emphasized the importance of wilderness, which is foundational to the ecological aspect of sustainability. Leopold (1949) established a connection between ecology and economy, providing a precursor of a key concept of sustainability. This early connection between ecology and economy had implications for the study, because the chosen definition of sustainability for the study emphasized the connections between the triad of ecology, economy, and equity.

The review of the history of environmentalism was followed by a history of the use of the term sustainability, which included an overview of the definitions of sustainability, since it is a word that has multiple definitions and uses. It emphasized the use of the term sustainable development by the Brundtland Commission, with the common definition of sustainable development, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). It was established that most sustainability definitions incorporate social equality, economic prosperity, and environmental integrity. The section concluded with the definition of sustainability that was used in the study, which is one that

incorporates the balancing of the three components of social equity, economic prosperity, and ecological integrity. The chosen definition had significant implications for the study, as it provided an important foundation for understanding the role that a college president plays in institutionalizing sustainability on a community college campus.

The review of the widespread debate and disagreement in the literature concerning the appropriate definition of the term sustainability also had implications for the study. The ongoing debate concerning the meaning of the term sustainability could have been a complicating factor in the successful completion of the study. For example, if selected presidents and colleges were not in agreement about the definition of sustainability, then a case study of several institutions could have ended up comparing institutions with different aims as regards sustainability, instead of programs with a similar concept of the meaning of sustainability. In addition, it could also have been one of the barriers addressed in the second research question, what are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges? In other words, multiple people operating within a college with multiple definitions, or understandings, of sustainability, may impair successful action concerning the institutionalization of sustainability.

Sustainability in Higher Education

In order to study and better understand the role that a college president plays in institutionalizing sustainability on a community college campus, the concept of sustainability in the specific context of higher education will be probed for its various meanings and connotations. The purpose of this section is to provide a review of the literature concerning sustainability in higher education. This section begins with a brief history of sustainability in higher education, followed by the major areas that are addressed in the related literature. These major areas include literature concerning calls for action for institutions to take responsibility for sustainability initiatives, literature concerning how to implement sustainability within higher education, and literature concerning the barriers to promoting

sustainability within higher education. The section concludes with a look at international initiatives concerning sustainability in higher education.

History of Sustainability in Higher Education

In order to study sustainability in higher education, it is important to first understand the history of sustainability within the specific context of higher education. The purpose of this section is to provide a review of the history of sustainability in higher education. Understanding the history of sustainability in higher education will in turn help to understand the role that a college president plays in institutionalizing sustainability on a college campus. As established earlier in the literature review, since the study was based on an interpretive philosophical approach, it supported the importance of a historical understanding of sustainability in higher education. All three of the research questions concern sustainability, so therefore a good foundational understanding of the history of sustainability in higher education provided solid footing for an interpretive study concerning sustainability.

To understand the history of sustainability in higher education a useful place to begin is with a look at the history of American higher education and the development of the campus concept. The original colonial colleges in the United States were modeled after the British colleges of Oxford and Cambridge. “Harvard followed English college precedents as closely and faithfully as she could; and Harvard, in turn, became the great prototype for all the later colleges of English America” (Brubaker & Rudy, 1976, p. 1).

The original English colleges were designed to be sustainable communities. “When the Cambridge colleges were built, they planted forests with each college so they would have a supply of materials to repair that college” (Carlson, 2007, p. B18). The original English college campus design was square or rectangular in shape, designed to sit within a city block, and had a central court in the middle (Campos, 2001-2002, p. 7). The idea of the original campus was to provide a central area where the faculty could exert their influence and control over the students. This origin of sustainable communities on campuses of higher education can be used as an argument in support of sustainability on a college campus, which

ties into the facilitator role in research question number two: What are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges.

The American campus varied from the English models due to the vastness of the land that was available in the United States. For this reason, the American campus developed into a utopian campus, situated away from the turmoil of the city. “One of the goals of the North American model is an idyllic and self-sufficient community” (Campos, p. 8). One difference from the European goal was that, instead of cloistered buildings, scattered buildings were favored, and were usually open to a green environment.

One of the most significant early colleges was the University of Virginia, established in 1819 by Thomas Jefferson, the third president of the United States. He designed the campus, near his home of Monticello, with his own unique version of what has become known as the academical village. “The germinal concept—the juxtaposition of pavilion and dormitories, of professor and pupils, the linking of learning and domesticity—this idea or cluster of ideas was clearly his own” (Malone, 1981, p. 258).

Jefferson’s ideas of what a campus should be was the foundation of the concept of colleges and universities as communities in themselves. The unique nature of his vision of a campus “sums up the distinctive physical qualities of the American college, but also its integrity as a self-contained community and its architectural expression of educational and social ideals” (Turner, 1984, p. 4). Community is an important aspect of sustainability, for it provides the connection between social equity, ecological integrity, and economic prosperity (Valentin & Spangenberg, 2000).

Another early application of sustainable practices to campus planning occurred in 1866 when Frederick Law Olmstead, the renowned designer of New York City’s Central Park, was planning a new agricultural school at the University of Berkeley in California (now the University of California at Berkeley). With motives that were as much ideological as practical, he stated:

You must embrace in your ground-plan arrangements for something more than oral instruction and practical demonstration in the science of agriculture...you must include arrangements designed to favorably affect the habits and inclinations of your students, and to qualify them for a wise and beneficent exercise of the rights and duties of citizens and of householders. (Turner, 1984, p. 142)

Among the first in modern times to address sustainability issues in higher education, Smith published *Campus Ecology* in 1993. Designed as an introduction to the need for sustainability, it was an outgrowth of her master's thesis in urban planning at University of California at Los Angeles. As she explained in her introduction, "Your campus is more than just a place to learn, teach, and work. It is also a microcosm of environmental problems facing the larger society" (Smith, 1993, p. xii). The importance of a community connection is supported by more recent research literature. Wright (2002a) noted that there have been an increasing number of national and international sustainability declarations which are relevant to higher education, and that many institutions attempt to become more sustainable by signing these declarations. "All of the declarations and most of the policies discuss the need for universities to situate themselves within the larger community in which they reside" (Wright, 2002a, p. 216). The community connection of the community college was an important aspect to consider when the case study research was conducted for the participating institutions in my study.

Since the publication of Smith's book, numerous institutions of higher education have pursued sustainable practices. Julian Keniry's publication *Ecodemia: Campus Environmental Stewardship at the Turn of the 21st Century* documented numerous colleges' activities in sustainable practices related to purchasing, landscaping, transportation, energy, dining services, and solid waste management. "If there is one lasting lesson these programs impart, it is that making the transition to a sustainable future requires dedication, patience, courage, and persistence" (Keniry, 1995, p. 3). The sustainable practices that Keniry listed above, and the commitment of dedication, patience, courage, and persistence, had to be considered in the case studies that were conducted for my research.

In summary, during the last ten years there has been an exponential growth in literature concerning sustainability in higher education, which will be covered in the remainder of the literature review. The last section reviewed the history of sustainability in higher education up to approximately 10 years ago. The original colonial colleges in the United States were modeled after the British colleges of Oxford and Cambridge. These colleges were originally designed as sustainable communities. The origin of sustainable communities on campuses of higher education can be used as an argument in support of sustainability on a college campus, which ties into the facilitator role in research question number two: What are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges. Thomas Jefferson provided the foundation for American colleges to be communities unto themselves. Frederick Law Olmstead provided an early application of sustainable practices to college campuses, particularly concerning campus design. Smith (1993) provided the earliest literature specifically addressing sustainability on college campuses, and emphasized the importance of the community connection. The community connection of the community college was an important aspect to consider when conducting the case study research for the institutions that participated in my study. Keniry (1995) listed the sustainable practices related to purchasing, landscaping, transportation, energy, dining services, and solid waste management, along with the importance of the commitment of dedication, patience, courage, and persistence, all of which were considered in the case studies that were conducted for my research. This review of the history of sustainability in higher education provided a foundation for understanding the more recent publications concerning sustainability in higher education, which are covered in the remainder of this section on sustainability in higher education.

Calls for Action

A significant amount of literature concerning sustainability in higher education emphasizes the need for institutions of higher education to advance sustainability initiatives or provides a call for action for institutions to take responsibility for sustainability initiatives. The purpose of this section is to provide

a review of the literature concerning calls for action for institutions of higher education to initiate sustainability activities. The section begins with several examples of calls for action that have been made in the literature, followed by a detailed review of what I consider to be the seminal book to date concerning the topic of sustainability in higher education, and concludes with an article which introduces the concept of an ecophilosophic worldview.

In recent years, more and more professionals have been calling on institutions of higher education to become involved in sustainability initiatives (Barlett & Chase, 2004; Fien, 2002; Rowe, 2002). Some requests are very specific in terms of the type of action that is expected. For example, Orr (2000) stated, “I propose that every school, college, and university stand up and be counted on the issue of climatic change by beginning now to develop plans to reduce and eventually eliminate or offset the emission of heat-trapping gases by the year 2020” (p. 340).

There is a growing demand for institutions of higher education to be transformed in order to teach environmental concepts to students. Worster, the preeminent environmental historian, stated, “I think higher education should be radically transformed to teach environmental everything. It is the issue of the twenty-first century, everywhere you look” (personal communication, April 18, 2007).

Editors Barlett and Chase (2004), in their book *Sustainability on Campus: Stories and Strategies for Change*, asserted that institutions of higher education have “the potential to be a critical leverage for point of change” (p. 5) concerning sustainability initiatives both within higher education and for society as a whole. *Sustainability on Campus: Stories and Strategies for Change* is, in my opinion, the seminal work to date on the topic of sustainability in higher education. It contains 16 essays by leaders in the field. The editors provided a concise introduction and overview concerning the topic of sustainability in higher education, followed by a well-organized series of chapters concerning all aspects of the topic written by leaders in the field. The author’s purpose was to demonstrate that “higher education has the potential to be a critical leverage point for change” (p. 5)

concerning sustainability throughout society. The editors provided both an introduction and a detailed analysis of topics critical to sustainability in higher education for any member of higher education with an interest in the topic. The research and analysis methods vary, but seem to represent quality research methods across the board.

Barlett and Chase emphasized the need for a college to be connected to the local community. “Sustainability...requires a detailed knowledge of local areas and local actors, and environmental literacy requires knowledge of the campus in the context of its local ecosystem” (p. 15). This ties in to the third research question: What role has the college president played in addressing barriers and mobilizing facilitators to institutionalizing sustainability at community colleges that are exemplary in this respect? One of the facilitators in supporting sustainability for the college president may be a local community leader or leaders.

Fien (2002), in his article “Advancing Sustainability in Higher Education: Issues and Opportunities for Research,” argued that institutions of higher education have a responsibility to advance sustainability initiatives and that all research paradigms can support institutions in pursuing this goal. The author diagramed four research paradigms, positivist, interpretive, critical, and post-structural, and examined how each of them would be utilized to address two key sustainability initiatives, catering and applying Earth Charter principles into an engineering degree. The Earth Charter is a “declaration of fundamental principles for building a just, sustainable, and peaceful global society for the 21st century” (Earth Charter Initiative). The author believed that most studies concerning sustainability in higher education lacked rigorous research designs. Therefore, he wanted to challenge researchers to ground their research in social or organizational theory in order to improve the quality of research in sustainability studies. The author’s intended audience was clearly academics and university administrators who lack a background in educational research and who would like to use research to guide sustainability initiatives. Fien provided a broad assessment of research paradigms that represents a clear and concise methodology.

Fien's thesis was that research concerning sustainability needs to be firmly grounded in social theory directly and strongly supports my research study. The purpose of the research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. My research project was grounded in the interpretive philosophic approach. Fien also addressed the importance of making research personal. This supported my interest, and efforts, to show my voice in my writing and research (which is further addressed in the personal disclosure in Chapter 3).

Lastly, Fien addressed the issue of whether the various philosophic paradigms are equally worthwhile. He concluded that an ecophilosophic worldview, which considers humans to be a part of nature rather than totally separate from it, is most appropriate, as it "stands in opposition to dominant Western worldview and its environmentally destructive outcomes" (Fien, 2002, p. 251). Fien's emphasis of an ecophilosophic philosophy was important to understand, as it is essentially an offshoot of the interpretive philosophic approach of my study.

In summary, this section provided a review of the literature concerning calls for action for institutions of higher education to initiate sustainability activities. There is growing support by professionals for institutions of higher education to become involved in sustainability initiatives (Barlett & Chase, 2004; Fien, 2002; Rowe, 2002). Barlett and Chase (2004) asserted that institutions of higher education have "the potential to be a critical leverage for point of change" (p. 5) concerning sustainability initiatives both within higher education and for society as a whole. The editors also emphasized the importance of working with the local community, which supports the third research question.

Some authors, such as Fien (2002), argued that institutions of higher education have a responsibility to advance sustainability initiatives and that all research paradigms can support institutions in pursuing this goal. Fien's thesis was that research concerning sustainability needs to be firmly grounded in social theory supported the grounding of my research in the interpretive philosophic approach.

He emphasized the importance of an ecophilosophic worldview, an offshoot of the interpretive philosophic approach of my study, which considers humans to be a part of nature rather than totally separate from it.

Implementation of Sustainability

A significant amount of literature concerning sustainability in higher education emphasizes techniques and strategies for the implementation of sustainability into institutions of higher education. The purpose of this section is to provide a review of the literature concerning techniques and strategies for the implementation of sustainability into institutions of higher education. This review will inform the purpose of the research, which was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus.

Institutions of higher education are microcosms of the communities within which they reside. As such, they provide an opportunity to make sustainability an integral aspect of all dimensions of the institution. Cortese, president and cofounder of Second Nature, a non-profit organization focused on sustainability issues in higher education, created a model for sustainability in campus planning (see Figure 2). Represented by a series of four interlocking rings inside a larger ring, the illustration represents higher education modeling sustainability as a fully integrated system. The inner rings, representing curriculum, research, operations, and community, are interlocked to represent the assertion that all of these initiatives need to coexist and be given adequate attention if a college's commitment to sustainability is going to be campus wide, systematic, and ongoing (Cortese, 2003, p. 18).

Cortese's model is one way to understand the institutionalization of sustainability at a community college. The concept of institutionalization will be thoroughly explored in the next section of the literature review. However, it is important to note that Cortese's model is a helpful way to conceptualize sustainability at a college campus, and can be applied as an organizational construct to each of my three research questions.

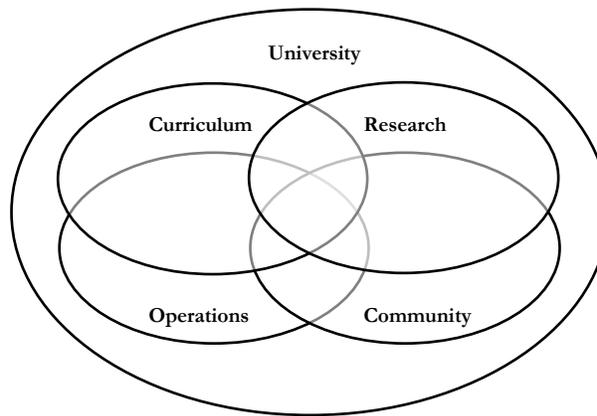


Figure 2. Campus planning model

Wright (2002a), in her article “Definitions and Frameworks for Environmental Sustainability in Higher Education,” reviewed definitions and frameworks of sustainability in higher education and identified emerging themes and priorities. The author examined a set of major national and international sustainability declarations and institutional policies and discussed how these declarations and policies affect the development of sustainability policies at various institutions of higher education. The author’s purpose was to establish a foundation and framework of environmental sustainability in higher education in order to influence environmental policy as a catalyst for change within institutions of higher education. Wright explained that some institutions have focused on national and international initiatives, while others have focused on their own campus. “While many institutions have focused attention on national and international sustainability declarations, some have chosen to take a micro approach to sustainability in higher education by creating institutional environmental sustainability policies that are meaningful for their particular situation” (p. 210). Regardless of whether there is an inward or outward approach, she outlined foundational themes that exist in universities’ approach to sustainability. “These themes include sustainable physical operations, sustainable academic research, environmental literacy, ethical

and moral responsibility, cooperation amongst universities and countries, the development of interdisciplinary curriculum, and partnerships with government, non-governmental organizations and industries” (p. 218). The author established an informative tone that was directed at university decision makers and researchers interested in environmental sustainability. Wright never clarified her methodology concerning how she identified the emerging themes. Therefore, her conclusions are a little suspect. Wright provided two valuable pieces of information that can be applied to all three of the research questions. One piece of valuable information concerns whether or not a college was tying in their sustainability efforts to a national or international initiative as a way to frame their efforts. The second piece of valuable information concerned the common themes that exist in college’s approach to sustainability.

Moore (2005b), in her article “Seven Recommendations for Creating Sustainability Education at the University Level: A Guide for Change Agents,” outlined a set of recommendations to assist universities with establishing sustainability education programs. At the University of British Columbia (UBC), the author conducted a series of workshops using a value focused thinking framework, and then conducted a series of interviews, all with the focus of creating recommendations for developing sustainability education programs at UBC. The author’s purpose was to provide details of a participatory workshop process in order to engage university staff, faculty, administrators, and students in a dialogue about sustainability education. She established a hopeful tone towards students, faculty, and staff who wish to adapt her findings and recommendations towards establishing sustainability education programs at their own institutions. Moore’s methodology was focused on interviews and workshop analysis, and seemed to represent standard research procedures. Moore’s idea of a participatory workshop that uses value-focused thinking in order to engage faculty and staff in a dialogue about sustainability education was one approach that I considered using in the design of the study as a way to initiate feedback from college employees. Due to constraints on time and the focus of my study, I decided not to use a participatory workshop during my research.

Rees (2003), in his article “Impeding Sustainability?: The Ecological Footprint of Higher Education,” argued that the use of ecological footprint analysis to estimate the sustainability status of universities is a useful way to develop local sustainability initiatives. Eco-footprinting is a way to assess how much productive land and water is required to support a given population, and can thus be used for tracking the unsustainable practices of a community (Wackernagel & Rees, 1996). Rees outlined his methodology clearly in his research paper. Eco-footprinting is one potentially very valuable tool for assessing the sustainability of a campus, and was important to understand during the interviews that were conducted during my study.

Shriberg (2002), in his dissertation “Sustainability in U.S. Higher Education: Organizational Factors Influencing Campus Environmental Performance and Leadership,” explored why some institutions of higher education are leaders in sustainability while others are not and developed a framework for developing significant organizational changes. The author analyzed five disparate bodies of literature related to management, leadership, and sustainability, formulated five research questions, analyzed survey data from 59 colleges and universities, undertook a comparative study of two institutions, and created a framework for future theory and practice. The purpose of the research was to develop strategies for creating campus sustainability initiatives in order to “bridge the divide between the sustainability-leadership potential of higher education and the slow pace of change...among colleges and universities” (p. 3). Shriberg was meticulous in his methodology every step of the way, and provided a valid, well-founded dissertation. His dissertation was noteworthy for its attempt to establish an overarching framework for sustainability in higher education in North America, but it did not succeed in providing the clear road map that it intended. In his findings, Shriberg offered a handful of positive conditions for success in campus sustainability efforts. These included “image-seeking behavior, collaborative decision making structures, collegial atmosphere and progressive/liberal political orientation” (p. 286). These facilitators can be applied directly to the second

research question: what are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges?

Pearce and Uhl (2003), in their article “Getting it Done: Effective Sustainable Policy Implementation at the University Level,” explained The Pennsylvania State University’s process of using an audit of sustainability indicators to develop and implement an ecological mission statement for the university. Pearce and Uhl offered more of a policy statement than a research study. Nonetheless, it provided a useful example of a university assessment concerning sustainability. The concept of a university assessment was applicable to my study in two ways. First, it applied to the first research question, what does it mean to have sustainability “institutionalized” at community colleges, as it provided a way of determining whether or not sustainability really has been institutionalized, or established, at a college. Second, the assessment was valuable for understanding the level of sustainability that was in place at a college.

In summary, this section provided a review of literature that emphasized techniques and strategies for the implementation of sustainability into institutions of higher education. It reviewed the Cortese model of sustainability as a fully integrated system. Cortese’s model had four rings, representing curriculum, research, operations, and community, which were interlocked to represent the assertion that all of these initiatives need to coexist and be given adequate attention if a college’s commitment to sustainability was going to be campus wide, systematic, and ongoing. This section reviewed Wright’s attempt to establish a foundation and framework of environmental sustainability in higher education in order to influence environmental policy as a catalyst for change within institutions of higher education. She outlined foundational themes that existed in universities’ approach to sustainability that provided implications for the design of my research study. This section also reviewed Moore’s focus recommendations for developing sustainability education programs at the University of British Columbia, which involved a series of a participatory workshops designed to engage university staff, faculty, administrators, and students in a dialogue about sustainability education. Rees (2003) argued that the use of ecological footprint analysis to estimate the

sustainability status of universities was a useful way to develop local sustainability initiatives. Shriberg offered strategies for creating campus sustainability initiatives. This review informed the purpose of the research, which was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus.

Barriers to Promoting Sustainability

The purpose of this section is to provide a review of literature concerning barriers to promoting sustainability for institutions of higher. This is particularly pertinent to this research study since one of the research questions is “what are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges?” This section will review two pieces of literature concerning barriers to sustainability at institutions of higher education.

Moore (2005a), in her article “Barriers and Pathways to Creating Sustainability Education Programs: Policy, Rhetoric and Reality,” outlined numerous barriers to creating sustainability education at University of British Columbia (UBC) and provided a set of recommendations for creating sustainability education at universities. The author developed these assertions through a process known as participatory action research, in which the intent is planned change, through 30 interviews, the vast majority of which were with faculty and administrators of UBC. The author’s purpose in conducting this research was to “create change and to create space for change—whether that is a change in perspectives at an individual level or larger changes in institutional action, programs and policy” (p. 539) for both individuals and for institutions. Moore formulated a personal tone with researchers and educators who wish to understand and establish how to implement sustainability education at institutions of higher education. Moore’s methods and methodology were clearly stated in her paper, and seemed to follow expected criteria for quality research. Moore outlined a number of barriers, which were useful in applying to the second research question of my study: what are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges. She found that

disciplinary boundaries were a significant barrier, partly because a department ultimately claims even interdisciplinary programs, such as sustainability. In addition, individual departments allocate funding resources, and their structures ultimately determine the outcomes. Another boundary that Moore discussed was the competitive environment of the college, between and within students, faculty, departments, and universities. She also discussed the boundaries inherent in unclear priorities and unclear decision-making structures.

Barlett and Chase (2004) outlined a number of barriers to change, which directly supports the second research question: What are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges? They emphasized that one significant barrier to any change in higher education is discipline boundaries. They emphasized that resources are generally linked to particular disciplines, and “the structure of the institution gives rise to a status quo that militates against interdisciplinary work” (p. 10). This is particularly problematic for the area of sustainability, which by definition is interdisciplinary in nature. These discipline boundaries also negatively affect access to resources, which are frequently confined to the individual discipline.

This section reviewed one piece of literature concerning barriers to sustainability at institutions of higher education. Moore (2005a) outlined numerous barriers to creating sustainability education at University of British Columbia and provided a set of recommendations for creating sustainability education at universities, which were useful in applying to the second research question of my study. She found that disciplinary boundaries were a significant barrier. In addition, individual departments allocate funding resources, and their structures ultimately determine the outcomes. Another boundary that Moore discussed was the competitive environment of the college. She also discussed the boundaries inherent in unclear priorities and unclear decision-making structures. Barlett and Chase (2004) outline a number of barriers to change, which relates to the second research questions. These barriers include discipline boundaries, which are often tied into resources, and which also negatively affect interdisciplinary work, such as that which is required in sustainability projects.

International Initiatives

The purpose of this section is to provide a review of one significant piece of literature concerning international initiatives to promoting sustainability for institutions of higher. The international perspective provides a helpful context for other sustainability research, much of which is focused on North America.

Haigh (2005), in his article “Greening the University Curriculum: Appraising an International Movement,” argued that the declaration of the “United Nations Decade of Education for Sustainable Development” provides a tremendous opportunity for institutions of higher education to green their curricula. The author provided a background of international movements concerning environmental sustainability, discussed the United Nations declaration, and outlined obstacles and opportunities for curriculum greening and implementation of environmental sustainability initiatives in higher education. The author’s purpose was to argue that the greening of the whole curriculum “must involve a major shift in the priorities and structures of higher education and its delivery” (p. 43). He was concerned and hopeful that decision makers and students would listen to his argument that sustainability initiatives in higher education will be ineffective without a paradigm shift in thinking and actions throughout higher education and society. Haigh never stated his methodology, and this brings into question the merit of his research. Nonetheless, his argument concerning the importance of greening the curriculum was compelling, and tied into the first research question of my study: what does it mean to have sustainability “institutionalized” at community colleges that are exemplary in this regard? The teaching of environmental literacy throughout the curriculum of a college may be a defining aspect of the institutionalization of sustainability at a college.

The purpose of this section on international initiatives was to provide a review of one significant piece of literature concerning international initiatives to promoting sustainability for institutions of higher. Haigh (2005) argued that the declaration of the “United Nations Decade of Education for Sustainable Development” provides a tremendous opportunity for institutions of higher education to green their curricula. He was concerned and hopeful that decision

makers and students would listen to his argument that sustainability initiatives in higher education will be ineffective without a paradigm shift in thinking and actions throughout higher education and society. This was pertinent to the focus of this study, as the greening of curriculum was a central aspect of first research question concerning the institutionalization of sustainability at a community college.

Summary

The summary of the section on sustainability in higher education is addressed for each research question, which includes some consideration for design. In addition to the breakdown by research questions, the summary ends with some additional considerations concerning the design of the study.

Cortese (2003) provided a model that described a helpful way to conceptualize sustainability at a college campus, and can be applied to organizing all three of the research questions. His model has a series of four interlocking rings inside a larger ring, where the inner rings representing curriculum, research, operations, and community, are interlocked to represent the assertion that all of these initiatives need to coexist and be given adequate attention if a college's commitment to sustainability is going to be campus wide, systematic, and ongoing.

The first research question was: what does it mean to have sustainability "institutionalized" at community colleges that are judged to be exemplary in this regard? Pearce and Uhl (2003) discussed the concept of a university assessment, which may be a way of determining whether or not sustainability really has been institutionalized, or established, at a college. The assessment was valuable for understanding the level of sustainability that was in place at a college. Haigh (2005) emphasized the importance of greening the curriculum. The teaching of environmental literacy throughout the curriculum of a college was investigated as a defining aspect of the institutionalization of sustainability at a college.

The second research question was: what are the important barriers and facilitators to achieving institutionalization of sustainability in community colleges? One facilitator could be the origin of sustainable communities on campuses of higher education, since it could be used as an argument in support of

sustainability on a college campus. Shriberg (2002) offered a handful of positive conditions for success in campus sustainability efforts. These included “image-seeking behavior, collaborative decision making structures, collegial atmosphere and progressive/liberal political orientation” (p. 286).

Barlett and Chase (2004) outlined a number of barriers to change. They emphasized that one significant barrier to any change in higher education was discipline boundaries. They emphasized that resources were generally linked to particular disciplines, and “the structure of the institution gives rise to a status quo that militates against interdisciplinary work” (p. 10). This is particularly problematic for the area of sustainability, which by definition is interdisciplinary in nature. These discipline boundaries also negatively affect access to resources, which are frequently confined to the individual discipline.

Moore (2005a) found that disciplinary boundaries were a significant barrier, partly because a department ultimately claims even interdisciplinary programs, such as sustainability. In addition, individual departments allocate funding resources, and their structures ultimately determine the outcomes. Another boundary that Moore discussed was the competitive environment of the college, between and within students, faculty, departments, and universities. She also described the boundaries inherent in unclear priorities and decision-making structures.

The third research question was: What role has the college president played in addressing barriers and mobilizing facilitators to institutionalizing sustainability at community colleges that are exemplary in this respect? Barlett and Chase (2004) emphasized the need for a college to be connected to the local community. “Sustainability...requires a detailed knowledge of local areas and local actors, and environmental literacy requires knowledge of the campus in the context of its local ecosystem” (p. 15). One of the facilitators in supporting sustainability for the college president could be a local community leader or leaders.

The importance of colleges having a community connection to support sustainability initiatives was also noted by Wright (2002a). She stated that there have been an increasing number of national and international sustainability

declarations which are relevant to higher education, and that many institutions attempt to become more sustainable by signing these declarations. “All of the declarations and most of the policies discuss the need for universities to situate themselves within the larger community in which they reside” (Wright, 2002a, p. 216). The community connection of the community college was an important aspect considered when I conducted the case study research for the institution.

Keniry (1995) listed a number of sustainable practices that were considered in the research design, including purchasing, landscaping, transportation, energy, dining services, and solid waste management. He also emphasized the importance of commitment of dedication, patience, courage, and persistence, which were considered in the case studies that were conducted for my research.

Moore’s (2005b) idea of a participatory workshop that uses value-focused thinking in order to engage faculty and staff in a dialogue about sustainability education was one approach that could have been used in the design of the study as a way to initiate feedback from college employees. Rees (2003) research concerning eco-footprinting provided one potentially valuable tool for assessing the sustainability of a campus, and was important to understand for my case study interviews.

Supporting Role of the President in Institutionalizing Sustainability at Community College

This section begins with an exploration of the concept of institutionalization. Next, a detailed review is conducted concerning various aspects of the college presidency and how they pertain to influencing the institutionalization of sustainability on a college campus.

Institutionalization

This section explores the concept of institutionalization. A definition of institutionalization is explored, as is the connection between institutionalization and cultural persistence. This section concludes with a look at the definition of institutional environmental change.

The concept of institutionalization in terms of my study refers to the integration of sustainability across all aspects of a college campus. Webster’s

Third New International Dictionary defined the term institutionalize as “to incorporate into a system of organized and often highly formalized belief, practice, or acceptance” (Gove, 1993, p. 1172).

One of the earlier investigations into the concept of institutionalization was in the field of sociology, specifically in the area of social construction. Berger and Luckman (1966) defined institutionalization as follows, “Institutionalization occurs whenever there is a reciprocal typification of habitualized actions by types of actors” (p. 54). Typification was defined as the mental representation of another person’s action, while habitualization was defined as “any action that is repeated frequently becomes cast into a pattern, which can then be reproduced with an economy of effort and which, ipso facto, is apprehended by its performer as that pattern” (p. 53). In other words, the authors described the social construction of reality as being based on actors interacting together to form mental representations of each other’s actions whereby these actions become habitualized. These reciprocal roles are then considered institutionalized. The author’s work was a treatise, in both title and approach, but as such it appeared to be extremely well thought out and clearly constructed.

The institutional approach to organization literature provided a valuable perspective concerning institutionalization. Scott (1995) provided this definition of institution, “Institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. Institutions are transported by various carriers—cultures, structures, and routines—and they operate at multiple levels of jurisdiction” (p. 33). He went on to explain:

In this conception, institutions are multifaceted systems incorporating symbolic systems—cognitive constructions and normative rules—and regulative processes carried out through and shaping social behavior. Meaning systems, monitoring processes, and actions are interwoven. Although constructed and maintained by individual actors, institutions assume the guise of an impersonal and objective reality. Institutions ride on various conveyances and operate at multiple levels—from the world system to subunits of organizations. (p. 33)

Scott emphasized how the organization literature supports three pillars of institutions, which are the regulative, normative, and cognitive. The regulative

refers to the fact that institutions constrain and regularize behavior. The normative system includes values and norms, where values are defined as “conceptions of the preferred or the desirable together with the construction of standards to which existing structures or behavior can be compared and assessed” (p. 37) and norms “specify how things should be done; they define legitimate means to pursue valued ends” (p. 37). The cognitive stresses “the rules that constitute the nature of reality and the frames through which meaning is made” (p. 40). This perspective matches closely with the interpretive philosophical approach that I am used for my research project. Scott argued that these three pillars provide a basis for legitimacy. “From an institutional perspective, legitimacy is not a commodity to be possessed or exchanged but a condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws” (p. 45).

Jennings and Zandbergen (1995) argued that institutional theory provides a useful approach to understanding ecologically sustainable organizations, particularly in understanding the ways that sustainable practices are developed and diffused throughout the organization. Institutional theory is useful because it focuses on the process by which items become embedded in institutions of accepted practice. Institutional theory “emphasizes the final acceptance or legitimation of some social practice or social goal” (p. 1024). The most pertinent point as it pertains to my study concerns paradigm shift. The authors emphasized that in institutional theory “the creation of new concepts and practices, their acceptance in different fields, and the building of institutions seems to snowball into paradigm change” (p. 1044).

A paradigm shift, as discussed by Jennings and Zandbergen (1995), is ultimately what institutional environmental change is all about. Wright (2002b) defined institutional environmental change as “institutional reform with the purpose of improving the environmental performance of the university” (p. 10). The author went on to say that university institutional environmental change:

...involves both the development of environmental curriculum and the greening of physical operations. The rationale behind institutional environmental change within the university is for the university to become both a model of sustainability for the community as well as produce

ecological graduates who are able to affect environmental change through their work and lifestyle choices. (p. 10)

In summary, this section provided Gove's definition of institutionalization as "to incorporate into a system of organized and often highly formalized belief, practice, or acceptance" (Gove, 1993, p. 1172). Berger and Luckman (1966) defined institutionalization as follows, "Institutionalization occurs whenever there is a reciprocal typification of habitualized actions by types of actors" (p. 54). The major point here is that actions become habitualized. Scott (1995) provided this definition of institution, "Institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. Institutions are transported by various carriers—cultures, structures, and routines—and they operate at multiple levels of jurisdiction" (p. 33). Scott emphasized that the three pillars of institutionalization, the regulative, normative, and cognitive, provide a basis of legitimacy for the organization. Wright (2002b) defined institutional environmental change as "institutional reform with the purpose of improving the environmental performance of the university" (p. 10). I believe this definition supports the general intent of a president who is interested in supporting the institutionalization of sustainability at a community college.

The Role of the President

There are some excellent publications and research concerning the role of the community college president. This section reviews the most pertinent literature concerning the community college presidency, and how aspects of that role pertain to influencing the institutionalization of sustainability at the community college.

Vaughan (1989) emphasized the importance of understanding the community college presidency more fully in order to better appreciate the potential and limitations of the community college itself. He concluded that early presidents found it easier to understand and communicate their role because it was well defined for them. This was particularly true concerning the mission of the college, because the mission was more of a priority for the early community college presidents. Vaughan argued that three functions of the presidency are the most important: managing the institution, creating the campus climate, and interpreting

and communicating the mission of the college. The second function, creating the campus climate, offers a direct tie to the institutionalization of sustainability on a college campus. “In setting the institutional climate, the president has the primary responsibility for ensuring a reasonable degree of balance between institutional, community, and individual concerns and needs” (p. 10). If sustainability is somewhere on the radar of the institutional, community, and/or individual stakeholder interests, then the president has a responsibility to incorporate that sustainability interest into the balance of the needs, including those of the institution, the community, and the individuals involved with the college.

Vaughan and Weisman (1998) noted that a significant change in the role of the presidency in recent years is the increased level of complexity for the presidency. The types of complexity includes more intrusive governing board members, better educated trustees, increasing multicultural perspectives and issues, globalization of the economy, distance education, and the pressure to produce graduates that can compete in a global market. This increasing complexity is a significant variable when considering the role of a college president in institutionalizing sustainability at community colleges, as it is more difficult to focus on sustainability in the midst of so much complexity. In addition, the authors found that a number of community college presidents stated that resources were often inadequate, and this, in turn, often made it more difficult to fulfill the college’s mission. If sustainability is not part of the stated mission, it may be that it will be even more difficult for the presidents to take an active role in institutionalizing sustainability. The authors’ research was based on a series of national Career and Lifestyle Surveys completed by hundreds of college presidents, followed by a interviews with 13 community college presidents. The research study appeared to be thorough and meaningful.

Myran, Baker, Simone, and Zeiss (2003) argued that the old image of the community college president as the all-seeing leader has been replaced by the image of the president as the architect or designer of the community college. “The president and the other executive team members must combine the artistic and scientific skills of the architect to continuously design the college so that it can

achieve its best possible future” (p. 4). The authors emphasized that the community college president must combine strategy and execution to effectively lead the institution. The strategic elements of the college include the mission statement, vision statement, and core strategies, while the execution involves coordinating the various operational units, systems, and structures of the community college. Given this definition of the strategic elements, in order for the community college president to support the institutionalization of sustainability, sustainability needs to be incorporated into the mission statement, the vision statement, and/or the core strategies of the community college.

Gumport (2003) argued that external forces are a major contributor to the decisions of community colleges and their presidents. The author stated that Scott (2001) pointed out that in highly institutionalized environments, organizations that align with external pressures ultimately enhance their prospects for long term survival. As one of the community college presidents she interviewed noted, “Our institution is in some ways the aggregate of decisions made by [other] people” (p. 54). The author’s study consisted of five, day-long focus groups with thirty public college and university presidents. The external pressures identified by the presidents included a wide array of expectations, including the presumption that the community colleges would ultimately adapt to the external pressures. The external pressures included legislators and employers who expect training of the workforce, policy makers who expect remedial education for underprepared students, students who expect low cost courses for students, and immigrants who expect language skill training. Interestingly, several presidents said that meeting the demands was not enough to satisfy constituents, as they often then complained that it was not fast enough or cheap enough. In terms of the role that a community college president plays in institutionalizing sustainability at a community college, external forces can be a significant contributor, or detractor, depending on the specific external messages, to institutionalizing sustainability at college.

O’Banion (1997) emphasized the continued emphasis in educational reform in the community colleges, along with the emphasis on transforming cultures with community colleges. “The community college is not afraid to reach out and explore

new ideas and new concepts” (p. xvi). The author’s emphasis concerning community colleges transforming cultures and exploring new concepts supports the act of a president attempting to institutionalize sustainability at a community college.

Desjardins (2001) developed a set of competencies for community college leaders that fits well with the role of a community college president in institutionalizing sustainability at a community college. The competencies were originally developed through detailed interviews with a large number of successful community college leaders, and later updated and validated through additional interviews to ensure that they reflected current practices. The research appeared to have been done in a thorough way with sound research strategies. There are 22 competencies, which are grouped into four categories: leadership, culture/climate, influence, and business management. Two of the competencies in the first category directly tie into my research: creates a shared vision and champions change. To create a shared vision, according to the author, exemplary presidents “undertook an evolutionary collaborative development of a vision by involving all the colleges’ constituencies with a stake in the outcome” (p. 20). This is another example of how the constituencies of a college can influence the role that a college president plays in addressing influences to institutionalizing sustainability at community colleges. Similarly, college presidents are clearly in a position to champion change, if they choose to do so, and this change could include the institutionalization of sustainability.

Addy (1995) emphasized the importance of vision for a community college leader. She described vision as “the best combination of both a personality type and an accumulation of experience—the embodiment of nature and nurture” (p. 23). I believe that vision is an important aspect concerning the role of a community college president in addressing influences to institutionalizing sustainability on a community college campus, because it may require vision to understand how to incorporate sustainability with the other demands on the college.

Fulton-Calkins and Milling (2005) outlined nine important traits for upcoming community college leaders. Five of these traits can be directly linked to

the role that a college president plays in addressing influences to institutionalizing sustainability at a community college campus. These five traits include learning from the past while influencing the future, leading from your values, vision, forging business and industry connections, and the importance of not forgetting students. Learning from the past while embracing the future relates to sustainability because future institutional goals that include sustainability will influence the decision making of the president. “The wise and successful community-college leader of today respects and celebrates the successes of the past and learns from them, while staying focused on the opportunities of the future” (p. 236). Clearly sustainability initiatives reflect the opportunities of the future for community colleges. Leading from your values ties into sustainability simply because, if sustainability is part of the organizations’ values, then the college president can more easily influence the institutionalization of sustainability. Similarly, if the vision statement can incorporate sustainability, then the president can more easily support sustainability initiatives. Forging business and industry connections is pertinent to sustainability because some of these connections may be supportive, or opposed, to sustainability initiatives. Lastly, the importance of students must never be overlooked, and their interests, or lack thereof, in sustainability can be an important variable in supporting sustainability initiatives.

This section began with Vaughan’s (1989) contention that creating the campus climate is an important role of the college president. It then reviewed the belief (Vaughan & Weisman, 1998) that the role of the presidency is increasingly complex, which I maintain makes it more difficult for the president to focus on sustainability. Myran, Baker, Simone, and Zeiss (2003) and Addy (1995) emphasized the importance of the mission statement, vision statement, and core strategies for the work of the president. Therefore, the challenge of the president will be to incorporate sustainability into the mission statement, the vision statement, and/or the core strategies of the community college. O’Banion’s (1997) emphasis concerning community colleges transforming cultures and exploring new concepts supported the act of a president attempting to institutional sustainability at a community college. Desjardins (2001) emphasized that constituencies of a

college can influence the role that a college president plays, and that a college president is clearly in a position to champion change. Lastly, Fulton-Calkins and Milling (2005) emphasized the five traits that tie in to the support of sustainability, which include learning from the past while influencing the future, leading from your values, vision, forging business and industry connections, and the importance of not forgetting students.

Summary

This summary of the literature review section is designed to describe what was already known about each of the research questions for this study and provided guidance to the next section concerning the design of the study. The review of the related research in the literature review was designed to reflect a gradually narrowing focus, with first a section on sustainability, followed by a section on sustainability in higher education, and ending with a section on the role of the college president in institutionalizing sustainability at a community college. In contrast, this summary is organized around the three research questions, after first reviewing the chosen definition of sustainability and a model of sustainability at a college campus.

The brief history of sustainability provided a basis for selecting a definition of sustainability for use in my study. The definition I chose to use for my study was the most common definition of sustainability, which incorporates social equality, economic prosperity, and environmental integrity. This definition seems to provide a solid foundation for understanding the role that a college president plays in institutionalizing sustainability on a community college campus.

Cortese (2003) provided a model that provided a helpful way to conceptualize sustainability at a college campus, and was applied to organizing all three of the research questions. His model had a series of four interlocking rings inside a larger ring, where the inner rings representing curriculum, research, operations, and community, were interlocked to represent the assertion that all of these initiatives needed to coexist and be given adequate attention if a college's commitment to sustainability was going to be campus wide, systematic, and ongoing.

The first research question was: What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard? Pearce and Uhl (2003) discussed the concept of an institutional assessment, which was one way of determining whether or not sustainability really had been institutionalized, or established, at a college. The assessment was a valuable aspect of the research design for understanding the level of sustainability that was in place at the case colleges. Haigh (2005) emphasized the importance of greening the curriculum. The teaching of environmental literacy throughout the curriculum of a college was a defining aspect of the institutionalization of sustainability at a college.

The second research question was: What are the important influences to achieving institutionalization of sustainability in community colleges? One facilitator was the originator, or champion, of sustainability on campuses of higher education, as a sustainability champion was chosen to be interviewed at each of the case colleges in this research study.

Barlett and Chase (2004) and Moore (2005a) emphasized that one significant barrier to any change in higher education is discipline boundaries. They explained that resources are generally linked to particular disciplines. This is particularly problematic for the area of sustainability, which by definition is interdisciplinary in nature. These discipline boundaries also negatively affect access to resources, which are frequently confined to the individual discipline.

The third research question was: What role has the college president played in addressing barriers and mobilizing facilitators to institutionalizing sustainability at community colleges that are exemplary in this respect? Barlett and Chase (2004) and Wright (2002a) emphasized the need for a college to be connected to the local community. One of the facilitators in supporting sustainability for the college president was often a local community leader or leaders. Wright (2002a) also stated that there have been an increasing number of national and international sustainability declarations which are relevant to higher education, and that many institutions attempt to become more sustainable by signing these declarations. Rees (2003) research concerning eco-footprinting was one potentially valuable tool

for assessing the sustainability of a campus, and was important to understand during the interviews that were conducted during my study.

Keniry (1995) listed a number of sustainable practices that should be considered in the research design, including purchasing, landscaping, transportation, energy, dining services, and solid waste management. This provided a good guideline for the investigation of sustainability practices at the case colleges.

The review of literature also suggested implications for studying the concept of institutionalization. Berger and Luckman (1966) defined institutionalization as actions becoming habitualized. Wright (2002b) defined institutional environmental change as institutional reform that improves the environmental performance of the institution.

The review of literature was informative as to the role of the presidency. This section began with Vaughan's (1989) contention that creating the campus climate is an important role of the college president. It then reviewed the belief (Vaughan & Weisman, 1998) that the role of the presidency is increasing complex, which I maintain makes it more difficult for the president to focus on sustainability. Myran, Baker, Simone, and Zeiss (2003) and Addy (1995) emphasized the importance of the mission statement, vision statement, and core strategies for the work of the president. Therefore, a likely challenge of a president will be to incorporate sustainability into the mission statement, the vision statement, and/or the core strategies of the community college. Desjardins (2001) emphasized that constituencies of a college can influence the role that a college president plays, and that a college president is clearly in a position to champion change. Lastly, Fulton-Calkins and Milling (2005) emphasized the five traits that tie in to the support of sustainability, which include learning from the past while influencing the future, leading from your values, vision, forging business and industry connections, and the importance of not forgetting students. The knowledge gained from the review of literature informed the design of the study. Specifically, it provided the background and foundation for questions that were asked in the interviews, and, of

even more value, the follow up questions to the initial interviewee's responses, so as to ascertain their knowledge of sustainability issues on their campuses.

CHAPTER 3: DESIGN OF STUDY

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. The following design parameters were intended to support the purpose of this study. The philosophic approach was interpretive social science, the research method was case study, and the primary research technique was interview. This section describes the philosophic approach, research method, personal disclosure, data needed, study sites and study participants, data collection and analysis procedures, strategies for soundness, and strategies for protection of human subjects. The rationale for all design decisions is included.

Philosophical Approach

There is little value in pursuing a research project, or a doctoral degree for that matter, unless you can attempt to create something meaningful. While the research may lead to but a small piece of academic understanding, it needs to be a meaningful piece nonetheless. Van Manen (1990) explained well the value of writing with meaning when he stated:

It all seems somewhat absurd until we begin to discern the silence in the writing—the cultivation of one's being, from which the words begin to proliferate in haltingly issued gropings, then finally in a carefully written work, much less completed than interrupted, a blushing response to a call to *say* something, to actually say something, while being thoughtfully aware of the ease with which such speaking can reduce itself to academic chatter. (p. 8)

The philosophical approach for this study was designed to provide meaning. The philosophical approach that I used was interpretive social science because the aim of this approach was meaningful social action, which matches closely with the purpose of the study. The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus.

Purpose

This section provides the rationale for choosing the philosophical approach of interpretive social science for my study. The section begins by explaining some core elements and key concepts of interpretive social science, explores the historical underpinnings including some of the key philosophers, and clarifies several of the criteria for truth of interpretive social science. The section ends with an explanation of the rationale for why I chose interpretive social science for my study.

The purpose of interpretive social science research is to understand life in our society and to give meaning to people's activities in their natural settings. It is about sense making and exposing hidden meanings. Interpretive research is a type of qualitative research. Bogden and Biklen (1998) stated that the "qualitative researchers' goal is to better understand human behavior and experience" (p. 38). Denzin and Lincoln (2005) stated, "qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them" (p. 3).

Neuman (2003) described the interpretive approach as "the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds" (p. 76). In my study I was interested in observing and understanding the role of the college president as it pertains to institutionalizing sustainability on a community college campus.

The interpretive social science approach is ultimately about the nature of human beings to create meaning and make sense of their experiences and environments. Values are stressed as an integral part of social life where different groups' values are neither right nor wrong, but just different.

Neuman (2003) emphasized a number of key concepts of interpretive social science. For the researcher, the goal of interpretive social science is to understand people's experience and how they construct meaning in the natural world. Therefore, the emphasis is on meaningful social action, in the case of my study,

institutionalizing sustainability on a college campus. Human social life is seen as an accomplishment, where ordinary people create systems in order to develop meaning through social interaction. Common sense is often the guide for decision-making in people's lives. Interpretive social science is used to describe and interpret how people are conducting their daily lives.

Interpretive social science is grounded in the hermeneutic sciences. The existentialist-hermeneutic school arose in reaction to positivists' interpretation of biblical texts (Brown, 1989). Seventeenth-century Protestant theologians developed a method to gain meaning and understanding from the reading of biblical texts (Carr & Kemmis, 1986). This method of interpretation became known as hermeneutics. Hermeneutic philosophy provided the means of interpretation. "Because it is focused on understanding in everyday life and because this everyday understanding underlies all knowledge, philosophical hermeneutics is universal; it underlies all knowledge" (Brown, 1989, p. 275). In my study, the text will be the transcripts of interviews with college presidents and others at the sites (cases) that I selected.

A significant author concerning interpretive social science was the German philosopher Heidegger (1889-1976). He developed a radical version of hermeneutics that was designed to eliminate any remnants of positivism and scientific rationality (Schweizer, 1998). He believed that the chief function of interpretation is to make explicit what is already part of our awareness. In his writings, he described interpretation as "the ability of the mind to make explicit and to reveal what is somehow already within one's experience" (Gelven, 1970, p. 92).

Gadamer (1900-2002), a pupil of Heidegger, expanded and modified Heidegger's version of hermeneutics into a general theory of interpretation. Gadamer stressed "interpretation has to bridge different traditions: that of the past to which a text belongs and the tradition of the interpreter that entails assumptions on which meanings to expect" (Schweizer, 1998, p. 48). In my study, I interpreted text from past presidential experiences to assist present day and future presidents to understand what they may have to do if they want to institutionalize sustainability on their campuses.

Palmer (1969) emphasized that hermeneutics is fundamental to all humanities, and describes three directions of meaning for the term hermeneutics. The first is what he describes as the ancient usage, which is “interpretation as ‘saying’ and as ‘expressing’” (p. 19). The second direction emphasizes the direction of meaning as to explain, “it points to the explanatory rather than expressive dimensions of interpretation” (p. 20). The third direction of meaning is translation, and he describes it as “a special form of the basic interpretive process of ‘bringing to understanding’” (p. 27). My study explored all three of these directions of meaning: what does the institutionalization of sustainability “say” to the college president, is her/his role one of “explanatory,” and does the institutionalization of sustainability “bring to understanding” new concepts to the students, staff, and faculty of the college.

Weber developed a famous definition of sociology that emphasized the interpretive understanding of social action where the significant feature about action was its “subjective meaning” (Carr & Kemmis, 1986, p. 87). Subjective meaning is a significant aspect of interpretive social science, and includes motives and intentions in addition to the actions of individuals. In terms of my study, one aspect of the role that a college president plays in institutionalizing sustainability on a community college campus is the subjective meaning of the president. For instance, it was interesting to compare the president’s motives and intentions with her or his actions. Is it possible that the political environment of the college creates a situation where the president’s intentions are greater than her or his actions?

An aspect of subjective understanding that is important as a standard or criterion for understanding is the concept of inter-subjective understanding, or intersubjectivity. Neuman (2006) defined intersubjectivity as “a principle for evaluating empirical evidence in positivist social science that states different people can agree on what is in the empirical world by careful observations based on using the senses” (p. 85). Van Manen (1990) described how the human science researcher needs the other, such as the reader, or the object of the research, “in order to develop a dialogic relation with the phenomenon, and thus validate the phenomenon as described” (p. 11). Brown (1989) emphasized that the cultural

tradition and historical context of texts need to be taken into serious consideration when considering the original meaning of the texts. She stated, “The question becomes one of how we are to interpret the self-interpretations individuals or social groups make as they express these in speech and action” (p. 280).

Inter-subjective understanding is a major criterion for truth in the interpretive philosophical approach. Truth is entirely dependent on both the relationship of the researcher to that being researched and the relationship of the written research and the reader. Smart (1976) called this interpretive explanation the “postulate of adequacy,” which, he said:

...asserts that if a scientific account of human action were to be presented to an individual actor as a script it must be understandable to the actor, translatable into action by the actor and furthermore comprehensible to his fellow actors in terms of a common sense interpretation of everyday life. (p. 100)

I am drawn to interpretive social science research because of its emphasis on educational aims. “It aims to educate: to deepen insight and to enliven commitment. Its work is the transformation of consciousness, the differentiation of modes of awareness and the enlightenment of action” (Carr & Kemmis, 1986, p. 93). It can ultimately lead, indirectly, to action by encouraging critical reflection of meaning. For my study concerning the role the college president plays in institutionalizing sustainability on a college campus, it was hoped that results of the study may ultimately educate a wide number of people concerning the possibilities for institutionalization of sustainability on their own campus. Similarly, the study may provide insight for current community college presidents concerning their own potential for influencing their campuses, including their staff, faculty, and students.

Interpretive social science inherently holds some major assumptions about the nature of reality and truth. It is believed that the nature of social reality is created by human interaction. Truth is defined as that which provides a very deep sense of feeling right to those who are being studied. In other words, truth is entirely dependent on the perception of the person experiencing the world.

I selected an interpretive social science research design for several reasons. First, it seems most appropriate for the research, as interpretive social research

emphasizes meaningful social action, and the study concerns itself with meaningful social action in the form of sustainability initiatives on college campuses. Second, it most closely aligns with my core beliefs, as elaborated in the next section concerning my personal disclosure.

This section provided the rationale for choosing the philosophical approach of interpretive social science for my study. The section began by explaining some core elements and key concepts of interpretive social science, explored the historical underpinnings including some of the key philosophers, and clarified several of the criteria for truth of interpretive social science. The section ended with an explanation of the rationale for why I chose interpretive social science for my study.

Personal Disclosure

A significant aspect of my worldview is founded in constructivism. The basic tenet of constructivism is that people are active learners and must construct knowledge for themselves. I agree with the idea that knowledge and understanding are created or influenced from “one’s own construction of meaning” (Prickle, 2001, p. 4). I strongly believe that people are almost always active learners, and that to truly learn, they must construct knowledge for themselves. Constructivism is both “a psychological and philosophical perspective contending that individuals form or construct much of what they learn and understand” (Schunk, 2004, p. 285).

I think that constructivism can be significant in terms of how one chooses to approach and conduct research. This is because the emphasis in constructivism theory is on the “generative, organizational, and selective nature of human perception, understanding, and memory” (Spivey, 1997, p. 3). Research is largely based on people’s perception of their experience, and therefore how they perceive the world around them is very significant to the research process. “Constructivists view people as constructive agents and view the phenomenon of interest (meaning or knowledge) as built instead of passively “received” by people whose *ways* of knowing, seeing, understanding, and valuing influence what is known, seen, understood, and valued” (Spivey, 1997, p. 3).

My worldview also has a very powerful environmental lens. This is rooted in an early childhood development of environmental ethics, and bolstered by undergraduate and graduate degrees in environmental science. I believe strongly that it is in everyone's best interest to be mindful and intentional about the health of the environment. I believe that leaders in our society, both within higher education and externally, have a responsibility to do everything in their power to protect the environment for current and future community members.

My research approach concerning an environmental lens reflects a strong set of personal values. These values hold that environmental matters are critically important to the well being of both the planet and our communities. Another related value is that higher education institutions are critically important potential players in environmental reform.

My perspectives towards environmental concerns may cause me to over-emphasize the triad that defines sustainability: ecological integrity, social equity, and economic prosperity. An over emphasis on the environment may privilege that part of the triad at the expense of the other parts of the definition – the social and the economic.

My environmental values may also cause me to assume that all environmental issues have a positive value. This in turn may cause me to find it difficult to be open minded and non-judgmental about issues that may bring this perspective into question. For example, an institution may choose to disregard an environmental program due to budgetary constraints. My values (subjective, which is very important to recognize in interpretive social science) may cause me to view a related research outcome in a negative light, when in reality the institution's decision may have been based on a solid business cost-benefit analysis. Of course, given the chosen, and common, definition of sustainability for this study, a cost-benefit analysis may provide the same outcome as an environmentally oriented assessment.

Method

This section reviews the research method for my study, which is multiple case study analysis. The section reviews the rationale for selection of this research

method and provides some key concepts and important authors of this research method. It also offers an explanation of the research method that I almost chose, which was a phenomenological study, along with some key concepts of that research method.

The method of research that I used to study the role that college presidents play in institutionalizing sustainability on community college campuses was multiple case study analysis. The decision to use multiple case study analysis, and most of the design decisions that follow, are founded on the review of literature for my study (Merriam, 1998) along with the research questions for my study (Stake, 2006; Yin, 2003).

Yin (2003) emphasized that case studies are the preferred research strategy when the questions posed are of a “how” and “why” nature, when the investigator lacks control over events, and when one is interested in contemporary, rather than historical, phenomena. While the research questions for my study are in a “what” format, they are really referring to the how and why aspects of sustainability at community colleges. For the study, the investigator, myself, does indeed lack control over the events of the study, and the issue is indeed a contemporary one.

I seriously considered, and almost undertook, a phenomenological study as the research method for my study. The purpose of a phenomenological study is to better understand the world in which we live. “Phenomenology aims at gaining a deeper understanding of the nature or meaning of our everyday experiences” (Van Manen, 1990, p. 9). It ultimately delves into our consciousness and how our perception of an object or experience is related to reality. A phenomenological study is seeking to understand the essence of the lived experience. It involves intentionality and thoughtfulness in the research process in an attempt to expose hidden meaning. Ultimately, a phenomenological study of the role that a college president plays in institutionalizing sustainability on a community college campus would have been about the experience of the president. Since I am more interested in the role of the president and the wider context or situation of the colleges where sustainability has been institutionalized, I decided that a case study was a more appropriate method for my research study.

Creswell (1998) described case studies as “an exploration of a ‘bounded system’ or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context” (p. 61). Stake (2006) emphasized that, in order to understand a case, the researcher must experience the activity of the case within the proper context and within a specific situation. He stated, “The situation is expected to shape the activity, as well as the experiencing and the interpretation of the activity. In choosing a case, we must always choose to study its situation” (p. 2). A case study concerning the role that a college president plays in institutionalizing sustainability on a community college campus is a good example of an activity within a specific situation within a bounded system. The activity is the role the president plays, the situation is the institutionalization of sustainability, and the bounded system is a college campus, as it typically has a very defined land area and boundary.

There are some key concepts concerning the use of case studies. One key concept is that the primary purpose of doing a case study is to understand that particular case, and “to maximize what we can learn” (Stake, 1995, p. 4). Case studies require an emphasis on interpretation, which is based largely on interviews, observations, and documentation. Research questions need to provide the basis for the case study research. Lastly, a case study needs to be well organized.

There are common general steps in doing a case study, which are as follows. The first step is to decide on what case, or cases, to study. Once this decision has been made, the next step is to develop a research question or questions, if this has not occurred already. One then needs to decide on the type of data collection to undertake, as it is important to have multiple sources of information. Yin (1989) outlined six different types of data, including interviews, documentation, archival records, direct observations, participant observations, and physical artifacts. Lastly, a thorough analysis of the data must take place.

For a multiple case study, it is important to understand the concept of a quintain. A quintain is the topic or issue that binds multiple cases together (Stake, 2006). Concerning my research study, the quintain was sustainability in a community college setting. Each of the individual cases involved in a multiple

case study analysis should support the provision of increased insight and understanding of the quintain.

This section reviewed the research method for my study, which was multiple case study analysis. The decision to use multiple case study analysis was founded on the review of literature. I chose the multiple case study analysis because I was interested in the ways in which a president is involved in the institutionalization of sustainability on a community college campus. I almost chose a phenomenological study, but a case study seemed more appropriate since I was interested in the role of the president rather than the nature or meaning of the president's everyday experiences. Case studies require an emphasis on interpretation, which is based largely on interviews, observations, and documentation.

Procedures

The primary procedure or data collection technique for the multiple case research study concerning the role that a college president plays in institutionalizing sustainability on a community college campus was interviews, which were supplemented by review of documents and observations of the participant's home institution. The specific data needed was dictated by the research questions for this study. "Research questions form the kind of conceptual structure suitable for designing and interpreting educational research" (Stake, 2006, p. 3). The site and participant selection were completed with the assistance of a panel of experts in the field of sustainability in community colleges. The literature review guided the type of data needed, collection strategies, and analysis that was needed, but one significant aspect was the coding of text from the interview transcripts. Strategies to ensure soundness and strategies to protect human subjects are also provided in this section.

Data Needs

The data needed for a case study is dictated by the research questions and supported by the literature review. Therefore, data was needed that provided answers to these three research questions:

1. What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard?
2. What are the important influences to achieving institutionalization of sustainability in community colleges?
3. What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect.

For the first question above, the data needed was an understanding of the processes, relationships, and or policies that were involved in the institutionalization of sustainability at successful community colleges in this regard. Pearce and Uhl (2003) discussed the concept of a university (institutional) assessment, which could be a way of determining whether or not sustainability really has been institutionalized, or established, at a college. The assessment could be a valuable aspect of the research design for understanding the level of sustainability that is in place at a college. Therefore, one piece of needed data was whether or not any type of sustainability assessment has occurred at the college.

Keniry (1995) listed a number of sustainable practices that should be considered in the research design, including purchasing, landscaping, transportation, energy, dining services, and solid waste management. In addition, he also emphasized the importance of the commitment of dedication, patience, courage, and persistence. A necessary piece of data was whether or not a college was applying sustainable practices in the areas listed above. Haigh (2005) emphasized the importance of greening the curriculum. The teaching of environmental literacy throughout the curriculum of a college can be a defining aspect of the institutionalization of sustainability at a college. So another needed piece of data was whether the college had taken actions to add a sustainable component to their overall curriculum.

As Berger and Luckman (1966) pointed out, institutionalization occurs when actions have become habitualized. Therefore, one significant piece of data concerned whether sustainability-supporting actions had indeed become habitualized at the college.

For the second question above, the data needed concerned the history, issues, events, relationships, and/or policies that blocked and /or facilitated the institutionalization of sustainability at successful community colleges in this regard. The literature review suggested that there was tremendous disagreement concerning the appropriate definition of the term sustainability, which can be a complicating factor in achieving the institutionalization of sustainability at a college campus. Therefore, data was needed concerning whether everyone on a college campus was “on the same page” when it comes to institutionalizing sustainability, or whether this issue of definition was even considered.

Shriberg (2002) offered a handful of positive conditions for success in campus sustainability efforts. These included “image-seeking behavior, collaborative decision making structures, collegial atmosphere and progressive/liberal political orientation” (p. 286). Therefore it was necessary to know if these conditions exist on the selected college campuses.

Barlett and Chase (2004) outlined a number of barriers to change. They emphasized that one significant barrier to any change in higher education was discipline boundaries, which basically represent the other side of the coin, so to speak, of the positive images for success which Shriberg outlined above. Barlett and Chase stated that resources are generally linked to particular disciplines, and “the structure of the institution gives rise to a status quo that militates against interdisciplinary work” (p. 10). The siloed organization of disciplines is particularly problematic for the area of sustainability, which by definition is interdisciplinary in nature. These discipline boundaries also negatively affect access to resources, which are frequently confined to the individual discipline. Moore (2005a) found that disciplinary boundaries were a significant barrier, partly because a department ultimately claims even interdisciplinary programs, such as sustainability. In addition, individual departments allocate funding resources, and their structures ultimately determine the outcomes. Another boundary that Moore discussed was the competitive environment of the college, between and within students, faculty, departments, and universities. She also discussed the boundaries inherent in unclear priorities and unclear decision-making structures. Therefore it

was necessary to determine if discipline boundaries interfered with the establishment of a sustainability program.

For the third question above, the data needed concerned the role the president had played, and/or personal feedback from the college president concerning issues, relationships, and/or policies that influenced the institutionalization of sustainability. One role that needed to be investigated was the community connection to support sustainability (Barlett & Chase, 2004; Wright, 2002a). One aspect to investigate was whether the college used national and international sustainability declarations as a way to commence sustainability initiatives.

In terms of the role of the president, several issues were presented in the literature review. One issue that needed to be probed was whether the increasing complexity of the role of the presidency (Vaughan & Weisman, 1998) made it difficult for the president to focus on sustainability. Another issue was whether sustainability was a component of the mission statement, the vision statement, and/or the core strategies of the community college (Addy, 1995; Myran, Baker, Simone, Zeiss, 2003). There was also the issue of how constituencies can influence the role of a president (Desjardins, 2001), so it was important to investigate if constituencies had been in favor or opposed to the president supporting sustainability initiatives. Lastly, it was useful to see if there was agreement with Fulton-Calkins and Milling (2005) concerning the five traits that tied in to the support for sustainability. These five traits were learning from the past while influencing the future, leading from your values, vision, forging business and industry connections, and the importance of not forgetting students.

My plan for organizing interview questions was to integrate Cortese's model (2003), which emphasize four aspects of the campus--curriculum, research, operations, and community--with the three research questions. I modified his model for use on a community college campus by removing the research component, since research is not as significant at a community college as it is at many four-year colleges. In addition, I replaced curriculum with a more general term, the learning experience, which is a bit broader, and thus more inclusive,

covering other aspects of the teaching and learning experience than just curriculum. Therefore, my interview questions were based around understanding the influence of the college president in institutionalizing sustainability as it pertains to the areas of the learning experience, operations, and community.

In addition to using what I envision as a combination of my purpose and interview questions with a slightly abbreviated version of Cortese's model, I also leaned hard on some of the core foundations of my study in the development of my data needs. These core foundations include my philosophical approach, research method, and criterion for truth.

Site and Participant Selection

For a qualitative study, such as my study, the most appropriate and common sampling strategy is purposeful sampling, also known as purposive sampling (Merriam, 1998). "Purposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (Merriam, 1998, p. 61). To provide purposeful sampling, it is important to select participants and sites that are information rich (Creswell, 2005). One type of purposeful sampling is extreme case sampling, where a case is studied because it is particularly successful or unsuccessful.

Three community college cases were identified by a nomination and selection process that is explained below. Stake (2006) recommended using at least four cases in order to provide enough interactivity between different programs and their situations, but also said that using fewer cases is commonly done.

The study participants for my chosen study were three current community college presidents who have been involved in the institutionalization of sustainability on their college campuses along with three sustainability champions. For this study, I used snowball sampling, which is a type of purposeful sampling, to identify the participants and sites that were information rich (Creswell, 2005). The number of participants was limited to six largely based on balancing quality of data and limitations of time and resources for the dissertation process with a desire to present the full complexity of the information that was provided by the individuals.

Case Selection

The criteria for both selection of participant sites and participants is typically based on the review of literature, which was the case in my study. Based on Keniry (1995), the participant sites should be leaders within community colleges in a number of sustainable practices, including purchasing practices, landscaping, transportation, energy, dining services and solid waste management. It was also important that the college had taken actions to add a sustainable component to its overall curriculum (Haigh, 2005).

Extreme-case sampling was used to identify community colleges through the review of American Association of Sustainability in Higher Education (AASHE) Leadership Award winners, publications, conference presentations, and conversations with colleagues familiar with my topic. The primary selection of participant sites involved soliciting recommendations from a group of the authorities concerning sustainability in higher education. Twelve authorities were chosen based on their leadership in sustainability in higher education and/or their publication record in sustainability in higher education. Snowball sampling was utilized to identify cases of interest from those currently working in the community college field who knew potential institutions that meet the operational criteria outlined below.

I contacted each of the 12 authorities via e-mail, introduced myself, my research proposal, and asked for their assistance with my research. I provided the following nomination criteria. For those from whom I did not receive a response, I followed up, first with another e-mail, and then with a telephone call.

The nomination criteria for cases was as follows:

1. Overall impact of an institution's sustainability efforts, relative to institution size and wealth.
2. Breadth of sustainability initiatives, including demonstrated leadership within community colleges in a number of sustainability practices, including purchasing practices, landscaping, transportation, energy, dining services, solid waste management, and incorporation of sustainability components into their curriculum.

3. Extent of student involvement in sustainability initiatives.
4. Level of support from campus administration.
5. Extent to which institution serves as a model for others.

Once a list of community college cases was identified, each institution was reviewed based on four operational criteria. Operational criteria were constructed based on the scope of this study and insights from the purpose, research questions, and literature review. Three cases were selected that best fit the criteria based on time, financial resources, and the need for in-depth exploration of each case.

Selection criteria were broken into primary and secondary criteria as follows:

1. Cases chosen must have demonstrated leadership within community colleges in a number of sustainability practices, including purchasing practices, landscaping, transportation, energy, dining services, solid waste management, and incorporation of sustainability components into their curriculum.
2. Cases must have a president who has been at the college for at least four years, and/or has been there long enough to have been a significant leader in its sustainability initiatives.
3. Cases were chosen to provide a variety of different college settings, such as rural versus urban, technical versus liberal arts, and small versus large.

A secondary criterion was also established from the review of case study research and the literature review.

4. Cases are accessible in terms of geographic location and time available as it was critical that most interviews be held in-person whenever possible as suggested by case study experts.

Study Participant Selection

I contacted the identified president at each case study site selected initially by phone to inform them of the study and to seek out their interest and their college's interest in participating in the study. I explained the purpose of the research study and the opportunity for the college to participate. The interviews were designed to aid in gaining perspectives on the meaning given to the role that a

college president plays in institutionalizing sustainability on a community college campus.

Once the participants expressed an interest in participating in the study, an informed consent letter was mailed immediately. This letter asked the president if they were willing to be interviewed, and it asked them to identify individuals to be interviewed who met the selection criteria. Selection criteria were constructed based on the scope of this study and insights from the literature review. Selection criteria that were used were as follows:

1. Participants chosen must have been involved in the formulation of sustainability initiatives during the time period of their employment at the college.
2. Participants must be willing to be open to sharing their experiences regarding the role of the college president in institutionalizing sustainability at the college with the researcher.
3. Participants will include the president of the college and a sustainability “champion,” or advocate, if there was one at the college. A sustainability champion was defined as an individual who was a primary or key mover in initiating and/or supporting sustainability activities on campus. Given this definition, selection of the sustainability champion was based on the recommendation of the president of the college.

Potential participants were then asked to sign and return the informed consent form, as well as, provide a list of potential interviewees. Two individuals were selected from each case that best fit the criteria based on time, financial resources, and the need for in-depth exploration of each case. Each individual was invited to participate and provided with an informed consent letter and form.

Data Collection Techniques

This section describes the data collection techniques, which involved interviews, observation, and review of documents. The specific initial questions for the interviews are outlined.

The primary data collection technique was interviews. The type of interview that occurred was one-on-one in person interviews. Interviews were recorded with an electronic recording device, and no backup system was used.

The interviews were supplemented by direct observation of the participant's home institution, participant observation, and by review of the information available concerning sustainability at the participant's home institution including documents, archival records, and physical artifacts (Yin, 1989). The observation of the participant's home institution involved a requested tour of the campus by the president and/or the sustainability champion at the college. The review of documents was limited to two to three documents. The selection of these documents was based on the recommendations of the president and the sustainability champion of the given community college.

Based on the summary of the literature review, the interviewees were asked the following questions, broken down by the three foundational research questions of the study. It is important for an interpretive study that the questions are fairly simple and very open-ended. This approach allows the person being interviewed to direct the response to what they think is important. Interview questions pertaining to the first research question, What does it mean to have sustainability "institutionalized" at community colleges that are judged to be exemplary in this regard, were:

1. What is your understanding of the term sustainability?
2. Do you believe that sustainable concepts have been applied to areas of your campus? If so, in what ways?
3. What do you think sustainability would look like if it were applied to the learning experience? Has there been an effort to involve sustainability into the learning experience?
4. What do you think sustainability would look like if it were applied to the operations of the college? Has there been an effort to involve sustainability into the operations?
5. What is your sense of the concept of the institutionalization of sustainability at a college campus?

6. How would you describe the level of institutionalization of sustainability at your college campus?
7. Do you see a connection between the sustainability activities at your college and local and regional community sustainability initiatives? If so, describe.
8. Has any type of sustainability assessment has occurred at the college?
9. Is the college applying sustainable practices in the following areas: purchasing, landscaping, transportation, energy, dining services, and solid waste management.

For the second research question, What are the important influences to achieving institutionalization of sustainability in community colleges, the following questions were asked:

1. Can you provide your own definition of the term sustainability?
2. Do you believe sustainability has been addressed in any way at your college?
3. Do you perceive certain facilitators, or supporting aspects, to the institutionalization of sustainability at your campus? What are they? How do they work (have influence)?
4. Do you perceive barriers to the institutionalization of sustainability at your campus? What are they? How do they work (have influence)?
5. Does everyone on a college campus appear to be “on the same page” when it comes to institutionalizing sustainability, or was the issue of definition even considered?
6. Did discipline boundaries interfere with the establishment of a sustainability program?

For the third research question, What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect, the following questions were asked:

1. How active have you been in the institutionalization of sustainability at your college? What have been your actions?
2. How do you balance thinking about, or addressing the institutionalization of sustainability, with all of the other demands on your time as president?

3. Did the increasing complexity of the role of the presidency make it difficult for the president to focus on sustainability?
4. Did the college use national and international sustainability declarations as a way to initiate sustainability initiatives?
5. Is sustainability a component of the mission statement, the vision statement, and/or the core strategies of the community college?
6. What do you see as the future of your involvement with the institutionalization of sustainability at your college?
7. Have constituencies been in favor or opposed to the president supporting sustainability initiatives?

The interviews were supplemented by observation of the participant's home institution, and by review of the information available concerning sustainability at the participant's home institution.

Data Analysis

Data analysis began the minute that I began collecting data. "The right way to analyze data in a qualitative study is to do it simultaneously with data collection" (Merriam, 1998, p. 163). The primary advantage to analyzing data from the outset of the data collection is that it allows the researcher to make decisions that narrow the study to the original purpose and research questions. Creswell (1998) described data analysis as a spiral, where you continually reflect, interpret, and make further decisions concerning your research.

One significant piece of data analysis that was used was the coding of text from interview transcriptions. This allowed themes to emerge that were used in the analysis. Since the philosophical approach for this research study was interpretive social science, it was appropriate to use this ancient hermeneutic approach to the development of themes. In addition, analysis of general information and observations about the individual college's sustainability programs needed to be integrated with the interview data.

In a multiple case study analysis, it is necessary to analyze the individual cases, and to also analyze across cases (Stake, 2006). For a case study, data management becomes an important, and often, formidable task (Merriam, 1998).

One strategy I used was to continually stay extremely organized with my data, using clear file systems for both paper data and electronic data.

The primary goal of the data analysis was to allow common themes to emerge from the data (Merriam, 1998; Stake, 2006). Allowing common themes to emerge involved both intuitive and analytical skills (Merriam, 1998). Merriam (1998) recommended a constant comparative method for analyzing data, which means that the researcher was constantly comparing data in an effort to deduce meaning from the data. For my study, I was constantly comparing interview data with written and observed data, comparing data obtained between cases, and comparing data obtained with what was learned in the literature review.

Specifically, all of the audio recordings of the interviews were transcribed verbatim. Next, the transcriptions, along with the written notes taken during the interviews and the site visits were coded. The process for coding was to label text, based on frequency of words or statements, as the initial step towards understanding the meaning. Next, codes across interviews were compared in an effort to identify patterns. Lastly, emerging patterns were reviewed in an effort to identify themes.

The emerging patterns and themes were then related to the initial research questions. The ultimate goal was to attempt to create meaning from these patterns and themes in relation to the initial research questions.

Strategies to Ensure Soundness

Strategies to ensure the soundness of data collection, analysis, and interpretation involved careful preparation before starting on the data collection process. Interview practice sessions occurred in advance to prepare for a successful interview experience. Data collection involved site visits with college presidents and sustainability champions. During the visits, adequate time was allotted for conducting interviews, with the use of primary recording technology instruments.

One specific strategy to ensure soundness was to make sure that my study was consistently supporting my criteria for truth that was designed in the development of my philosophical approach. Specifically, for an interpretive social science research project, there are two significant criteria for truth that I reviewed

earlier, inter-subjective understanding and the emphasis on educational aims. Inter-subjective understanding requires that the researcher not distort the participants' intended meaning in the interpretation of the data. The emphasis on educational aims refers to the fact that it is hoped that the results of my study may ultimately educate a wide number of people concerning the possibilities for institutionalization of sustainability on their own campus.

One technique for checking on inter-subjective understanding concerning my interviews with the president and the sustainability champion was to ask them if I heard and understood them correctly. For example, on a regular basis I would repeat back to them what I understood them to say and mean, and ask them if my understanding was correct. In addition, I also checked with my interviewees to see what they thought about my developing interpretation of my data. With respect to their views on my interpretations, the point is not that they needed to agree with my interpretations but that their views were insightful to me as I prepared my final interpretations and also useful to my readers as they consider the soundness of my interpretations.

There are several ways to ensure that my study was supporting the emphasis on educational aims. First, the research questions and more detailed interview questions, document reviews, and observations were focused on what could be learned at the educational sites as related to institutionalizing sustainability and the role of the college president in this regards. I also had several people whom I respect for their interest and knowledge of institutionalizing sustainability in higher education settings read sections of the dissertation report as it was being prepared, with the specific task of determining if it was insightful to their understanding of this topic and in what ways.

These two readers included the Chief Financial Officer of my college's district and the Vice President of Learning at my college. The Chief Financial Officer stated:

This dissertation study definitely provided me a much broader perspective about sustainability and the college campus. After reading portions of the study, the steps for institutionalizing sustainability are more clear; moreover, it is apparent that the entire campus community can be involved

in various sustainability initiatives. Broad based implementation certainly requires leadership from throughout the organization. (Linda McDermott, personal communication, September 14, 2009)

The Vice President of Learning offered this perspective concerning the insightfulness of the dissertation to her understanding:

Given that our community college is considering sustainability as one of our core themes under the new Northwest Commission on Colleges and Universities accreditation standards, the insights learned from this will provide significant guidance to our president and our campus generally on how to understand and implement sustainable practices. (Carol Riesenberg, personal communication, September 13, 2009)

One significant technique to ensure soundness is the use of triangulation, “to assure that we have the picture as clear and suitably meaningful as we can get it, relatively free of our own biases, and not likely to mislead the reader greatly” (Stake, 2006, p. 77). Triangulation is a form of validation. It involves seeing if what you are learning about the case, or the quintain, is consistent with what is already known (Stake, 2006). In essence, triangulation involves using several forms of data to gain perspective and confidence in my overall interpretation with the goal of ensuring that I was getting the whole context right. The process of triangulation occurred both during the fieldwork and during the analysis of the accumulated data. Triangulation was used during the fieldwork in two ways. One way was by using a variety of methods to collect data, such as interviews and observation. Another way was to interview multiple participants at each site to ensure that the findings were corroborated by multiple sources (Gall, Gall, & Borg, 2003). For my research study, I interviewed the presidents of each institution along with the primary champion of sustainability on the college campus.

Strategies to Protect Human Subjects

In July 2006 I completed the Oregon State University Course in The Protection of Human Research Subjects. This course emphasized the importance of protecting human subjects when conducting research. A timely application immediately after acceptance of my research proposal by my committee was made to the Institutional Review Board. The appropriate information was provided to each of the interview subjects. This information included a statement that the study

involves research, an explanation of the purposes of the research, the expected duration of the subject's participation, and a description of the planned procedures. In addition, a consent form was provided to each of the interviewees.

One potential problem for a multiple case study analysis such as my study can be the requirements and facilitation of the needs of each college's own Institutional Review Board, if they had one. As soon as I selected the colleges for my case study, I contacted the specific colleges promptly in order to learn about their own Institutional Review Board requirements. It turned out that none of the three colleges that were involved in my research study had Institutional Review Board requirements. In addition, none of the colleges expressed any concern about my research, or asked me to submit any additional materials to what Oregon State University required in order to obtain any formal approval to conduct my research.

CHAPTER 4: FINDINGS

This section describes the data that was collected, the analysis that was done, and the results of the analysis. The method of research that I used to study the role that college presidents play in institutionalizing sustainability on community college campuses was multiple case study. This study involved visiting three community college campuses, which made up the cases, and collecting data, primarily through interviews, which was supplemented by review of documents related to sustainability on each campus and observations of the three colleges.

The data needed for this case study was dictated by the research questions and supported by the literature review. Therefore, data was needed that provided answers to the following three research questions:

1. What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard?
2. What are the important influences to achieving institutionalization of sustainability in community colleges?
3. What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect.

This section provides a profile of each of the three cases, followed by an analysis and findings of each case. A cross case analysis and finding is then provided. Lastly, this section concludes with a summary of findings.

Profile of Cases

This section provides a profile of each of the three cases and presents the six study participants interviewed for the study. This information was primarily gleaned from data collected at each of the three colleges, along with observations of each of the institutions. Table 1 represents a summary of the data presented in this profile of the study sites and participants. The purpose of this section is to provide the context in which the study was conducted, in keeping with an interpretive social science study.

The three colleges in this study represented a variety of college settings, such as rural versus urban, technical versus liberal arts, and small versus large. The

colleges selected for this study were located in different regions of the United States. The colleges and study participants in this study were assured a level of confidentiality. In keeping with the integrity of that obligation, study participants and the names of the institutions in which they work are intentionally not cited, nor are the locations of the colleges provided. Each college is designated a letter that identifies the institution (i.e., Case A College). For each of the cases, two interviews were conducted. One was with the college president, and one was with a sustainability champion. These champions had various positions within the college, but for the sake of this study, they will be referred to as the sustainability champion of each college (i.e., Case A College sustainability champion). Further, the quotes will be coded with the letter of the college (A, B, or C), and either a P, for president, or an S, for sustainability champion (for example, Case C College sustainability champion will be coded as CS). In addition, findings that were supported by documents collected in this study were not cited in order to ensure confidentiality for the participating colleges. These documents have been kept on file. Each document was identified by the letter assigned to the community college and the date of the document (i.e., Case A College, document, date of document). Table 1 provides a summary of the data presented in this profile of study sites and participants.

Case A College

Case A College was an accredited community college. It opened its doors in 1967 and currently enrolled 20,500 students each year. It was situated in an extremely rural area. Its main campus was composed of almost 1000 acres of rolling, treed land at the base of a mountain range. The buildings, roads, and service areas occupied about 250 acres, while the remaining acreage was designated as a wildlife refuge. In addition, the college had two extended campus sites.

The college was recognized nationally as a leader in sustainability in community colleges. In particular, it had been recognized for its efforts in energy conservation, sustainability education, student involvement, and green-building construction. The college spent \$7,000,000 in 2005 on a 900-kilowatt photovoltaic

solar array on its main campus which provided 30 percent of the college's power. The college planned to add enough panels in the near future to essentially take the institution off the grid, or as they put it, to be climate neutral by 2015. The college estimated that its investment in solar panels would save it \$25,000,000 in avoided costs over the course of 30 years.

Because the main campus was located six miles from the nearest town, the college owned and operated a bus service for its students. The bus system transported an average of 1,200 students a day.

Since 2002, the college intended building energy efficient buildings. Buildings currently under construction will be Leadership in Energy and Environmental Design (LEED) certified (the U.S. Green Building Council's rating system). Recently constructed buildings were even more efficient than their state's energy efficiency building code. There was even discussion about being involved in a new LEED Campus rating.

The college recently held its second annual national sustainability conference with over 200 attendees from across the country. The student government recently collaborated on a number of environmental projects, including classroom recycling, creek habitat restoration projects, and a new sustainability resource center. In addition, the student government recently collaborated with faculty in participating in the largest national teach-in in the country, Focus the Nation, which was a day of action focused on global warming solutions.

In terms of curriculum, the college had a large number of sustainability courses, along with a number of courses with sustainability themes. The college had articulation agreements with regional universities that offer four-year degrees in sustainability or a related topic. The college was developing a number of sustainability certificate programs and associate degrees.

In terms of community connections in sustainability, a local electric utility company recently presented a check to the college for \$78,000 for its energy conservation efforts. The college was involved in a number of service learning sustainability projects along with a large number of student organized sustainability events.

The president had been in position at the college for over 12 years and had previously served as president at several other colleges. The sustainability champion served as the director of the facilities department and held that same position for over 15 years.

Case A College was chosen for several reasons. It was one of the top three colleges in terms of number of nominations received from the 12 national sustainability authorities who submitted nominations for my study (once college districts were screened out, as I did not want to study a college district). In addition, it was widely known as a national leader in sustainability. As noted above, the president had been there for 12 years, well over the four-year selection criteria, which meant that the president had been instrumental in the establishment of the sustainability initiatives at the college. It also was primarily a liberal arts focused community college, which met the criteria for providing a variety of different college settings, as the other two colleges were more comprehensive in nature.

Case B College

Case B College was an accredited community college. It opened its doors in 1964 and currently enrolled 36,000 students a year, and served a 4,600 square mile area. It was considered a comprehensive community college. The college's mission was to:

be a learning-centered community college that provides affordable, quality, lifelong educational opportunities that include: professional technical and lower division college transfer programs; employee skill upgrading, business development and career enhancement; foundational academic, language and life skills development; lifelong personal development and enrichment; and cultural and community services. (Case B College, document, December 1, 2008)

Case B College had a sustainability core value:

Integrate practices that support and improve the health of systems that sustain life. Provide an interdisciplinary learning environment that builds understanding of sustainable ecological, social, and economic systems, concern for environmental justice, and the competence to act on knowledge. Equip and encourage all students and staff to participate actively in building a socially diverse, just, and sustainable society, while cultivating

connections to local, regional, and global communities. (Case B College, document, December 1, 2008)

The college opened a sustainability office in 2004, which was responsible for incorporating sustainability into college operations and curriculum. The college employed a full time sustainability coordinator, a full time energy analyst, and a recycling coordinator. The college recycled 60 percent of the college's waste stream, and estimated that this saved \$60,000 annually. The college placed a special emphasis on integrating green building practices into all construction and remodeling projects.

The college's energy analyst developed and executed energy conservation, cost-savings, and clean air strategies for the college's 1,000,000 square feet of instructional and operational space spread across 48 buildings on six campuses. Savings from energy conservation and management initiatives were used to purchase renewable energy and to fund additional projects. Ten percent of the college's electricity was supplied through wind power. In addition, the college had 3.5 kilowatts of student-installed on-site solar panels.

The college had a "Sustainability in Learning Group" which met regularly to incorporate sustainability into a broad spectrum of educational opportunities. Existing programs included two-year degree programs in energy management, renewable energy technology, and water conservation technology.

The college also had a learning garden, which was a student run organic garden. Students designed and prepared plots, fundraised, planted, nurtured, and harvested organic vegetables. Student volunteers then sold the produce to the college's Conference and Culinary Services for the campus culinary program, cafeteria, and conference center.

The president had been employed by the college for 14 years, and had served as president for eight years. The president had previously served in a variety of capacities at another community college. The sustainability champion served as the sustainability coordinator. The champion had held the same position for four years, and previously served as the recycling coordinator for five years.

Case B College was chosen for several reasons. It was the number one college in terms of number of nominations received from the 12 national sustainability authorities who submitted nominations for my study. In addition, it was widely known as a national leader in sustainability. The president had been there for 15 years, well over the four-year selection criteria, which meant that the president had been instrumental in the establishment of the sustainability initiatives at the college. It also was a rural comprehensive college, which differentiates it from one of the other colleges that was an urban comprehensive college, which met the criteria for providing a variety of different college settings.

Case C College

Case C College was an accredited community college. It opened its doors in 1964, served a 4,600 square mile area, and currently enrolled 36,000 students a year. It was part of a college district that served 275,000 students. It was considered a comprehensive community college. The main campus was 120 acres in size and contained 275,000 square feet of building space. It also had a second campus located on 56 acres and containing 125,000 square feet of building space. The college's stated values include learning, community engagement, excellence, innovation, collaboration, communication, integrity, and diversity.

The college's 2007-2012 strategic plan had seven goals, one of which had a sustainability emphasis. Goal number 4 stated, "Advance global learning and sustainability." The objectives of this goal included the following three items: (a) embed global learning and sustainability into the curriculum; (b) collaborate with external partners to support programs for a socially, environmentally, and economically sustainable society; and (c) examine current practices, as well as opportunities, to move the college toward highly sustainable, carbon neutral mode of operation and work with stakeholders and vendors aligned with principles of sustainability (Case C College, document, December 12, 2008).

Recently, with the college's lead, the college's district adopted a district sustainability resolution. It stated, in part, that the district and its colleges "are actively committed to sustainable stewardship of environmental resources and socially responsible practices." It further stated that the district "will pursue the

implementation of the three elements of sustainability: environmental responsibility, social equity, and economic viability. We will make decisions and take actions to satisfy our present needs without compromising the ability of future generations to meet their needs” (Case C College, document, December 12, 2008).

In May 2005, Case C College developed a college-wide, multi-disciplinary theme focused on sustainability. The college believed that this theme allowed it to leverage three forces to embed sustainability in the college culture: (a) curricular change and student engagement, (b) administrative support and operational change, and (c) master planning a more sustainable future.

In terms of curricular change and student engagement, the sustainability theme initiative encouraged curriculum to focus on social, environmental, and economic issues and promoted the college’s commitment to global learning. The acronym the college used for the sustainability theme emphasized the triad of sustainability, namely the social justice, environmental, and economic. The theme of sustainability provided faculty a common focus, provided students a focus for their advocacy, allowed what was happening with sustainability on campus to be used as real-life applications in the curriculum, and allowed the use of facilities staff as resources on panels, for interviews, and for class projects. The college was also in the process of exploring degree program opportunities that would articulate with the local state university’s new sustainability program and degree. The college also had a Global Learning and Sustainability Committee, made up of faculty, staff, students, and administrators. This committee worked on creating greater opportunities for curricular changes that infuse sustainability throughout students’ studies.

In terms of administrative support and operational change, the college was a charter signatory to the American College and University Presidents Climate Commitment. In addition, the college was committed to reducing greenhouse gas emissions with the goal of becoming carbon neutral within a defined period of time. Recently the college added the management position of sustainability coordinator. The college budgeted \$20,000 annually to the sustainability theme

college related events, and, in the most recent fiscal year, designated an additional \$29,000 towards sustainability.

The college had instituted a number of water and energy management initiatives. These included the utilization of low flow faucets in all the restrooms, xeriscape landscaping in the majority of campus locations, and the use of T8 fluorescent lamps and electronic ballasts in most locations. The college was also involved in a large scale commitment to protect the environment through energy efficient products and practices. These included the tracking of college energy performance using Energy Star tools, the development and implementation of plans to reduce energy consumption using Energy Star strategies, and the active education of students, staff, and the public about energy conservation. The college was partnered with their local utility to support renewable energy through their EarthWise Energy Program. This involved the college's commitment to use electricity from environmentally friendly technologies such as solar and wind energy.

In terms of master planning for a more sustainable future, all new college buildings will be LEED Silver certified. In addition, all current and future architectural and campus planning will focus on human friendly spaces that promote community while minimizing the impact on the natural environment. This included sophisticated lighting design that reduced energy demand and light pollution along with roofing and paving materials that reduced "urban heat island" effect. This also involved the use of recycled and locally-produced building materials.

The president had held that position at the college for six years and served within the college district for over 25 years in a variety of capacities. The sustainability champion served as the vice president of administrative services and had held that same position for eight years.

Case C College was chosen for several reasons. It was one of the top three colleges in terms of number of nominations received from the 12 national sustainability authorities whom submitted nominations for my study (once college districts were screened out, as I did not want to study a college district, and a

college on the east coast was screened out, as I did not want to travel so far). In addition, it was widely known as a national leader in sustainability. The president had been employed with the same college district for 25 years, and had served as president for six years, well over the four-year criteria. This meant that the president had been instrumental in the establishment of the sustainability initiatives at the college. It also was a college in an urban setting, which was different from the other two more rural colleges. This different setting met the criteria for providing a variety of different college settings.

Summary

The cases selected were all leaders within community colleges in a number of sustainable practices, including purchasing practices, landscaping, transportation, energy, dining services, and solid waste management. They had all taken action to add a sustainable component to their overall curriculum. All the cases had a president who had been there for at least four years. The cases were chosen to have a variety of different college settings, such as rural versus urban, technical versus liberal arts, and small versus large. The participants included the president of each community college selected, along with a sustainability champion. The sustainability champion held various official positions at each of the community colleges. Table 1 provides a summary of how each college met the primary and secondary criteria for this study, along with a profile of the participants.

Evidence of Soundness in Data, Analysis, and Interpretation

Four criteria were used to ensure the soundness of data: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability. Two forms of triangulation were used to ensure credibility in this study: (a) among different forms of data, and (b) among different sources of data. The forms of data were interviews, document analysis, and observations. The different sources of data were: (a) for the interviews: president and sustainability champion, (b) for the document analysis: written documents and online documents, including brochures, meeting minutes, and photographs, and (c) observations, which primarily involved walking tours of each campus. Where applicable information from observations

and institutional materials was compared to information given during interviews for consistency. For all of the interviews that I used in the research dissertation, I attempted to find documents that supported the interviewees' statements. When information was compared for consistency, and differences were found, I noted these differences in the research findings.

Table 1

Summary of the Profiles of Study Sites and Participants

Feature	Case A College	Case B College	Case C College
Location	Rural	Rural	Urban
Type	Liberal Arts	Comprehensive	Comprehensive
Age of institution	40 years	45 years	45 years
Headcount	20,500/year	36,000/year	36,000/year
Main campus size	900 acres	300 acres	120 acres
Important aspects of sustainability	Energy conservation, sustainability education, green building construction, 900 kw photovoltaic array provided 30% of college's power	Sustainability core value, sustainability office, full time sustainability coordinator, full time energy analyst, recycling coordinator	Strategic plan lists sustainability as one of seven goals, curriculum had sustainability theme, water and energy management initiatives
Location of sustainability champion	Director, Facilities Department	Sustainability Coordinator	Vice President, Administrative Services

Transferability refers to the degree to which information provided fits other cases beyond what is described in the particular study. To provide transferability in the study, the cases and study participants were carefully selected and diverse enough so that the research results could be applied to other community colleges. As described in Chapter 3, the case selection involved a thorough nomination and selection process to ensure that the selected cases included some of the leading community colleges in the country in terms of their leadership in sustainability. Likewise, the participant selection was designed to ensure that it included the top two people on the campus with knowledge concerning the role of a college

president in institutionalizing sustainability. In addition, the assumptions that were central to the research were provided, along with detailed descriptions of each case that was developed.

This study ensured dependability, the notion that information provided in the study is recognizable to those who are familiar with the context, by using quotes from the interviews wherever possible. The numerous uses of direct quotes in this study allows the intent of the interviewee to be examined by the reader of the study. I also referenced all of my interviews and uses of data so that my research is available to be checked in the future, if requested.

Finally, member checking was used to ensure confirmability. Informal on the spot member checking took place with each study participant. Approximately four weeks following the interviews, interviewees received a typed transcript of the interview. Upon receipt of the transcript, the researcher contacted interviewees by telephone and/or e-mail to clarify or verify or expand upon transcribed information from the interviews. Of the six interviewees contacted, one responded that the transcript was “accurate as written” (CS, personal communication, March 9, 2008), two provided very minor edits, one offered to send written edits which I never received, and two did not respond to multiple requests for feedback. I did not follow up with the interviewee who said they would send written edits.

Findings in Response to Research Questions

The following section provides my findings in response to the three research questions. For each research question, I reviewed the interview transcripts, documents (including photographs), and my observations to determine themes that emerged. The organization of this section is divided into the three research questions, and, under each research question, I first present a thematic analysis of the data from each case in response to the research question. Lastly, I provide a cross case analysis and overall summary for each research question.

Research Question 1: Meaning of Institutionalized Sustainability

The following section provides a description of the findings in response to the first research question, “What does it mean to have sustainability ‘institutionalized’ at community colleges that are judged to be exemplary in this

regard?” The first part of this section is organized by the three cases, which are used as headings.

Case A College Analysis

My analysis resulted in five prominent themes at Case A College concerning the meaning of having sustainability institutionalized: (a) widespread use of sustainability practices, (b) sustainability incorporated across the curriculum, (c) frequent assessment of sustainability impact, (d) knowledge of sustainability by leaders, and (e) extensive student involvement in sustainability activities. The following analysis is provided using a heading for each of the five themes.

Widespread use of sustainability practices. A significant theme that emerged from the interviews and the supporting documents and observations concerning institutionalization for Case A College was the widespread use of sustainability practices. Sustainable practices are defined as practices that address sustainability and are applied in many different aspects of the college’s operation (i.e., purchasing, landscaping, transportation, energy, dining services, and solid waste management) (Keniry, 1995). Some examples of sustainable practices are the purchasing of recycled copier paper, landscaping in an arid climate with plants that require little water, a transportation plan that includes a free bus service, and the installation of energy efficient light bulbs throughout campus. For Case A College, sustainable practices were primarily exhibited through activities related to energy conservation, water conservation, and building practices as described more specifically below.

In terms of energy conservation, the college spent \$7,000,000 in 2005 on a 900 kilowatt photovoltaic solar array on its main campus which provided 30 percent of the college’s power (Case A College, document, November 17, 2008). According to the college, it was the second largest solar array located at a community college in the country (see Figure 3). The college planned to add enough panels in the near future to essentially take the institution off the grid by 2015, which means that they would provide all of their own energy generation and would not be reliant on the local utility company for energy resources. The Case A College sustainability champion explains:

The thing I've learned over the last few years is that a clearly sustainable project makes the most economic sense. You have to have the long-term view on what you're doing. We really try to stay away from the temporary stop gap measures for expending funds and make something that's going to last a long time. The payback: we're launching the second phase of solar, and it's going to cost us \$9 million over 20 years, that includes interest on the loan. It flatlines our utility payments, and solar payments are finished and clear and after 20 years we own the system. The viability of the system is about 40 years. In 20 years time, it saves us over \$15 million. The savings are greater than the ongoing business as usual costs. That's a sustainable effort. To continue paying year after year and not doing things, that's not a sustainable methodology. (AS, personal communication, November 17, 2008).



Figure 3. Case A College solar panels.

Another sustainability practice at Case A College was focused on water conservation. The sustainability champion described how the college had its own wastewater treatment plant, its own storm management plan and controls, its own wells, and its own water system (AS, personal communication, November 17, 2008).

Green building construction was another area of sustainability practices for Case A College. Green building, also known as sustainable building, refers to the efficient use of resources, including energy and materials, in the design and construction of a building. Since 2002, according to the sustainability champion, Case A College was intent on construction with green building standards. Buildings currently under construction (at the time of the research study) will be LEED certified, while recently constructed buildings were even more efficient than their state's energy efficiency building code. For example, the buildings had even higher rated efficiency in their wall insulation construction than required by the state's building code (AS, personal communication, November 17, 2008).

The widespread implementation of sustainability practices was very evident on visiting the Case A College campus. One example of Case A College's widespread use of sustainable practices was their very fancy 16-page color brochure (printed on recycled paper) that emphasized and outlined their national leadership in sustainability in community colleges (see Figure 4). The brochure was exhibited prominently around campus, including in the president's office. As described above, another example of the widespread implementation of sustainability practices was the college's national recognition concerning energy conservation practices. This recognition was apparent as soon as I arrived at the campus. The college's solar array, which was visually impressive, was quite noticeable as a visitor circled the campus on the prominent access road. In addition, I observed a very active local bus service, which I was later told was the result of a transportation plan with the local transit authority to benefit the students and provide efficient means of transportation. (AS, personal communication, November 17, 2008). Public transportation, such as a bus service, is commonly considered to be a much more sustainable method of transportation than individual automobile use.

Sustainability incorporated across the curriculum. The meaning of having sustainability institutionalized at Case A College was shown by the breadth and depth of the way that sustainability was incorporated across the curriculum. When

asked, “How has sustainability been applied into the learning experience at Case A College,” the president replied:

We’re taking sustainability concepts and infusing them into the curriculum. For instance, if you’re in a history class, there may be a component on sustainability such as the history of sustainability and what it means. If you’re in an English class, there may be an assignment requiring the student to write a paper on something related to sustainability. So it’s been infused into a good number of classes that way. (AP, personal communication, November 17, 2008)



Figure 4. Case A College sustainability brochure, internal pages.

In addition to applying sustainability broadly throughout the curriculum as the president discussed above, the college offered both a certificate in sustainability and an Associate of Science (AS) degree in Sustainability. The latter degree was articulated with several regional state four-year colleges (Case A College, document, November 17, 2008). The interviewees described the partnerships with the local colleges as being important to the institutionalization of sustainability at the college. The reason these partnerships were significant to the

institutionalization of sustainability was that they provided validation to the community college's incorporation of sustainability across the curriculum by essentially giving more value for the students, as they were able to proceed to a four-year degree in sustainability.

The previously described 16-page sustainability document provided several well-organized pages emphasizing the "Programs and Curriculum." This document listed the "Sustainability Course Offerings," with 22 courses listed, and the "Course Offerings with Sustainability Themes," with 19 courses listed (see Figure 2). In addition, it listed a handful of sustainability course articulation agreements with local university programs, eight certificate programs in development, six existing associate degrees, eight associate degrees in the development stage, and six sustainability workshops (Case A College, document, November 17, 2008).

The president also emphasized the learning about sustainability that takes places outside the classroom. The president stated:

Then, of course, just being on campus. We're putting up signs so that people can look at the solar array and see what that means. We're talking about giving preferred parking to people who have sustainable cars that are much better for emissions. Those kinds of things are all learning opportunities. All of the recycling you see around campus may not be specifically in the curriculum, but it is part of the learning experience. In our cafeteria we use the little plastic cups that are made of corn syrup for students. They biodegrade in 180 days I think it is. All of those things that you see are learning experiences for students. (AP, personal communication, November 17, 2008)

Later in the interview the Case A College president further emphasized the breadth of the institutionalization of sustainability into the curriculum, saying:

I think what's most important is to get it into the curriculum in the areas where it does make sense, where students will have an opportunity to write papers or learn what sustainability is about without having it in every single thing. As long as they get it along the way somewhere in their experience here. I don't get too upset by the fact that not everybody is going to have it in their curriculum. I think as long as we can assure that students, when they get to the other side of whatever they're here for, have had exposure to it in one way or another, that'll be pretty good. (AP, personal communication, November 17, 2008)

The incorporation of sustainability across the curriculum through numerous classes, through certificate and degree programs, and inside and outside of the classroom, indicated that sustainability was institutionalized in the curriculum in both breadth and depth at Case A College. The breadth of institutionalization in the curriculum was from the wide assortment of ways that it was incorporated in the learning environment (i.e., numerous variety of classes, both inside and outside the classroom). The depth of institutionalization in the curriculum was in the form of a number of certificate and degree programs that incorporated sustainability and that were in partnership with four-year colleges giving added opportunities for longer-term programmatic study.

Frequent assessment of sustainability impact. Data analysis indicated that Case A College had been actively engaged in frequently assessing their level of sustainability. The college had completed assessment data gathering surveys concerning several areas of the college's operations such as sustainability awareness, transportation, green jobs, and carbon emissions and for a variety of college purposes.

The college gathered data concerning sustainability as part of their periodic ten-year accreditation data gathering process. One of the pertinent questions concerning sustainability on a Fall 2007 accreditation study that was asked of students was, "I am aware of the 'sustainability' efforts being made by (Case A) College (e.g., Green Buildings, solar power, recycling, etc.)." Seventy percent either strongly agreed or agreed with this statement (AS, personal communication, November 18, 2008; Case A College, document, November 18, 2009).

During the last several years, the college conducted an Ecological Footprint Assessment, a Greenhouse Gas inventory, and an environmental impact energy assessment (Case A College, document, April 6, 2009). An ecological footprint assessment estimates the area of land and ocean required to support an individual or organization's consumption of resources. The purpose of conducting these environmental assessments was to gather data in order to meet the objectives of one of the college's five initiatives in their 2007-2012 strategic plan titled modeling sustainability. The modeling sustainability initiative stated:

The college promotes the best possible outcomes for its human and natural environments. This includes approaching the college curriculum, student and civic engagement and college practices in ways that meet current needs while ensuring similar resources will be available in the future. (Case A College, document, November 18, 2009)

The statement above concerning “college practices” addresses the need for assessments, which allow the college to better understand their current sustainable practices and then to make informed decisions about sustainability.

The Case A College president commented on the energy assessment and how that information was used. The president explained that Exxon came in and did an energy assessment, and stated, “The information we got from them has helped us make some of the changes we wanted to make” (AP, personal communication, November 18, 2008). According to the previously described Case A College sustainability document prominently displayed around campus, this information was used to make a number of decisions. These decisions included adding 2 ½ to 3 megawatts of solar power to their already existing photovoltaic system, improving the HVAC and lighting occupancy sensors in classrooms and offices, water and lavatory sensors, and more efficient lighting throughout campus. One example of more efficient lighting concerned the plan to replace fluorescent lighting with light-emitting diode lighting, more commonly known as LED lighting. LEDs are advantageous over more traditional light sources because they provide lower energy consumption and longer lifetime, thus decreasing the life cycle cost compared to fluorescent lights.

The greenhouse gas inventory provided detailed information concerning the amount of greenhouse gas emissions that were occurring on the campus by source. Greenhouse gases refer to the gases in the atmosphere that absorb and emit radiation, and are generally considered to contribute to global warming. The gases include water vapor, carbon dioxide, and methane. An example of the greenhouse gas data collected by Case A College and the way that it was presented is shown in Figure 5. The pie graph represents the green house gas inventory conducted in 2006 showing which sources contributed on campus to a total of 12,812 metric tons of emissions for the campus.

The use of sustainability assessments provided the college with data for decision-making purposes, allowing administrators and faculty to make informed decisions about sustainability. For example, assessment data allowed them to move forward on the installation of additional solar panels and allowed them to make decisions about more efficient lighting on campus.

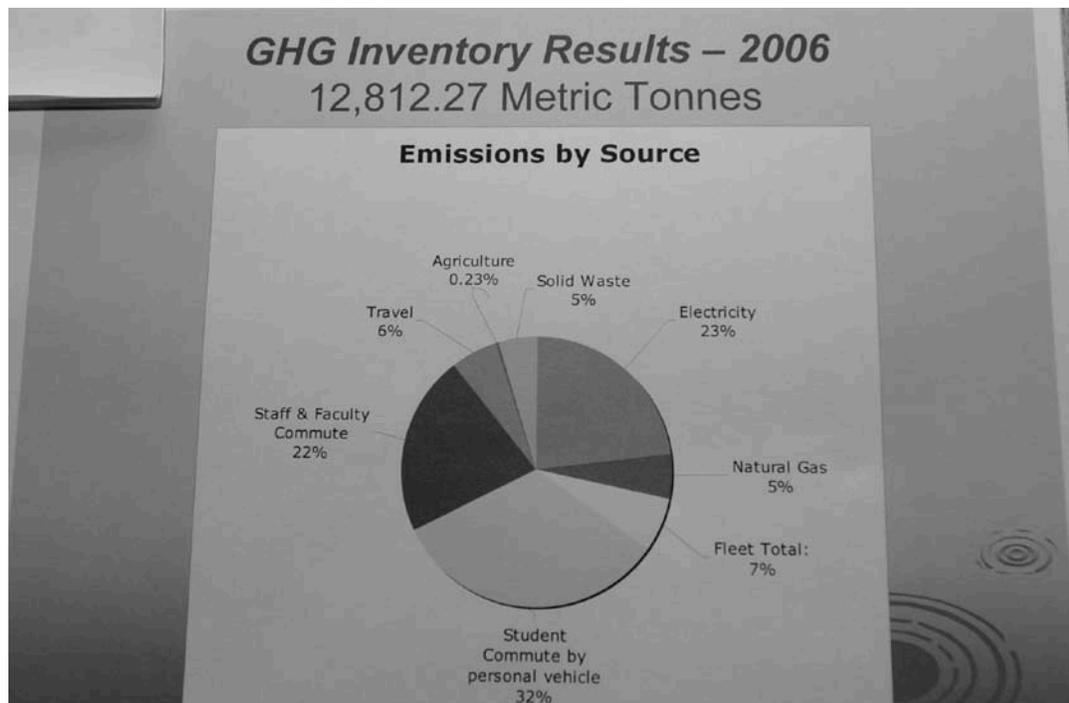


Figure 5. Example of Case A College greenhouse gas data presentation.

Knowledge of sustainability by leaders. Both the president of sustainability champion of Case A College demonstrated a significant knowledge of sustainability. My first question of my interview with the president of Case A College was, “Could you tell me what your understanding or your definition of the term sustainability is?” The president’s response demonstrated a solid understanding of sustainability:

Sustainability is making sure that we do everything we can to sustain what we have for future generations. That can be environment, economy, society - you can describe it however you want. We initially took the more narrow view around here of the environment and what that meant to us. But as we

expand out, it tends to draw many other areas in and becomes a lot larger. When we look at it now, we're looking at our environment. We're also looking at being able to develop programs and classes that will help society and the workforce to be able to go out and in turn be more sustainable. But it really is protecting what we have - all of our resources - to be able to help future generations have the lifestyle we have (or somewhat better) by protecting what we have. (AP, personal communication, November 17, 2008)

The sustainability champion had both an excellent working knowledge of sustainability concepts, but also a deep history of knowledge concerning sustainability, as demonstrated by this statement:

I'm old enough to remember the 70's and the environmental movement and "Silent Spring" by Rachel Carson. It was probably somewhat jaded that we kind of ignored that for a period of time. Now it has come back around, so there's hope for the future. And it seems to be a huge groundswell right now. I certainly understand it with the economics of oil and the economics of peace on a global scale. It's not trite, although it sounds that way. "Think globally-act locally" really has new meaning. (AS, personal communication, November 17, 2008)

Extensive student involvement in sustainability activities. The involvement of students in sustainability activities emerged as a significant theme at Case A College. Extensive student involvement in sustainability activities refers to student engagement in some aspect of sustainability on campus, such as accepting a graduation commitment to pursue a green environment or actively participating in sustainability activities on campus, such as participating in a sustainability conference. In describing the importance of student involvement in sustainability activities, the president said:

Working with the students is critical, because they're the ones who are going to keep this whole movement alive. I feel like they're the future of bailing us out of this. We kind of got ourselves into this. We need to be the role models to get ourselves out. If they're passionate about it, and they can apply some of the things they learn to their everyday lives. We even have a commitment that they can choose to sign at graduation stating that wherever they go when they leave us they'll try to make it a more green environment. (AP, personal communication, November 17, 2008)

In support of student involvement in sustainability activities, the college had a sustainability resource center, ten recent student organized sustainability events,

and five student sustainability related clubs and groups. The sustainability resource center, funded by the associated students, had a wide variety of books, journals, magazines, and general information in support of sustainability. The sustainability events included an Energy Awareness Fair, Campus Sustainability Day, Greendance Film Festival, Campus Clean-up, Earth Day Festival, workshops, film series, and an annual sustainability conference (Case A College, document, November 17, 2008) (see Figure 6). The clubs and student groups included the Student Alliance for Sustainability, Associated Students, Students in Free Enterprise, Phi Theta Kappa, and Friends of the Refuge. The Student Alliance for Sustainability's web site described the organization as follows: "We are an umbrella organization for student groups at (Case A College) with an interest in social, economic, and environmental sustainability" (Case A College, document, July 4, 2009).

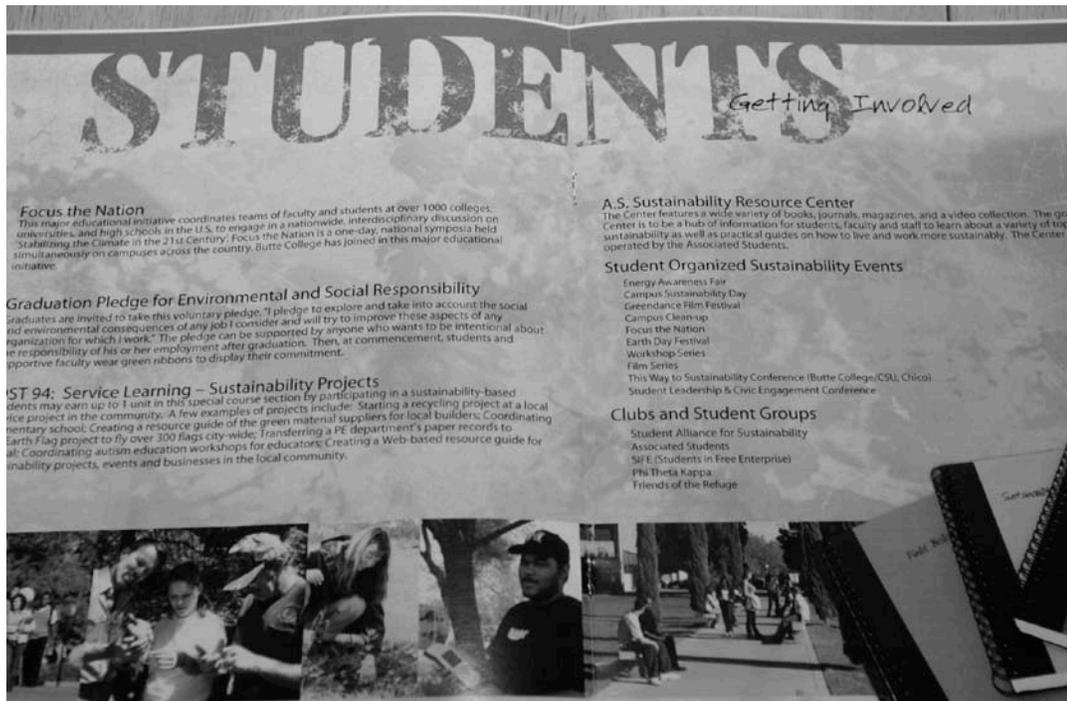


Figure 6. Example of Case A College student sustainability involvement brochure.

As the president stated earlier, Case A College had a unique graduation pledge for environmental and social responsibility. Graduates had the option of taking a voluntary pledge that stated, “I pledge to explore and take into account the social and environmental consequences of any job I consider and will try to improve these aspects of any organization in which I work” (Case A College, document, November 17, 2008). During commencement students and supportive faculty wore green ribbons to display their commitment to this pledge. In 2009 approximately 30 students out of a graduating class of approximately 930 graduates took this pledge (Kelly Munson, personal communication, July 19, 2009).

Students were involved in sustainability activities in a number of ways at Case A College. They were involved in a sustainability resource center, they participated recently in ten student organized sustainability events and in five student sustainability related clubs and student groups, and they took a graduation pledge for environmental and social responsibility.

Summary. In summary, the findings of the case analysis of Case A College concerning the first question, “What does it mean to have sustainability ‘institutionalized’ at community colleges that are judged to be exemplary in this regard?” were the identification of four themes: (a) widespread use of sustainability practices, (b) sustainability incorporated across the curriculum, (c) frequent assessment of sustainability impact, (d) knowledge of sustainability by leaders, and (e) extensive student involvement in sustainability activities. These themes are listed in Table 2.

Table 2

Themes Describing the Meaning of Institutionalized Sustainability Identified at Case A College

-
- *Widespread use of sustainability practices*
 - *Sustainability incorporated across curriculum*
 - *Frequent assessment of sustainability impact*
 - *Knowledge of sustainability by leaders*
 - *Extensive student involvement in sustainability activities*
-

Case B College Analysis

The following section continues with the development of emerging themes, now for Case B College, based around the first research question, “What does it mean to have sustainability ‘institutionalized’ at community colleges that are judged to be exemplary in this regard?” The following themes emerged from the interviews, observations, and supporting documents concerning institutionalization: (a) widespread use of sustainability practices, (b) sustainability incorporated across the curriculum, (c) assessment of sustainability impact, and (d) knowledge of sustainability by leaders.

Widespread use of sustainability practices. Both the Case B College sustainability champion and president emphasized the widespread use of sustainability practices on the Case B College campus. Case B College incorporated sustainability initiatives through their conservation program, recycling program, water conservation program, academic classes, and their sustainability policies. When the president was asked, “What is your sense of the concept of institutionalization of sustainability at a college campus,” the president’s response was, “Well, it’s just a way of being. It’s the way we do our work.” I then asked a follow up question, “How does that come about on a college campus?” The president responded, “Through education, through modeling, reminding people, and trying to put systems in place.” The president later emphasized this point concerning institutionalization of sustainability when responding to a question about the level of institutionalization of sustainability at Case B College:

There’s always work to be done, but the thing that I feel very excited about at (Case B College) is it’s not just an operations thing, it’s not just a faculty thing, it’s not just a management thing, it’s not just a student thing. Every employee group is thinking about what they can do. Across disciplines, in learning communities and that kind of thing, people are thinking across instruction about what kinds of things they can offer. It’s vertical, it’s horizontal, it’s intertwined, and I think that’s a good indicator that it’s taking hold and it’s probably not going to go away no matter who is here. (BP, personal communication, December 1, 2008)

The sustainability champion discussed the breadth of sustainability practices when the champion stated, “We have a pretty strong energy conservation

program, recycling program, water conservation program. We have some sustainability policies that help us move forward in those areas, including a building designing/construction policy that says we'll do LEED certification" (BS, personal communication, December 1, 2008). As explained earlier, LEED certification refers to an environmentally sustainable construction standard.

In a succinct, professional, and informative sustainability tri-fold brochure, which was available at a number of places on campus, the widespread use of sustainability practices were outlined (see Figure 7). The brochure was titled "Sustainability at (Case B College)," with a subtitle, "Conservation, Recycling, Energy Management, Learning." In addition to covering the categories listed in the brochure subtitle, it also covered green building and operational practices, the learning garden, the college's sustainability core value, and its award winning sustainability office.

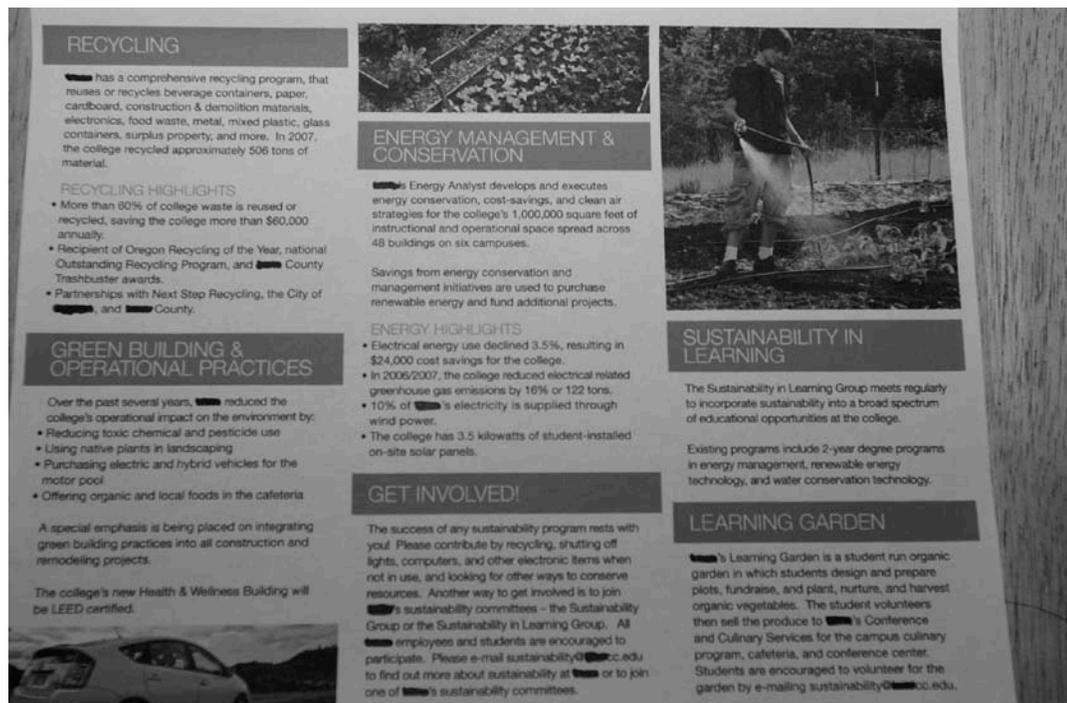


Figure 7. Case B College sustainability brochure.

When I visited the Case B College to gather data, the high level of sustainable practices was very noticeable. No matter where you wandered on

campus, the recycling program was prevalent, as signs and containers were everywhere. In the sustainability tri-fold brochure described in the previous paragraph, Case B College discussed how more than 60% of the college's waste was reused or recycled, which in turn saved the college \$60,000 annually. It was estimated that in 2007 the college recycled approximately 506 tons of material (Case B College, document, December 1, 2008).

Another sustainability practice at Case B College that was quite noticeable concerned transportation. I arrived on campus from my lodging via the local city's public bus system. The loading and unloading site on campus was well integrated with the rest of campus in terms of both convenience and aesthetics. The college had a transportation demand management plan, which included bus passes for students that were funded by a mandatory student fee. In addition, the college's fleet vehicles were largely made up of alternative, or energy-efficient, vehicles (Case B College, document, December 1, 2008).

Case B College also had a learning garden and learning garden student club that managed the garden (see Figure 8). The learning garden club was a student organized and operated group dedicated to growing organic produce on campus. The Learning Garden Club website used the slogan "students cultivating sustainable solutions." A Case B College brochure described the club focus as follows:

We focus on educating fellow students about the value of local, sustainable food systems. The garden is designed as a living laboratory that demonstrates the connections within human and natural systems. We strive to help people understand how their food choices can impact their personal health, environmental integrity and the well-being of the community. (Case B College, document, May 27, 2009)

The garden produce was sold to the college's Conference and Culinary Services that in turn used it for the campus culinary program, cafeteria, and conference center (see Figure 9).

The meaning of institutionalization at Case B College as it pertains to the widespread use of sustainable practices was well summed up by two quotes by the president. At one point, the president described the institutionalization of



Figure 8. Case B College learning garden.



Figure 9. Case B College produce from the learning garden.

sustainability at the college as a “way of being,” and later described the institutionalization of sustainability as, “it’s vertical, it’s horizontal, it’s intertwined” (BP, personal communication, December 1, 2008). The institutionalization of sustainability certainly seemed intertwined based on observations while walking around campus during my visit. Sustainability practices were prevalent across campus, as they were addressed through energy conservation and management practices, a significant recycling program, water conservation practices, green building initiatives, sustainability policies, and the learning garden.

Sustainability incorporated across the curriculum. The importance of incorporating sustainability across the curriculum was evident at Case B College. The sustainability champion explained some details about the incorporation of sustainability into the curriculum:

We have several classes that are specifically about sustainability, like an Introduction to Sustainability class, and a Climate Change class, and a Global Health class. And then we have a lot of classes that aren’t specifically about sustainability, but have used sustainability concepts. A few years ago, we were able to get an internal grant to distribute funds to faculty for infusing their classes with sustainability. So we had people from Math and Culinary Arts and from all around the campus making fairly small changes to their classes to infuse sustainability concepts. This last year, we got an Environmental Protection Agency grant to train people to infuse sustainability into their classes. (BS, personal communication, December 1, 2008)

In addition to the information above concerning curriculum, the college also offered three sustainability-focused two-year degrees. One was in Energy Management, one was Renewable Energy Technology, and the last one was Water Conservation Technician. The college also offered a number of classes in which students learn sustainability concepts, such as Introduction to Sustainability, Global Health, Global Climate Change, Environmental Science, and Global Ecology (Case B College, document, December 1, 2008).

As part of the Science Division, Case B College also houses a regional energy education institute. This institute “offers both standard and custom learning opportunities throughout the (region) for practicing professionals in the energy

industry, including an energy management certificate program” (Case B College, document, December 1, 2008). Founded in 1998, and guided by a regional advisory board, past participants included technicians, contractors, engineers, architects, consultants, utility personnel, and energy managers. In addition to the two-year degrees listed above, the energy education institute also offered certificate courses in Energy Management, Building Operator, Sustainable Building Advisor, and (regional energy agency) Residential Auditor and Inspector.

During my interview with the Case B College president, it was evident that the president was both attuned to the connection between curriculum and sustainability, and also passionate about that connection. One example of this connection and passion was during the president’s response to my inquiry concerning the president’s sense of the level of sustainability at the college. The president stated:

I’d really like to see us have a Peace Center at (Case B College). That really resonated. It became obvious that the sustainability work and the peace work are very intertwined. When you look at climate change and what is happening globally with hunger and rising seas and what will happen with the displacement of humans. When there’s a shortage of things and how that leads to conflict. All of that is really intertwined so there’s a whole other group working on the Peace Center, many of whom are already working on sustainability. They’re just making the connections. (CP, personal communication, December 1, 2008)

The meaning of the institutionalization of sustainability was evident in the way sustainability was incorporated across the curriculum at Case B College. This was shown by both the way sustainability concepts were incorporated in classes across campus, offerings of classes that were specifically focused on sustainability, and also by the three sustainability-focused two-year degrees, one in Energy Management, one in Renewable Energy Technology, and one in Water Conservation Technician. The institutionalization was also demonstrated by the regional energy education institute, which offers two-year degrees along with four sustainability certificate courses.

Frequent assessment of sustainability impact. The value of doing an assessment of sustainability was another theme at Case B College. The Case B

College sustainability champion stated that the college did an environmental impact report based on a sustainability assessment toolkit created by the Good Company. Good Company's web site states that their campus sustainability assessments "provide meaningful snapshots of campus performance that include stakeholders, reduce costs, increase effectiveness of planning and communication, and align values with actions" (Good Company). At the time of the interview they were also doing an assessment with a tool called STARS. Sustainability Tracking, Assessment & Rating System (STARS) is a "voluntary, self-reporting framework for gauging relative progress toward sustainability for colleges and universities" (AASHE) provided by the Association for the Advancement of Sustainability in Higher Education. In addition, Case B College found value with the American College and University Presidents Climate Commitment, which provided an assessment tool. This assessment tool, available from the American College and University Presidents Climate Commitment organization, is a methodology and calculator for conducting a campus greenhouse gas emissions inventory. As part of this assessment process, Case B College conducted and submitted a greenhouse gases assessment report, which provided data concerning how much greenhouse gases the college produced (Case B College, document, November 26, 2008).

Case B College explained in one of their documents the commitment to reducing greenhouse gases:

(Case B College) has a strong commitment to becoming carbon neutral and to helping to educate the next generation of leaders about the importance of reducing greenhouse gases. (Case B College) is a signatory of the American College and University Presidents Climate Commitment. As a signatory, (Case B College) is committed to become carbon neutral. (Case B College, document, June 30, 2009)

Carbon neutral, also known as having a net zero carbon footprint, refers to having zero net carbon emissions by balancing the amount of carbon released with an equivalent amount of offset. The offset can occur from renewable energy that creates a similar amount of useful energy as that burned to create the carbon or by paying others to remove or sequester their carbon emissions (Martin, 2006).

From 2003 to 2007 Case B College conducted annual environmental impact reports. During this time, one detailed environmental impact report that was conducted was an energy indicator report. The intent of the report, as stated on the report cover sheet, was to “Encourage energy efficiency. Facilitate action by ensuring that (Case B College) collects and reports information on its own energy use practices” (Case B College, document, June 16, 2009). The report was extremely detailed, and included information concerning energy use per building, carbon dioxide emissions from campus, types of fuel used, tracking information, and monthly energy costs. In addition, it included detailed information concerning efforts underway to conserve energy on campus, and recommended strategies for improving performance in energy efficiency throughout campus. Case B College also conducted annual reuse and recycling summaries. The college also conducted a water indicator report, with the stated intent to “encourage efficient water use. Ensure that the institution collects and reports information on its own water use practices in ways that facilitate action” (Case B College, document, June 16, 2009).

The part of the stated intent above, which says to “facilitate action,” gets to the heart of the apparent purpose of Case B College’s sustainability assessments. The college appears very intentional about their sustainability efforts. The college leaders appear to understand the need to have good quality data concerning sustainability efforts, so that they can make decisions about the future, and so that they can aggressively move forward on sustainability initiatives.

In summary, Case B College conducted annual environmental impact reports from 2003 to 2007, and recently conducted assessments as part of their Presidents Climate Commitment. The college also conducted recent recycling summaries and water indicator reports. The various sustainability assessments appear to be intended to provide quality data concerning sustainability efforts so that they can be intentional about future decisions.

Knowledge of sustainability by leaders. Both the president and the sustainability champion of Case B College exhibited a solid knowledge of sustainability concepts. During my interview with the president, my first question

was, “Could you tell me what your understanding of the term sustainability is?”

The president’s answer showed a deep knowledge of sustainability:

When I think about sustainability, I guess the shorthand way of talking about it is the triple bottom line. So it’s certainly to do with the environment: environmental sustainability. But it’s also to do with economics: fiscal sustainability. And then social justice: social sustainability. So I don’t see it as being one or other of those, I think you have to look at all three of those as if they’re inextricably linked because they’re all part of a larger system. If you just focus on one without focusing on the impact.... I mean, if you just focus on environment without thinking about the impacts on the economy or society generally you could go down a path that you don’t want to go down. So you kind of have to have the three suspended in front of you so when you move one you’re also thinking about the impacts on the other two. (BP, personal communication, December 1, 2008)

The sustainability champion responded to the same question concerning their understanding of the term sustainability as follows:

In a global view, my understanding is using resources in a way that they won’t be depleted and they’ll be available in just as plentiful amounts, if not more plentiful, for future generations. How I am trying to implement sustainability from a college point of view is continually working on making the college have less and less of a footprint so that we’re using fewer resources, recycling more, and emitting less carbon. Also teaching students about what we’re doing and why and hopefully getting them involved and engaged. (CP, personal communication, December 1, 2008)

Summary. The case analysis of Case B College concerning the first research question identified four themes, which were: (a) widespread use of sustainability practices, (b) sustainability incorporated across the curriculum, (c) frequent assessment of sustainability impact, and (d) knowledge of sustainability by leaders. These themes are listed in Table 3.

Table 3

Themes Describing the Meaning of Institutionalized Sustainability Identified at Case B College

-
- *Widespread use of sustainability practices*
 - *Sustainability incorporated across the curriculum*
 - *Frequent assessment of sustainability impact*
 - *Knowledge of sustainability by leaders*
-

Case C College Analysis

As I looked at the emerging themes around the first research question for Case C College, I continued to identify most of the same themes as those that emerged for Case A College and Case B College. This section is organized around the emerging themes and provides a heading for each of those themes.

Widespread use of sustainability practices.

A good overview of the widespread use of sustainability practices at Case C College was provided on Case C College's web site under the title of green initiatives. These green initiatives were listed under four categories: (a) water conservation, (b) energy management, (c) recycling and biodegradable products, and (d) new building development (Case C College, document, August 29, 2008).

Under energy management, the web site described how the college campuses "utilize computer based energy management systems to improve the daily control of air conditioning and lighting at the campuses. All campuses also utilize T8 lighting in the majority of the interior spaces" (Case C College, document, August 29, 2008). The web site described how "this type of lighting delivers a desirable color temperature, while conserving significant levels of energy." Concerning green energy sourcing, the sustainability champion stated, "We now source 15% of our total power consumption via green power" (CS, personal communication, December 12, 2008).

When I conducted my interview with the sustainability champion, I was fascinated to see the unique lighting technology in his office. He had an opaque skylight in his office that provided adequate natural lighting year round during most of the time that he used his office. One unique aspect of this lighting technology was that with a wall switch he could control how much light was allowed into the office through the skylight. This technology seemed indicative of the college's widespread commitment to sustainability practices.

Another aspect of the sustainable practices theme that emerged from the interviews and supporting documents concerned water conservation, which Case C College had listed as one of their green initiatives. Case C College was located in a

very arid climate that provided incentive for water conservation since water was a limited resource in the region (see Figure 10). The college's web site stated:

The (main) campus is connected to a reclaimed water system that is supplied by the (local city). Reclaimed water is a non-potable form of water that the city processes, and then distributes for landscape irrigation. This is water that has gone down the drain through the city systems, is processed, and redistributed for utilization in landscape irrigation. Waterless urinals have been installed in all of the (main) campus restrooms. Low flow/limited flow plumbing fixtures are also utilized in all (Case C College) restrooms. In addition, xeriscape plants and trees are featured in the majority of locations at all campuses (see Figure 11). Xeriscape practices conserve significant quantities of landscape watering by utilizing native desert specimens” (Case C College, document, August 29, 2008).



Figure 10. Reclaimed water sign on the Case C College campus.

The third green initiative that the college listed, and was considered a part of the sustainable practices theme, was recycling and biodegradable products. The college web site stated:

The (Case B College) campuses recycle virtually all paper products for post-consumer processing. (Case C College) has also expanded its recycling program to include aluminum cans and plastic bottles. All routine custodial cleaning products in use at (Case C College) campuses are biodegradable. (Case C College, document, August 29, 2008)

Recycling bins were prevalent throughout campus (see Figure 12).



Figure 11. Xeriscape plants on the Case C College campus.

The last of Case C College's four stated green initiatives was new building development. As the college develops new campus buildings, it planned to focus on the LEED standard for green building. I think these four green initiatives showed the breadth and depth of Case C College's widespread use of sustainability practices.

In summary, the widespread use of sustainability practices was summarized well in Case C College's four green initiatives: (a) water conservation, (b) energy management, (c) recycling and biodegradable products, and (d) new building

development. Water conservation practices were evident through the reclaimed water system and the use of xeriscaping. Energy management was evident by the use of efficient lighting and the use of green power for some of their demand needs. The campus had a strong recycling program, and all of their new buildings were scheduled to be LEED certified.



Figure 12. Recycling bin on the Case C College campus.

Sustainability incorporated across the curriculum. The incorporation of sustainability across the curriculum appeared to be an important theme at Case C College. The president described a theme approach to integrating sustainability into the curriculum as follows:

One of our faculty members coined a term (that emphasized the) social, economic, and environmental. And that's how they incorporated it from the student standpoint, a themed approach whereby many different employees - faculty members - could use this... theme with our students and kind of get some energy around incorporating sustainability into the curriculum. (CP, personal communication, December 12, 2008)

The sustainability champion explained how this theme works:

One of the principle ways that we've tried to bring this commitment to sustainability across the college in our academic endeavors is through a one-book concept. We pick a book every year - the Global Learning and Sustainability folks debate and select the book - and then we get as many faculty as we can get to adopt that as part of their course. Thirty percent of our faculty embrace that one-book concept. (CS, personal communication, December 12, 2008)

The sustainability champion went on to explain what books the college used the first two years of the program, and what activities were incorporated around those books:

The first one-book three years ago was *Fast Food Nation*, Eric Schlosser's book about the industrialization of our food production endeavors. If you're a history faculty and you've adopted that book, you have a subject-specific view in. So you look at the history of how we've made food over the years - that kind of thing. Depending upon your discipline, it's sometimes easy, it's sometimes more difficult. But they're very creative in figuring an avenue in to the conversation. We have lots of people across the college - faculty and students alike - reading *Fast Food Nation*. Then we base a whole bunch of co-curricular activities on it throughout the year. We'll have a local foods fair, for example. That happened to be one of the events connected to *Fast Food Nation*, and we invited all kinds of organic growers right in our community. It was great and a very vibrant thing. Everybody brought organic food and certainly raised our awareness of how strange it is to buy tomatoes at Safeway that originated in Chile. It culminated with bringing Eric Schlosser to the college for a big daylong event. He did a speech and presentation in our Performing Arts Center. I think it was the biggest event we've ever had at the college. The Performing Arts Center was filled to capacity. We had it on video boards in our student center for an overflow crowd of a couple hundred. So it really had a lot of energy behind it. The second year we did Elizabeth Royte, a book called *Garbageland*. And we had Elizabeth come to visit us as well. To bring authors like that, where it will cost \$8,000-\$10,000 to have them come for a day. That's a capacity we never had - and now we do. We use it to coalesce our activities surrounding sustainability. (CS, personal communication, December 12, 2008)

When asked about this year's book, the sustainability champion responded:

Oil on the Brain by Lisa Margonelli. It's all about the oil production, exploration, and extraction business and what kind of impacts that has had

on... there's a chapter on Nigeria; there's one on Venezuela. We have Lisa on board to come visit us in March. We're excited about it. (CS, personal communication, December 12, 2008)

The sustainability champion also discussed how the incorporation of sustainability into the curriculum provided motivation for the rest of the college to take sustainability seriously. The interviewee explained:

At the same time our academic folks are brainstorming how to advance the notion of global learning and sustainability into their coursework, we simultaneously decided that if we stand up in the classroom and we teach these principles it will ring hollow if we don't, as an organization, embrace them and live that way as an organization. From the get go everybody kind of looked at each other and said, "Absolutely we have to do that. That's what will create the energy and the vibrancy behind our collective commitment here. And that's what will ring our students' bells, and make them realize that we're living what we're trying to teach them is important." (CS, personal communication, December 12, 2008)

In addition to this broad approach to incorporating sustainability into the curriculum, the college recently began offering an Associate of Arts (AA) degree in Sustainability. This degree was articulated with a School of Sustainability at a regional state university (Case C College, document, December 12, 2008). The AA degree followed in the steps of a successful certificate program titled "Sustainability and Ecological Literacy." The press release for this program described the factors that played into the college's decision to offer the program as "the advent of the green economy, strong student interest, and a commitment by the college to model sustainable practices in the classroom as well as in college operations" (Case C College, document, December 20, 2008). The professor who developed the certificate stated:

I think there is a new generation of students who tend to be more environmentally aware, and these students are looking for educational opportunities in the area of sustainability as more green economy jobs emerge. The certificate is a small step at the community college level to start getting students to think about possible job options that might be directly or indirectly related to future employment while at the same time receiving a well-rounded liberal arts education. (Case C College, document, December 30, 2008)

I believe the incorporation of sustainability into the curriculum at Case C College represented the college's desire to incorporate sustainability throughout the college. If you look at the definition of institutionalization that was provided in the literature review, "to incorporate into a system of organized and often highly formalized belief, practice, or acceptance" (Gove, 1993, p. 1172), then I think the efforts of this college to successfully incorporate sustainability into the curriculum provided a good example of the institutionalization of sustainability. One of the students in the program stated:

Sustainability is extremely important because it is affecting every one of our lives. Our mentality should start shifting towards long-term rather than short-term in order to make change and help future generations. If sustainability is not something we incorporate into students' schedules and lives, then they will feel that it does not affect them and change will never occur. (Case C College, document, December 30, 2008)

In summary, at Case C College sustainability was incorporated across the curriculum through both a theme approach to encourage the use of sustainability in many courses, and through the sustainability degrees. The theme approach included an annual campus wide sustainability book that many faculty incorporated into their classes. The college also provided an Associate of Arts degree in Sustainability which articulated with a local university.

Frequent assessment of sustainability impact. The sustainability champion for Case C College described using sustainability assessments for two different purposes. One was as part of the Presidents Climate Commitment in order to provide a baseline to measure greenhouse gas emissions, and the other concerned water usage assessment to assist the college in determining how to use water efficiently, since it was a limited resource in the region. When asked if any type of sustainability assessment had been done, the sustainability champion answered as follows:

Yes, but I would suggest it's sort of in a narrow segment of the whole topic and it has to do with the part that's related to the Climate Commitment that says we have to measure our greenhouse gas emissions. We have to establish a baseline. We're just finishing that up. (CS, personal communication, December 12, 2008)

The Case C College president answered the same question in the following way, in part:

In the process you have to do the best you can to make some estimates about your own college footprint. So we did have to do those evaluations as best we could. That is some level of assessment because it brings into the forefront of your mind exactly where we stand and what more we could be doing to reduce because that's our commitment over a period of time. Realistically looking at our stats and where we are at, it could be a 15-20 year commitment in terms of sustained work in order to get better. But I think that...I'm really hoping that...by having a more diverse group of people committed to it, we won't fall off the wagon. (CP, personal communication, December 12, 2008).

As was discussed earlier, the other sustainability assessment that was completed concerned the college's level of water consumption. This was done in order to make decisions about water efficiency and water reclamation projects. The Case C College sustainability champion explained:

We certainly have looked at the impact of our water consumption in order to use reclaimed water. You know, we've retrofitted restrooms, for example, with waterless fixtures. If you change these things out that's 10,000 gallons a year that don't get flushed away. (CS, personal communication, December 12, 2008)

Assessment of sustainability was used at Case C College to measure greenhouse gas emissions as part for the Presidents Climate Survey. An assessment was also completed in order to determine the college's level of water consumption and to help the college in determining how to use water more efficiently. For example, based on the water assessment, restrooms were retrofitted in order to have waterless fixtures.

Knowledge of sustainability by leaders. The knowledge of sustainability by leaders was very apparent during my interviews with both the Case C College president and sustainability champion. For example, when the sustainability champion was asked about the champion's understanding of the term sustainability, the response was, in part, as follows:

As we define it here at (Case C College), it's a lot broader than what many people think of when they think of sustainability. Which is largely the environmental piece. We consider sustainability to be sort of a wholesale commitment that stretches across our endeavors and gets into things like

economic justice, social justice, human interactions, and of course - obviously - the environmental part as well. (CS, personal communication, December 12, 2008)

When the president was asked the same question, the president responded, in part, as follows:

The goal is to care for the planet in a way such that it would be available for future generations. When we say “care for the planet,” it’s not just environmental in nature. There is certainly an environmental stewardship component, but there would also be a component that would be based upon the economic interrelatedness of countries and communities throughout the planet and that there would be issues of social equity to be concerned with as well. Those are three interconnected concepts that all need to be addressed in order to truly encompass the concept of sustainability. (CP, personal communication, December 12, 2008)

It was very apparent that both the Case C College president and the sustainability champion were extremely knowledgeable concerning sustainability issues in terms of the definitions described in the review of literature for this study. I visited the college carrying with me knowledge from several environmental science degrees, a detailed sustainability literature review, and a number of sustainability questions, and both interviewees were able to field all my questions comfortably and confidently.

Summary. The themes that I identified from the case analysis of Case C College concerning the first research question were: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, and (d) knowledge of sustainability by leaders. These themes are also listed in Table 4.

Meaning of Institutionalized Sustainability: Cross-Case Analysis

This section describes the meanings given to sustainability becoming institutionalized across the three community college cases. The primary goal of cross-case analysis is to identify common themes among the cases (Merriam, 1998; Stake, 2006). However, themes that are unique to some but not all of the cases are still valuable in providing insights to those interested in colleges that are similar to the ones where the unique themes are manifest. To assist with this cross-case

analysis, Table 5 provides a summary of the findings for research question one related to the meaning of institutionalized sustainability.

Table 4

Themes Describing the Meaning of Institutionalized Sustainability Identified at Case C College

- *Widespread use of sustainability practices*
- *Sustainability incorporation across curriculum*
- *Frequent assessment of sustainability impact*
- *Knowledge of sustainability by leaders*

Table 5

Themes Describing Meaning of Institutionalized Sustainability for Three Case Colleges

Case A College	Case B College	Case C College
• Widespread use of sustainability practices	• Widespread use of sustainability practices	• Widespread use of sustainability practices
• Sustainability incorporated across curriculum	• Sustainability incorporated across curriculum	• Sustainability incorporated across curriculum
• Frequent assessment of sustainability impact	• Frequent assessment of sustainability impact	• Frequent assessment of sustainability impact
• Knowledge of sustainability by leaders	• Knowledge of sustainability by leaders	• Knowledge of sustainability by leaders
• Extensive student involvement in sustainability activities	-	-
	-	-
	-	-

Five themes describing the meaning of institutionalized sustainability emerged from the individual case studies. These themes were: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, (d) extensive student involvement in sustainability activities, and (e) knowledge of sustainability by leaders. Four of the same themes were evident for all of the colleges: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c)

frequent assessment of sustainability impact, and (d) knowledge of sustainability by leaders.

Widespread use of sustainability practices. The widespread use of sustainability practices in operation was readily apparent at all three cases, particularly in the areas of energy, transportation, purchasing, and solid waste management. Information concerning the sustainability practices was readily available at all three colleges either in written brochures and/or in online presentations. All three colleges had highly developed energy conservation programs. For example, all three colleges were using efficient lighting systems in order to use less energy for lighting needs. Two of the colleges had their own solar panel arrays, while the third invested in green power. In addition, all three colleges were involved in water conservation initiatives, aggressive recycling programs, green building initiatives using LEED standards, and had written sustainability policies. Case B College had a prominent learning garden that was run by students and provided fresh vegetables for their culinary program. The widespread use of sustainability practices across cases is summarized in Table 6.

Table 6

Summary Across Cases of the Widespread Use of Sustainability Practices

Feature	Case A College	Case B College	Case C College
Energy Management	Large solar array, energy efficient light bulbs	Energy conservation program	Computer based energy management systems
Water Conservation	Own wastewater treatment plant and water system, plants required little water	Water conservation program	Reclaimed water system, low flow plumbing fixtures, xeriscape plants
Recycling Program	Present	Present	Present
Mass Transportation	Free bus service	Free bus service	Public bus service
New Building Development	New construction LEED certified	New construction LEED certified	New construction LEED certified
Purchasing	Purchased recycled copier paper	Learning garden provided produce	Purchased biodegradable products
Sustainability Practices Information	16 page color brochure	Tri-fold brochure	Online sustainability web site

Sustainability incorporated across curriculum. The incorporation of sustainability across the curriculum was something that all three colleges practiced both inside the classroom and outside the classroom. All three colleges offered sustainability degrees, and all had various ways of incorporating sustainability widely into their curriculum. The Case A College president talked about infusing sustainability concepts into the curriculum throughout the college. For example, the Case A College president spoke about an English instructor assigning a paper on something related to sustainability. Case C College used a theme approach that faculty members could use to incorporate sustainability throughout the curriculum. Several of the interviewees described the partnerships with the local four-year colleges as being important to the institutionalization of sustainability at their college. These partnerships with local colleges centered around articulation agreements with the local universities' own sustainability bachelor's degree. All three cases had some sort of sustainability committee or office that assisted with incorporating sustainability into the curriculum. These sustainability committees or offices represented an investment by the college into sustainability on the campus. A summary across cases of sustainability incorporated across curriculum is summarized in Table 7.

Assessment of sustainability impact. All three colleges were actively engaged in assessing their level of sustainability. They had conducted assessment data gathering surveys on sustainability topics, including carbon emissions, transportation, green jobs, and students' knowledge of their own college's sustainability activities. All three colleges were involved with the American College and University Presidents Climate Commitment, which provided an incentive for conducting sustainability assessments. These assessment data gathering activities seem to indicate that each college was interested in moving forward with sustainability initiatives, and that each college was actively seeking information with which to make future decisions, so that the decision-making would be better informed. The frequent assessment of sustainability impact across cases is summarized in Table 8.

Table 7

Summary Across Cases of Sustainability Incorporated Across Curriculum

Feature	Case A College	Case B College	Case C College
Sustainability themed AA/AS Degrees	6 with 8 additional ones in development stage	Energy Management, Renewable Energy Technology, Water Conservation Technology	AA degree in Sustainability
Articulation Agreements	With several regional state four-year colleges		With School of Sustainability at regional state university
Certificates	Sustainability with others in development	Energy Management, Building Operator, Sustainable Building Advisor	Sustainability and Ecological Literacy
Sustainability course offerings	22 courses	At least 14 courses	Use of sustainability book theme across campus
Course offerings with sustainability themes	19 courses	20 courses	Use of sustainability book theme across campus

Table 8

Summary Across Cases of Frequent Assessment of Sustainability Impact

Feature	Case A College	Case B College	Case C College
Assessment Activities	Presidents Climate Commitment greenhouse gas inventory, Ecological Footprint Assessment, environmental impact energy assessment, question on accreditation survey	Presidents Climate Commitment greenhouse gas inventory, annual environmental impact assessments, assessment with STARS tool	Presidents Climate Commitment greenhouse gas inventory, water usage assessment

Student involvement in sustainability activities. Case A College was the only college of the three that provided evidence concerning student involvement as

it relates to the institutionalization of sustainability. Case A College provided a number of resources in support of student involvement in sustainability activities, including a well-stocked sustainability resource center and a large number of student-centered sustainability events. The other unique aspect of student involvement in which Case A College was involved was an optional graduation pledge for environmental and social responsibility. I believe that these student-centered involvement sustainability activities are an example of broad institutionalization of sustainability at Case A College. For a college that is clearly committed to sustainability initiatives, it makes sense to involve students in sustainability to the largest extent possible.

Knowledge of sustainability by leaders. All three college cases provided strong evidence concerning the knowledge of sustainability of both the president and the sustainability champion concerning sustainability. All six interviewees were extremely knowledgeable concerning the common definitions of sustainability and showed a breadth and depth of knowledge about a variety of sustainability topics. While all interviewees were clearly interested in and committed to the institutionalization of sustainability, it appeared that they had also made a commitment and taken the time to educate themselves about sustainability.

Summary

This section provided findings in response to the first research question. Five themes emerged from the data about the meaning of “institutionalized” sustainability: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) assessment of sustainability impact, (d) student involvement in sustainability activities, and (e) knowledge of sustainability by leaders. Therefore, institutionalizing sustainability at a community college meant applying sustainability practices throughout the college in areas such as energy, purchasing, and solid waste management, incorporating sustainability broadly into the curriculum, and using sustainability assessments in order to understand the sustainability status of the college and to make informed decisions about sustainability. In addition, institutionalizing sustainability meant involving

students in sustainability activities on campus, and having campus leaders that are knowledgeable concerning sustainability.

Research Question 2: Influences to Sustainability

This section provides the findings in response to the second research question, “What are the important influences to achieving institutionalization of sustainability in community colleges?” As for the first research question, it is organized by the three college cases followed by a cross-case analysis.

Case A College Analysis

Based on the data I found that there were two themes at Case A College concerning influences to sustainability: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives. My analysis follows under a heading for each of the two themes.

Lack of financial resources. The shortage of adequate finances was a significant influence to achieving institutionalization of sustainability at Case A College. When asked, “Have there been barriers with institutionalizing sustainability here” (at Case A College), both the sustainability champion and the president immediately stated finances, but they had slightly different perspectives concerning whether the lack of finances was really a barrier. In response to the question, the Case A College sustainability champion stated:

Sometimes you can only afford to patch, you can't afford to do it right. I need to expand our bus service. I want to buy some hybrid buses. For three buses, I'd need about \$1,800,000, and I am already in the planning process. But that's a lot of money and hard choices will have to be made. I think the biggest barrier is that you have to raise public awareness about what the choices are, and that is toughest in public education institutions. Public education is one of the hardest entities to change and adopt new thinking. (AS, personal communication, November 17, 2008).

The emphasis from this quote seems to be about the need to raise public awareness about funding needs, such as with the issue of sustainability.

In response to the same question concerning barriers to institutionalizing sustainability, the Case A College president stated:

I don't really think that there have been barriers. We've been able to do things on a shoestring because people are very passionate about sustainability. We've been able to cobble money together to do this and to

do that. That's worked out really well. When it became institutionalized through our strategic planning effort, we knew that as we do our planning every year we need to allocate money to those initiatives. We knew that we'd be putting more money into sustainability. It competes with everything else. Most of our initiatives are around student learning and, of course, sustainability feeds into that. (AP, personal communication, November 17, 2008)

The president went on to say, in reference to funding:

So I see that (funding) as a potential barrier if we don't bring everything together now under one umbrella and we all start moving and looking at the long-term vision of what it could be. It's not a barrier at this point, but it could be if we don't pull it all together now. Funding is always difficult. I want to be able to put as much money to it as we can. Given the financial times in (our state), we do have a lot of one-time money that we can fund to move forward. It's just the long-term thinking of how do we then bring that into ongoing monies so that people don't have to constantly wait and think "I don't have the funding for that. I need to go get that funding." That could be a potential barrier that we haven't run into yet, but we'll be bounding up against it here pretty quickly. (AP, personal communication, November 17, 2008)

The recent downturn in the economy likely contributed to funding concerns that the president stated above. The Case A College 2007-2012 Strategic Plan stated, "The ... state budget is extremely sensitive to changes in the economy and economic downturns have a significant negative impact on community college budget allocations. The college has historically had a limited revenue stream outside of the state-funded budget." (Case A College, document, November 17, 2008).

In summary, both the sustainability champion and the president of Case A College thought that finances were a significant influence to achieving institutionalization of sustainability at their college. The sustainability champion thought that it was important to raise awareness of sustainability in order to provide adequate funding for it. The president described how the college was initially able to fund sustainability on a shoestring because of people's passion for the topic. Over time, sustainability became easier to finance once it was written into the strategic plan. The college's strategic plan emphasized budget difficulties in

general. The president described how the financing barrier was related to ensuring that sustainability was part of the college's long term thinking.

Cross disciplinary sustainability initiatives. Cross disciplinary sustainability initiatives were considered an influence to achieving sustainability at their college by both interviewees of Case A College. When the Case A College interviewees were initially asked about barriers for institutionalizing sustainability, neither initially stated discipline boundaries, but rather finances, as addressed above. When asked, "Do discipline boundaries interfere with the establishment of a sustainability program," the Case A College sustainability champion stated:

It's a common phenomenon, and a cultural piece, especially in public education. Especially when you talk tenure, day shift, shared governance. And it's something I've experienced over twenty plus years. "You can't do that, it's outside your field...that's outside your responsibility." Or you need something and you have to go through someone to get it, but they don't care. They don't want to play, they don't want to share. I've learned to go around. I haven't made friends with everybody because of that. I've been questioning why in the heck we didn't float the Solar Technician Program two years ago. What's going on? Part of my questioning that is in the instructional arena. Sometimes that's what it takes. I'm not shy about it. They're working on it – they recognize it as a priority. (AS, personal communication, November 17, 2008)

The Case A College sustainability champion emphasized the barrier created by discipline boundaries at Case A College. Part of the champion's emphasis was on the need to confront the instructional areas to get sustainability initiatives happening.

When the Case A College president was asked a similar questions, "Has there been an issue here where the discipline barriers have been a barrier in terms of sustainability," the president responded:

Not as much as you might think because we have a faculty member who's leading that charge. She is on reassigned time to be able to infuse sustainability into our curriculum. She hasn't been able to move as quickly as she might want to because she's one person on part-time release to work on that. But I think she has done a pretty good job with it. Obviously there will be some disciplines who don't want anybody coming in and helping them with how they can infuse that in the topic into their area. (AP, personal communication, November 17, 2008)

The Case A College’s Educational Master Plan addresses cross disciplinary sustainability initiatives. It states, “Integrate sustainability into the curriculum by developing new courses, increasing the number of courses with a sustainability component, and using multi-disciplinary approaches to weave these courses together” (Case A College, document, April 6, 2009).

In summary, the Case A College sustainability champion found discipline boundaries had indeed created barriers that necessitated confronting the instructional faculty in order to support sustainability initiatives. The Case A College president emphasized the importance of providing a faculty member with reassigned time in order to support sustainability at Case A College. The college’s Educational Master Plan encouraged multi-disciplinary approaches to incorporating sustainability into the curriculum.

Summary. The key finding of the case analysis of Case A College concerning the second question, “What are the influences to achieving institutionalization of sustainability at their college,” was the identification of two themes: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives. These themes are listed in Table 9.

Table 9.

Themes Describing the Influences to Institutionalization of Sustainability Identified at Case A College

-
- *Lack of financial resources*
 - *Cross disciplinary sustainability initiatives*
-

Case B College Analysis

The following section concerning the second research question, “What are the important influences to achieving institutionalization of sustainability in community colleges,” found the same influences as for Case A College: a) lack of financial resources, and b) cross disciplinary sustainability initiatives.

Lack of financial resources. The primary influence concerning the institutionalization of sustainability as Case B College that the president stated was lack of financial resources. The president stated:

We could do more if we had more money. I'd like to move more quickly with some of the energy things that we're thinking about. I'd like to send more people to more places to see what's going on. I'd like to have more development funds. Resources is an issue. (BP, personal communication, December 1, 2008)

When the sustainability champion at Case B College was asked about influences to the institutionalization of sustainability, the champion responded:

As far as implementing sustainability in college operations, the facilities area in particular, I think that our maintenance area has been cut so much. Here's where the budget thing comes in. Our maintenance area has been cut so much that we're hardly keeping up with maintenance. The most that we are doing now is responding to emergencies. So it is really difficult to keep up with maintaining sustainability features of the college like energy management systems when all you're doing is responding to emergencies. Things kind of fall off the plate and don't get maintained as well as they should and we don't end up saving as much energy as we could. So there - that's where the budget thing comes into play. Because our maintenance is severely understaffed. (BC, personal communication, December 1, 2008)

College documents supported budget problems for the college in general. The Board of Education recent meeting minutes document the Case B College president stating, "We have been informed by the Governor's Office that they are expecting an even greater decline in the state budget." The president goes on to state that the college budget plan "results in shared pain and sacrifice" (Case B College, document, April 8, 2009).

In summary, the Case B College president emphasized that the college faced a lack of financial resources in order to support desired sustainability initiatives. The Case B College sustainability champion stated that it was difficult to maintain sustainability features within the college operations because the facilities area had faced significant budgetary cuts. College documents supported the college financial problems due to a declining state budget.

Cross disciplinary sustainability initiatives. The two interviewees addressed different aspects of the influences to achieving institutionalization of sustainability that were provided by cross disciplinary sustainability initiatives. Similarly to Case A College, when the Case B College interviewees were asked about barriers to the institutionalization of sustainability, both stated resources, as

described above. When the Case C College president was asked about whether discipline boundaries presented a barrier to the institutionalization of sustainability, the president responded:

I don't think so, because we did have some infrastructure in place through our learning communities to bring different disciplines together. For example, we have a learning community about class in America. So we have political scientists, we have lit people, we have economists, all doing part of that learning community. We have lots of models for doing that. Sustainability in some ways, the way the faculty are approaching it, is so embedded. It's not really an add on. If you're thinking about Science, you can think about sustainability. And I think people are, so I haven't seen that as a barrier. The barrier is the resource to give people the time to think about the connections they can make. Do they want to make the connections? I don't see any problem with that here. (BP, personal communication, December 1, 2008)

The Case B College web site on sustainability supported the president's statements concerning cross disciplinary sustainability initiatives. Part of the sustainability core value stated, "Provide an interdisciplinary learning environment that builds understanding of sustainable ecological, social, and economic systems, concern for social justice, and the competence to act on such knowledge." The web site also described the Sustainability and Learning Committee as "a faculty-driven committee that promotes and supports the integration of (Case B College's) sustainability core value into all aspects learning." It went on to state one of the committee projects was "infusing sustainability throughout the curriculum" (Case B College, document, December 1, 2008).

When the Case B College's sustainability champion was asked, "Have you found discipline boundaries interfering with the establishment of sustainability programs," the champion's response was:

A little bit. We're pretty good here because we do have learning communities and I think that most of the faculty here are pretty on board with understanding the importance of cross discipline education. However, just as an example - another thing that we're trying to do to infuse sustainability into curriculum is similar to how we and a lot of other colleges have an ethnic/gender/diversity graduation requirement. We're trying to work toward that with a eco-literacy or sustainability-literacy graduation requirement. The first step is to develop an application process so that instructors can apply to have their courses officially considered as a

sustainability class. In the Sustainability in Learning committee, we developed an application for sustainability course status, and we're working on getting the various governance committees to approve that now. It has been a fairly difficult thing to get people to agree on because science people see sustainability as environmental education and other areas (like social science) often don't see how sustainability would fit into their curriculum. What we're trying to do with the Sustainability in Learning committee is to get people to understand that if you're teaching a science class about environmental concepts that's great, but it's not a sustainability class. Because if it's a sustainability class, it has to incorporate all three pillars of sustainability. People are just having a hard time with that. (BP, personal communication, December 1, 2008)

The Case B College president emphasized that the college's learning communities provided some infrastructure that prevented discipline boundaries from being a barrier to the institutionalization of sustainability at the college. Case B College documents indicated that the college's sustainability core value supported an interdisciplinary learning environment, and indicated that a faculty committee supported infusing sustainability throughout the curriculum. However, the sustainability champion did state that discipline boundaries sometimes did create a barrier because different discipline's faculty had different perspectives concerning how sustainability fit into their classes' curriculum.

Summary. The key finding of the case analysis of Case B College concerning the second question, "what are the influences to achieving institutionalization of sustainability at their college," was the identification of two themes: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives. These themes are also listed in Table 10.

Table 10.

Themes Describing the Influences to Institutionalization of Sustainability Identified at Case B College

-
- *Lack of financial resources*
 - *Cross disciplinary sustainability initiatives*
-

Case C College Analysis

In response to the second question, “What are the important influences to achieving institutionalization of sustainability in community colleges,” Case C College had different themes than those determined for the other two colleges: a) lack of support in sustainability by district leaders, and b) passionate support of sustainability by college community.

Lack of support in sustainability by district leaders. When the Case C College sustainability champion was asked, “What do you perceive are some of the barriers to institutionalization of sustainability here,” the sustainability champion responded:

Our district. Their lack of commitment. I’m so surprised. Our Chancellor is largely operating on the recommendation of two people. We have at our district an Associate Vice Chancellor (AVC) for Capital Planning, where it’s about our entire infrastructure. And (he) is such a great guy. He’s an outdoors guy. He’s a hiker. He’s a backpacker. He’s the kind of guy you’d think would have the mindset to really want to get on this agenda. And our Principal Architect at the district is also a tough sell on it. The only conclusion I can draw, as smart as the two of them are, is it’s a limb they don’t want to go out on. It’s a limb I think they perceive is a longer limb than it actually is. But that is their perception, nonetheless. They’re not going to get stung in the backside. They’re not going out on it. It’s easy to say no. Here’s a perfect example of this one. Our district and our most recent bond put \$5 million aside in a district bucket for conservation efforts. When the reclaim pipe came down the street, we said we wanted to connect to it. The engineering guys figured out what was involved in doing that. It was about a \$45,000 project to do whatever had to be done. Well, we went to those guys and told them this project was perfect for the money in the conservation bucket. We’ll save a lot of potable water. And (the AVC) sends an email with a spreadsheet attached, and it’s a fundamental Excel thing that demonstrates what he insisted had to be true to get those dollars. It had to be a three-year payback of the \$45,000. So if we couldn’t demonstrate savings, we couldn’t do it. I made a big stink about this at one of our district financial meetings. Like I did when I made a big stink about Psychology two days ago with fifty people around the room. Actually, (the AVC) spent a few weeks being mad at me about it. Trying to make a point.... “(AVC), so you’re telling me I can’t do that unless it pays for itself in three years?” “Yes, (SC), that’s our policy as a district“. “Well, that’s the wrong policy in my judgment, because that’s exactly the same thought process the guy who owns the little subway sandwich shop across the street... you know when he’s thinking about making some sort of investment in his business... anybody in our community would be moved

by way of that kind of financial analysis. So you're saying that's the only thing that moves us? As a very large institution, as the kind of institution that needs to set the example in our community. That plays no role, that we do an evaluation just like the guy who owns his little subway sandwich shop across the street. That's basically what you're telling me." He didn't like that much. But other people got the point. I'm not suggesting we do stuff that has a 500-year payback, either, but come on! Let's position ourselves as leaders in our community! (CS, personal communication, December 12, 2008)

The most significant influence that the president discussed was also being part of a district that did not enthusiastically support sustainability. The president explained:

So that certainly is a barrier to being able to move faster - is that you are one part of a larger system. Other barriers? It certainly would be a facilitator if there were some leaders at the next level of leadership with some real sense of energy about this. That hasn't really come together the way I think we hoped it would at the district level. (CP, personal communication, December 12, 2008)

In summary, the sustainability champion believed that the college district's upper administration was creating a barrier for the institutionalization of sustainability at the college level by mandating unreasonable payback time periods for sustainability investments. The college president also stated that the district leadership lacked energy concerning sustainability initiatives.

Passionate support of sustainability by college community. Both interviewees felt that passionate, enthusiastic support of staff and faculty was a significant facilitator. When asked about facilitators, the president stated:

The certain people, or the leadership, is a facilitator of getting there. A major facilitator. Having this kind of cross-college team. Faculty members, staff members, administrators - all committed to this - has given us momentum that other colleges don't seem to be able to get. There do seem to be individuals in particular positions around almost every area of the college that once this came to light they shared some common interests and a willingness to do something about it. We formulated the group that would begin talking about it. They were able to energize one another and to make inroads that would have been very hard had there not been that same and diverse wide-spread group of leaders across the college. (CP, personal communication, December 12, 2008)

In describing the level of enthusiasm for sustainability on the Global Learning Committee, the president said, “Their energy was just contagious. They’re so enthusiastic and so committed” (CP, personal communication, December 12, 2008).

A college web site concerning sustainability initiatives indicates significant college community support for some sustainability activities. It indicates that over 1,000 students participated in recent college events related to the college’s sustainability one book theme, while over 600 students, faculty, and staff attended a recent sustainability speaker (Case C College, document, December 30, 2008).

In summary, the interviewees and college documents indicate passionate support of sustainability by the college community. Both interviewees felt that this support was a significant facilitator to the success of sustainability at their campus.

Summary. The key finding of the case analysis of Case C College concerning the second question, “what are the influences to achieving institutionalization of sustainability at their college,” was the identification of two themes: (a) lack of support in sustainability by district leaders, (b) passionate support of sustainability by college community. These themes are also listed in Table 11.

Table 11.

Themes Describing the Influences to Institutionalization of Sustainability Identified at Case C College

-
- *Lack of support in sustainability by district leaders*
 - *Passionate support of sustainability by college community*
-

Influences to Sustainability: Cross-Case Analysis

This section explores the influences to institutionalization of sustainability by the three community college cases in this study as developed through a cross-case analysis of the accounts shared by study participants, documents, and my observations for each college. To assist with this cross-case analysis, Table 12

provides a summary of the findings for research question two related to the influences to sustainability.

Table 12

Themes Describing the Influences to Sustainability for Three Case Colleges

Case A College	Case B College	Case C College
• Lack of financial resources	• Lack of financial resources	-
• Cross disciplinary sustainability initiatives	• Cross disciplinary sustainability initiatives	-
-	-	• Lack of support in sustainability by district leaders
-	-	• Passionate support of sustainability by college community
-	-	
-	-	
-	-	

Four themes emerged from the data analysis concerning what are the important influences to achieving institutionalization of sustainability in community colleges. These themes were: (a) lack of financial resources, (b) cross disciplinary sustainability initiatives, (c) lack of support in sustainability by district leaders, and (d) passionate support of sustainability by college community. A key finding of my study in regard to the second research question was the discovery that two themes concerning the institutionalization of sustainability were shared by two of the colleges: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives.

Lack of financial resources. The primary barrier to the institutionalization of sustainability at Case A and B College concerned the lack of financial resources. There just were not enough funds to accomplish what they would ideally like to do in terms of sustainability. The Case A College sustainability champion thought that raising awareness within the college community concerning the need to adequately support sustainability was important. The Case A College president stated that sustainability became easier to finance once it was part of the strategic plan. The

Case B College sustainability champion stated that budgetary cuts to maintain facilities made it difficult to achieve sustainability features at the college. Both Case A and Case B College documents indicated that both colleges faced financial difficulties in general.

Cross disciplinary sustainability initiatives. Both cases with the theme of cross disciplinary sustainability initiatives found value in encouraging cross discipline activity in support of sustainability. At Case A College, the sustainability champion described the need to confront instructional faculty across programs in order to gain support for sustainability. The Case A College president found value in providing a faculty member with reassigned time to support sustainability. The Case A College's Educational Master Plan encouraged multi-disciplinary approaches to incorporating sustainability into the curriculum. Case B College used learning communities to provide cross discipline support for sustainability. In addition, the college's sustainability core value supported an interdisciplinary learning environment, while a faculty committee supported infusing sustainability throughout the curriculum. However, within the learning communities, one barrier that occurred was when involved faculty had different ideas about what sustainability was all about.

Lack of support in sustainability by district leaders. Case C College was the only one of the three cases in which the theme emerged concerning the lack of support in sustainability by district leaders (in contrast to campus leaders). This is partly attributed to the fact that Case C College was the only college that was part of a multi-campus district. Both interviewees expressed frustration with the lack of support from the district's upper administration concerning sustainability. The sustainability champion went as far as to describe the lack of support as a barrier to the institutionalization of sustainability at Case C College.

Passionate support of sustainability by college community. In contrast to the lack of support in sustainability by district leaders, the Case C College interviewees and documents described the passionate support of sustainability by the college community as being a significant theme. The college president

described the enthusiastic support of faculty and staff as providing energy and momentum for sustainability at the college.

Summary

This section provided findings in response to the second research question. Four themes emerged from the data about the influences to achieving institutionalization of sustainability in community colleges: (a) lack of financial resources, (b) cross disciplinary sustainability initiatives, (c) lack of support in sustainability by district leaders, and (d) passionate support of sustainability by college community. Two themes concerning the institutionalization of sustainability were shared by two of the colleges: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives.

Research Question 3: Role of College President

The following section provides a data description and analysis organized around the third research question, “What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect.” This section is organized into three sections, one for each case, followed by a section on cross-case analysis.

Case A College Analysis

The Case A College analysis revealed three themes: (a) making sustainability a personal priority, (b) put sustainability in the strategic plan, and (c) sign on to national sustainability initiatives. The section is organized by these three themes.

Making sustainability a personal priority. The Case A College interviewees emphasized that in order to institutionalize sustainability at Case A College, it was important to have the support of the president. In explaining how the president provided support for sustainability initiatives, the sustainability champion stated:

(The Case A College president is) the one who has opened the doors to people being empowered to move forward on things that interest them. (The president) manages staff through encouragement, so if people find a particular line or successful venue, (the president) will support them and encourage them to beat the band. (AS, personal communication, November 17, 2008)

The president also stated the importance of providing support for sustainability initiatives. The president stated, “My job is to be supportive. I don’t think I’ve said no to anybody who has come with anything that has been halfway reasonable.” (AS, personal communication, November 17, 2008).

Presidential support also applied to incorporating sustainability into the curriculum. Several years ago the college established a Sustainability Steering Committee, which was created by the president and designed to advocate for the incorporation of sustainability into the curriculum. The sustainability champion described the support of the president and the board as being critical for members of the college community to have the freedom to innovate and collaborate on areas that were of interest, such as sustainability initiatives. The sustainability champion said, “That freedom to act and the support to act on that initiative is huge. I think that’s one of the keys that puts us ahead” (AS, personal communication, November 17, 2008).

The president also emphasized the president’s role in providing financial support for sustainability. The president said, regarding the start of college personnel getting involved in sustainability initiatives, “My role in all of that was to start funding it a little bit and to be able to get reassigned time for a faculty member. I agreed to allocate money to do it” (AP, personal communication, November 17, 2008).

The president at Case A College also supported sustainability by speaking publicly in support of sustainability on a college campus. The president stated:

Sustainability and leadership development are the two topics that I’m constantly addressing. We’ve made a commitment that we want to do as much for sustainability as we can, so whenever it comes up we talk about it. Whenever the students need something, we talk about it. (AP, personal communication, November 17, 2008)

The president also provided support for sustainability at Case A College by empowering people, namely faculty, staff, and students, to move forward on things that interest them, such as sustainability. The sustainability champion said that the president’s “the one who has opened doors to people being empowered to move

forward on things that interest them.” The president “empowered them to do it on their own.” The president “manages staff through encouragement” (AS, personal communication, November 17, 2008). The sustainability champion went on to say that the president was always very supportive.

In summary, the president opened doors for faculty, staff, and students to move forward on things of interest to them, such as sustainability. The president stated that a key part of the president’s job was to be supportive. The president also advocated for the incorporation of sustainability into the curriculum. In addition, the support that the president provided for sustainability included providing financial support, speaking publicly in support of sustainability, and empowering faculty, staff, and students to move forward on things that interest them, such as sustainability.

Put sustainability in the strategic plan. The incorporation of sustainability into the strategic planning process was a significant theme at Case A College. The Case A College president explained:

We have five strategic initiatives and sustainability emerged out of that planning process. That process was the appreciative inquiry process where we got everybody who wanted to participate in a big room and started looking at what our strengths are. Sustainability was, at that point, one of our strengths and something we were very passionate about. So it really is embedded now in our strategic initiatives and is a part of everything that we look at when it comes to funding and stepping out into new areas. (AP, personal communication, November 17, 2008)

The Case A College president later stated:

Sustainability is so institutionalized everybody feels like it’s theirs. When that happens, it’s a good thing because you know it’s embedded and it’s part of our culture. However, everybody has ownership and so everybody wants to go the direction they feel is right. We’re at the point where we’re trying to reformat what that steering committee is and what the sustainability committee is so that we can have a more institutional focus of the direction we’re moving. (AP, personal communication, November 17, 2008)

“Modeling Sustainability” is one of Case A College’s five initiatives listed in their strategic plan (Case A College, document, April 6, 2009). As part of the college’s strategic planning, they have drafted a detailed “Main Campus Climate

Action Plan for Energy” to map out the long range plans for energy use (Case A College, document, April 6, 2009).

The Case A College president explained the importance of visioning and of incorporating sustainability into the strategic plan of the college. The president explained:

What I’ve been talking about the last several years is my vision: for the college to be the best community college in (the state) in every single area. It’s really easy, it’s simple, everybody can interpret it at their level. It’s positive. So that’s the vision. The strategic initiatives is what we did a couple of years ago to get everybody together to come up with a strategic plan of what five or six things we want to focus on. If you look at the sustainability initiative, you will find all of the things we identified that we need to work on as an institution. That’s what the sustainability committee and steering team will be looking at over the next five years to make progress on. It will include things like infusing it into our curriculum, coming up with career pathways, being LEED certified (if that is something we decide to do), doing all of that can be found under that initiative. That’s the actual meat of that initiative. We have timelines associated with all of these goals. It’s all aligned with where we are going. All the initiatives tie back to our mission. (AP, personal communication, November 17, 2008)

An aspect of the strategic planning process allowed the president to be able to focus on the big picture. The president stated:

It really is all about having the big picture and being able to see what everybody else is wanting to do and then trying to form what that big picture is going to look like. For me, it’s always looking at what’s going to happen five or ten years down the road. That’s always what my thinking is. (AP, personal communication, November 17, 2008)

In response to the question, “How do you balance thinking about, or addressing, this issue (sustainability) with all your other demands,” the Case A College president responded:

It’s just part of all the other demands. I focus a lot on the strategic initiatives of the college. Everything we do here, we try to focus on those and on our mission. Sustainability is such a big part of that, anytime we go off to do something it’s always there. Because we’re always getting requests from other entities to talk about what we’re doing, it’s always in the forefront of my mind. I’ve done many presentations to other colleges, at conferences, and for local groups on the topic of sustainability. That and leadership development are the two topics that I’m constantly addressing. We’ve made a commitment that we want to do as much for sustainability as

we can, so whenever it comes up we talk about it. Whenever the students need something, we talk about it. We talk about how much time we can release a faculty member to go do what she needs to do. It's just always there. (AP, personal communication, November 17, 2008)

The president also stated, "You can't be a short-term thinker when you're thinking about sustainability" (AP, personal communication, November 17, 2008).

In summary, "Modeling Sustainability" is one of Case A College's five initiatives in their strategic plan. The president emphasized the importance of having sustainability as part of the strategic plan because it incorporates things that the college needs to work on, such as infusing sustainability into the curriculum and coming up with sustainability related career pathways. The president stated that when the president balances all of the various demands of being president, the president always focuses on the strategic initiatives of the college.

Sign on to national sustainability initiatives. The Case A College president used the Presidents Climate Commitment as a way to involve the college in sustainability. Case A College was a charter signatory to the American College and University Presidents Climate Commitment. In the previously described Case A College sustainability document, the college's involvement with the Presidents Climate Commitment was prominently displayed on page four of the sixteen-page document. In this document, under the title "Commitment to Sustainability Leadership," it stated:

The American College & University Presidents Climate Commitment is a pledge to take a leadership role in addressing one of the defining challenges of the 21st Century-global warming. By signing the Presidents Climate Commitment, the College agreed to develop a long-range plan for the institution that will reduce and ultimately neutralize green house gas emissions on our campuses. In the process, the College will educate the next generation of leaders and professionals and show the communities and other societal entities that there are large competitive benefits to proactively engaging in this effort. The American College & University President's Climate Commitment was signed by (Case A College President) on January 10, 2007. Please visit www.presidentsclimatecommitment.org for more information on the American College & University Presidents Climate Commitment. (Case A College, document, November 17, 2008)

The sustainability champion stated:

(The Case A College President) is able to give people just the right amount of support they need to move forward. (The president) didn't push us to explore sustainability. (The president) opened the doors to it and showed us what it would look like. (The president) sent (me the) President's Climate Commitment. One day I got a copy of it with a note from (The president's) desk saying, "What do you think?" So I read through it and I sent a note back saying, "I think it looks OK, we could do this." I'm sure (The president) solicited thoughts from other people. (The president) decided to move forward with it. There's a lot there, it's a pretty significant commitment. But there's a lot we need to do. (AS, personal communication, November 17, 2008)

The president was a key proponent of Case A College's involvement with the American College and University Presidents Climate Commitment in which they were a charter signatory. The Presidents Climate Commitment provides a pledge for the college to take a leadership role in addressing global warming. The president used the Presidents Climate Commitment as a way to involve the college in sustainability.

Summary. The key finding of the case analysis of Case A College concerning the third question, "What role does the college president play in addressing influences to institutionalizing sustainability at the college campus," was the identification of three themes: (a) making sustainability a personal priority, (b) put sustainability in the strategic plan, and (c) sign on to national sustainability initiatives. These themes are also listed in Table 13.

Table 13.

Themes Describing the Role of the College President Identified at Case A College.

-
- *Making sustainability a personal priority*
 - *Put sustainability in the strategic plan*
 - *Sign on to national sustainability initiatives*
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Case B College Analysis

The following section provides a data description and analysis organized around the third research question, "What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that

are exemplary in this respect.” The Case B College analysis revealed three themes: (a) advocate for sustainability, (b) facilitate making sustainability a core college value, and (c) sign on to national sustainability initiatives.

Advocate for sustainability. The sustainability champion described the support of the president concerning sustainability, “(The president) supported it from the get go. We wouldn’t have been able to do all the things that we’ve done if it wasn’t for (the president’s) support” (BS, personal communication, December 1, 2008). The president described support as follows:

We found ways to support them. Whether it was with a little money or with a little release time or visibility or whatever it was. Starting where people were and trying to support work taking place. That’s part of how we do our work here, and it was true with sustainability. So it was finding those people who were interested and then turning them loose and giving them the support that they needed. (BP, personal communication, December 1, 2008)

The Case B College president also stated the importance of the support of executive leadership concerning sustainability. The president stated, “I think having some executive leadership (it doesn’t have to be the president) with the passion to carry it and support the resources for it is another facilitator” (BP, personal communication, December 1, 2008).

The Case B College president described their role in supporting sustainability initiatives in the early part of the college’s participation in sustainability. The president stated:

After talking to some staff members, our V.P. became interested in supporting (sustainability). Basically, she told me that she was thinking of doing something and asked me what I thought about it. We were doing some things, but it wasn’t very organized. It wasn’t seen as a “thing.” It was like we were doing a little recycling over here, and a little bit of something else there. It started there. Secondly, it was the support of the resources when we were hiring staff. Every V.P. can find ways to do that, repurposing money and that kind of thing. All I had to do there was give her the OK. That was kind of my early involvement. We discussed signing the Talloires Declaration, and so I worked with the board on having them agree to sign that. There were a couple of board members who weren’t very excited about it. I worked to get them on the same page regarding that. That was maybe 2003. Then we hosted a couple of conferences, so I got a little more exposure to it and began to do my own reading about it. I’m not

sure what happened next. Somewhere in there it became obvious that (Case B College) was developing a reputation for being kind of forward thinking in what we were doing and that's the point at which I became more immersed in it. (BP, personal communication, December 1, 2008)

Another aspect concerning the role of the college president in institutionalizing sustainability of the college was to serve as a local and regional advocate. The sustainability champion stated, "(The president) is certainly involved and active in making sure that (Case B College) is considered in local and regional sustainability initiatives" (BS, personal communication, December 1, 2008). Later in the interview the sustainability champion stated, "Not only does (the president) support the day-to-day things that we're doing - every time (the president) makes any presentation I've ever heard - whether it's to the campus or anybody else - (the president) always talks about sustainability" (BS, personal communication, December 1, 2008). The president also discussed the role of public advocate:

My role, particularly at the beginning, was more at the community, state-wide, and national level. And it still is. Last year, though, I facilitated two summits on sustainability with just calling together all the folks who care about sustainability on this campus and invited them to a meeting. (BP, personal communication, December 1, 2008).

The college president also supported sustainability by emphasizing the value and core belief of sustainability. The sustainability champion stated, "(The president) just keeps planting the seed that this is an important college value over and over again. That's been huge" (BS, personal communication, December 1, 2008). The president described how this came about:

We did do an in-service all-staff convocation one fall (or maybe it was the spring, I can't remember) where the focus was sustainability. This was in the earlier years. We talked about what we'd accomplished so far. We asked staff to decide whether they thought it would be worthwhile developing a value and they said "yes." So we had a team of people work on it. Then once they had done some work on it, it needed to be shepherded through our governance councils, including the College Council which I sit on. So they took it to the different councils - Facilities, Learning, and so forth. Then it eventually came to College Council, so it was approved there. Then I worked with the board to have them approve it as a value. (BP, personal communication, December 1, 2008)

The president described the importance of passionate support of sustainability and how the president became passionate about sustainability. The president stated:

Having a leader or leaders at the executive level who are passionate about it and care about it and who want to carry it. For me, my passion was more on the peace side than the sustainability side, but once we began to do work and (Case B College) began to be noticed, I would be asked if I would come and speak on sustainability. OK. So I had to educate myself. As I educated myself and my staff educated me, I got more interested in it and more passionate about it. Now I have that passion about it myself, but I didn't start there. I was open to it. (BP, personal communication, December 1, 2008)

Near the end of the interview, the president summarized the role of the college president in the institutionalization of sustainability at a community college. The president said:

What I hear from people is "Somebody needs to lead this. We need leadership. We need the president." What I say to that is that I buy that it helps and it needs to be there, that some senior leader at the college with a title needs to be engaged with it and excited about it. But I do not personally think it's essential. It's essential when you get to a certain point. But I think a lot of things can happen without the president of the college caring about it or leading it. That may not be true in every college, so I don't want to totally generalize. But I think if people just take the power and say that it's something we need and want to do and there are enough of us who want to do it and we've got a few champions spread throughout the college and we're going to see what we can do. If you wait for the president to get excited about it, you might wait a very long time. Because there are a lot of other things to get excited about! It's better to try to deliver some things, and then engage the senior leadership. I think that people have encouraged me to get involved and I've been the one saying, "I'm there now and I'll be involved, but just go do the good work and you don't need the president to be the only champion." (BP, personal communication, December 1, 2008)

In summary, the president supported sustainability at Case B College by providing the support that was needed and giving those people interested the freedom to pursue their interests. One way that the president supported sustainability was by serving as a local and regional advocate of sustainability. The president stated that at a certain point it was important for the executive leadership

to be passionate about sustainability. This president did not start by being passionate about sustainability, but rather the president was open to the idea of sustainability. The president also stated that a lot can happen in terms of sustainability without the president's support, so don't wait for the president to get excited about sustainability. You don't need the president to be the only sustainability champion.

Facilitate making sustainability a core college value. The Case B College president discussed the importance of sustainability becoming a strategic priority for the college. When asked about the future of the president's involvement with sustainability at Case B College, the president stated:

I expect I'll continue to stay close to it. I think it's become a strategic priority for the college. So again, when you're thinking at the strategy level which is where the president ought to be engaged, then I expect it will continue to be on my list. (BP, personal communication, December 1, 2008)

Case B College's Strategic Plan 2003-2004 through 2007-2008 lists seven core values, one of which is sustainability. Under the sustainability core value it lists three bullets, as follows:

a) integrate practices that support and improve the health of systems that sustain life, b) provide an interdisciplinary learning environment that builds understanding of sustainable ecological, social, and economic systems, concern for environmental justice, and the competence to act on such knowledge, and c) equip and encourage all students and staff to participate actively in building a socially diverse, just, and sustainable society, while cultivating connections to local, regional, and global communities. (Case B College, document, November 26, 2008)

When the Case B College president was asked for their role in adding sustainability to one of the college's core values, the president explained their involvement:

We did do an in-service all-staff convocation one fall where the focus was sustainability. This was in the earlier years. We talked about what we'd accomplished so far. We asked staff to decide whether they thought it would be worthwhile developing a value and they said "yes." So we had a team of people work on it. Then once they had done some work on it, it needed to be shepherded through our governance councils, including the College Council which I sit on. So they took it to the different councils - Facilities, Learning, and so forth. Then eventually came to College

Council, so it was approved there. Then I worked with the board to have them approve it as a value. Part of working with the board is not bringing them in at the end of the process, but letting them know what's going on, that it's gone up for a vote and the college is thinking about making sustainability a value and talking it over throughout the process and hearing what they think. Explaining why the college feels it's important and keeping them connected to the work even though it's going on for about a year on this end. By the time you get the value in front of you with the words, you can say that we chose these words for these reasons. In fact, we have the word "justice" once or twice in the value. I'm looking it up here. We have the words "social," "economic," and "concern for environmental justice." Anyway, I had one board member who was kind of the Libertarian in the group - he's not on the board anymore - great board member. He had concerns about using the word "justice," especially "social justice." It came up prior to the board meeting. I meet with every board member either in twos or threes prior to the board meeting to make sure they know what's going to happen in the meeting and what's expected of them and what I'm looking for in terms of an action or whatever. He raised the concern. So I was able to let the faculty member leading the effort know that there might be some questions about these words and to be prepared for that when she is in front of the board. In the meantime, I did some research. I think I remember myself quoting Plato at the board meeting on justice. We had the discussion, we were prepared for it, we responded to the questions, and it passed. It's just doing the regular kind of grind work that you would do with the board to make sure that something doesn't go sideways in a board meeting. (BP, personal communication, December 1, 2008).

The quote above demonstrates the importance of the support and efforts of the president in getting sustainability approved as a part of the strategic plan. In this case, the president was instrumental in putting the possibility of sustainability as part of the strategic plan before the college staff. Then, the college spent significant time and energy shepherding the idea of sustainability as a college value through the governance councils and through to approval by the board of trustees.

Sustainability is one of the seven core values in the 2003-2004 through 2007-2008 Case B College Strategic Plan. The president discussed the process for placing sustainability in the strategic plan. The process involved staff and faculty interest in having sustainability as a core value, and then the president supporting it through the governance councils and the board of trustees.

Sign on to national sustainability initiatives. The Case B College sustainability champion thought that the college's early signing of the Presidents

Climate Commitment was a significant facilitator in the college's involvement in sustainability. This commitment provided impetus and support for the college to move forward with sustainability initiatives (BS, personal communication, December 1, 2008).

In Case B College's online program description of sustainability, one of the major headings was titled "Climate Commitment." Under this heading, it stated the following:

(Case B College) has a strong commitment to becoming carbon neutral and to helping to educate the next generation of leaders about the importance of reducing greenhouse gases. (Case B College) is a signatory of the American College and University Presidents Climate Commitment (ACUPCC). As a signatory, (Case B College) is committed to become carbon neutral. In addition to this commitment, (Case B College) is a member of the ACUPCC Leadership Circle whose members have agreed to help lead the initiative, promote it, and recruit colleagues to join. (Case B College's) President is also a member of the ACUPCC Steering Committee. As required by the Commitment, (Case B College) has recently conducted a comprehensive green house gas emission inventory and is currently working on a plan to become carbon neutral. (Case B College, document, June 30, 2009)

The Case B College president described the college's early involvement with the Presidents Climate Commitment:

I was invited to a meeting that Tony Cortese from Second Nature who had been out here to do a workshop was in. I couldn't go, so I sent our V.P. and that was the beginning of the Climate Commitment. Our V.P. came back and recommended that I read about it and think it over, so I did. So we were one of the first eleven charter members of the Climate Commitment. So we signed on to that, and I was on the national steering committee so that ratcheted it up. (BP, personal communication, December 1, 2009)

The president also described the Presidents Climate Commitment in more detail:

We signed the Presidents' Climate Commitment, so part of that is assessing your carbon footprint and so we're well on our way with that. We have a Sustainability Plan, and then we have measurements like the amount of food we throw out, the amount of recycling we do, are we reusing stuff or are we throwing it away? I think we have some measures in place, but I would say the Climate Commitment Assessment is probably... And then of course, going forward, what are you doing to lessen that footprint. That's part of signing the Commitment. It's not just something that you do -

there's actually work involved with assessing where you are and then taking action to address whatever your weaknesses are. (BP, personal communication, December 1, 2009)

Case B College was one of the first eleven charter members of the Presidents Climate Commitment. Both the college president and the sustainability champion described the early signing as a significant facilitator in the college's overall involvement in sustainability.

Summary. The key finding of the case analysis of Case B College concerning the third question, "what role does the college president play in addressing influences to institutionalizing sustainability at the college campus," was the identification of three themes: (a) advocate for sustainability, (b) facilitate making sustainability a core college value, and (c) sign on to national sustainability initiatives. These themes are also listed in Table 14.

Table 14.

Themes Describing the Role of the College President Identified at Case B College.

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- *Advocate for sustainability*
 - *Facilitate making sustainability a core college value*
 - *Sign on to national sustainability initiatives*
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Case C College Analysis

The following section provides similar themes in response to the third research question for Case C College as were identified for Case A College and Case B College. This section is organized around the following themes that are used as headings: (a) be constantly present for sustainability, (b) make sustainability a strategic goal, and (c) sign on to national sustainability initiatives.

Be constantly present for sustainability. At Case C College, the college president being constantly present for sustainability emerged as a significant theme concerning the institutionalization of sustainability at the college. When the sustainability champion was asked, "How active has the president been in the

institutionalization of sustainability at (Case C College),” the sustainability champion responded:

Very active. Any college president has a weekly calendar that is daunting. Clogged up morning, noon, and night. (The president’s calendar) is every bit that. But (he/she) makes a deliberate effort to be at the Global Learning and Sustainability Committee meetings monthly. (He/she) is at every one of the cool events - whether it’s the event of unveiling of the “Bottlefall” and having the artist out there – (he/she’s) there for all of them. (He/she) was, along with a bunch of others, a strong advocate for the inclusion of a sustainability statement in our strategic plan. (He/she) is an advocate for sustainability across our district. As one of the ten college presidents, (he/she) carries (his/her) share of clout with (him/her). (He/she) moves around our district and interacts with folks. So (his/her) contribution has been tremendous and it has been complete. I don’t think any of us who were big advocates of sustainability here could come up with a list of things we wish (the president) had done. (He/she) is full square behind it. (CS, personal communication, December 12, 2008)

The sustainability champion’s quote above demonstrates that the president actively supported sustainability by attending sustainability events, advocating for sustainability in the strategic plan, and advocating for sustainability throughout the district. The Bottlefall stated above was an art exhibit of plastic bottles that had been recycled on campus over a set amount of time. It was explained to me that the Bottlefall was a sustainability project designed to show how many plastic bottles were used on campus by students, faculty, and staff.

When the college president was asked, “How active have you been in the institutionalization of sustainability at your college,” the president responded:

I would say moderately active. Especially in the initial stages. When we first started looking at what our college’s response might be to this, I met personally with teams of people to begin to better understand what this meant. Several of the faculty did some research for me, sending me papers and things to read that would be helpful for my own understanding because I didn’t know a lot about this. (The vice president) was very enthused about this, but he had been a long-time member of the Sierra Club and all these other things where he understood the language. I would have no more understood what a photovoltaic panel was than anything else. And so they kind of brought me along to a certain degree by way of their own willingness to help me better understand. But I think one of the things that I was able to do was to raise it up from recognition as one of many different agendas at the college to something that would become more college-wide as a focus. That’s helpful, from any leader’s perspective, is signing on and

telling them you're behind them and you'll help get barriers out of their way and help facilitate their progress in this regard. (CP, personal communication, December 12, 2008)

In the quote above, the president emphasizes the value that the support of the president provided by both bringing sustainability to a college-wide focus and by informing staff that you support them in their sustainability efforts and you will assist in getting barriers eliminated.

One theme that the president discussed was the importance of the support from the board of trustees. The president stated, "We finally got the governing board of the community college system here to adopt a statement on sustainability. The statement, it's called *A Resolution on Sustainability*, was very vague. It's very big and broad" (CP, personal communication, December 12, 2008)

The sustainability champion described the Case C College president's role in the institutionalization of sustainability at Case C College as "very active," while the president described it as "moderately active." The sustainability champion said that the president was a strong advocate for sustainability at the college and across the district. The president said that the president was instrumental in making sustainability a college-wide focus by signing on to it, supporting the staff and faculty, and facilitating their progress.

Make sustainability a strategic goal. The sustainability champion emphasized the importance of the president's role in having a sustainability statement in the strategic plan. The sustainability champion explained, "(The president) was, along with a bunch of others, a strong advocate for the inclusion of a sustainability statement in our strategic plan. (The president) is an advocate for sustainability across our district" (CP, personal communication, December 12, 2008).

The president explained how sustainability is incorporated in the strategic plan, and clarified how it was one of the goals, but not part of the mission or vision statement:

The vision statement is kind of, ideally, what would we like to be as an organization. The mission statement is sort of like - here's what we're charged with doing. In this state, under the constitution, with governing

board approval, here is what we will do for this community. And then after that there is a plan of goals. What we do in five year increments that says, “For the next five years, here are the big important things that we’re going to try to do as a college.” There is one goal of the seven that is sustainability. Clearly in terms of priorities, people know this is a big priority for the college. Having it at that level in our system - that’s a very important document in terms of where we’re headed and where we’re going. I don’t know that it will end up as a statement in the mission. The mission is more “We will provide access to affordable higher education via the offering of Gen Ed classes, university transfer classes, workforce development classes, continuing education...” that kind of stuff. (CP, personal communication, December 12, 2008)

Case C College’s 2007-2012 strategic plan had seven goals listed, and one of them was titled, “Advance Global Learning and Sustainability.” As described in the Case C College profile earlier in the chapter, the objectives of this goal include the following three items: (a) embed global learning and sustainability into the curriculum; (b) collaborate with external partners to support programs for a socially, environmentally, and economically sustainable society; and (c) examine current practices, as well as opportunities, to move the college toward highly sustainable, carbon neutral mode of operation and work with stakeholders and vendors aligned with principles of sustainability (Case C College, Document, December 12, 2008).

One issue that the president discussed was the president’s interest in expanding knowledge of sustainability and, at the same time, developing a commitment to, and passion for, sustainability. The president explained what happened when the college first started considering the issue of sustainability:

I met personally with teams of people to begin to better understand what this (sustainability) meant. Several of the faculty did some research for me, sending me papers and things to read that would be helpful for my own understanding because I didn’t know a lot about this. (CP, personal communication, December 12, 2008)

The president went on to emphasize her/his passion for sustainability. This passion allowed the president to help establish a goal about sustainability within the strategic plan. The president explained:

We actually decided in almost all these initiatives you need peoples’ focus for 2-5 years minimally to even make a dent. And so when we developed

our strategic plan, we decided we would make an entire goal around issues of sustainability. (CP, personal communication, December 12, 2008)

In summary, one of the seven goals in Case C College's 2007-2012 strategic plan is titled, "Advance Global Learning and Sustainability." The Case C College president had an interest in both expanding their own knowledge of sustainability and developing a commitment and passion for sustainability. The president enlisted teams of faculty and staff to better understand the issue of sustainability. This knowledge and passion allowed the president to help establish a goal of sustainability within the strategic plan.

Sign on to national sustainability initiatives. One aspect concerning the role the college president played in institutionalizing sustainability at Case C College that the sustainability champion described was the foresight the president had to be one of the early signers of the Presidents Climate Commitment. The college was a charter signatory to the American College and University Presidents Climate Commitment (CS, personal communication, December 12, 2008). Among other things, the signing of the Presidents Climate Commitment assisted the college in making a decision to build every single building on campus to LEED silver standards.

The sustainability champion explained the early involvement of Case C College with the Presidents Climate Commitment:

We were one of the early-on signers of the Presidents Climate Commitment - about #50 across the country - with some significant commitment and foresight on the part of our president because others in our district were saying, "No, no, you don't want to do that." We did it anyway. (CS, personal communication, December 12, 2008)

The Case C College sustainability champion goes on to explain some of the incentive for sustainability created by the Presidents Climate Commitment:

It's part of the Presidents Climate Commitment that we build every single building to LEED Silver Standards. That's one of the biggest commitments we've made, because as a growing college we have a lot of infrastructure on the drawing board. There's a cost to that. I'd estimate it at about 5% premium on the building. Initially - capital cost. I'm convinced that over the lifetime of these buildings, you know 40-50 years, some of these

strategies will definitely pay for themselves. (CS, personal communication, December 12, 2008)

The Case C College president explained the college's involvement with the Presidents Climate Commitment:

So some of (the Presidents Climate Commitment) everybody does, and then there's a section of it where you can select among several alternatives that your college will be committed to. And in the process you have to do the best you can to make some estimates about your own carbon footprint. And so we did have to do those evaluations as best we could. That is some level of assessment because it brings into the forefront of your mind exactly where we stand and what more we could be doing to reduce that because that's our commitment over a period of time. (The sustainability champion) thinks it might take us quite a few years. (The sustainability champion) has told me several times that realistically looking at our stats and where we are at, it could be a 15-20 year commitment in terms of sustained work in this in order to get better. But I think that...I'm really hoping that...by having a more diverse group of people committed to it, we won't fall off the wagon. Even with some changes in leadership, I don't think this should position us to lose our momentum. (CP, personal communication, December 12, 2008)

In summary, the sustainability champion credited the Case C College president with having the foresight to be an early signer of the Presidents Climate Commitment. This early signing of the Presidents Climate Commitment provided some incentive at Case C College for sustainability initiatives, particularly concerning the construction of new buildings to LEED silver standards.

Summary. The key finding of the case analysis of Case C College concerning the third question, "what role does the college president play in addressing influences to institutionalizing sustainability at the college campus," was the identification of three themes: (a) be constantly present for sustainability, (b) make sustainability a strategic goal, and (c) sign on to national sustainability initiatives. These themes are also listed in Table 15.

Table 15.

Themes Describing the Role of the College President Identified at Case C College.

-
- *Be constantly present for sustainability*
 - *Make sustainability a strategic goal*
 - *Sign on to national sustainability initiatives*
-

Role of the College President: Cross-Case Analysis

This section explores the meanings given to the role that the college president played in addressing influences to institutionalizing sustainability by the three community college cases in this study as developed through a cross-case analysis of the accounts shared by study participants, observations, and related documents for each college. An analysis of the themes that emerged across the case studies is provided. To assist with this cross-case analysis, Table 16 provides a summary of the findings for research question three related to the meaning of the role of the college president.

Seven themes emerged from the interviews, observations, and supporting documents concerning what role has the college president played in addressing influences to institutionalizing sustainability in community colleges. These themes included: (a) making sustainability a personal priority, (b) put sustainability in the strategic plan, and (c) sign on to national sustainability initiatives, (d) advocate for sustainability, (e) facilitate making sustainability a core college value, (f) be constantly present for sustainability, and (g) make sustainability a strategic goal. As shown in Table 16, because some of these themes are very similar, they can be combined into three general themes: (a) support sustainability at every opportunity, (b) incorporate sustainability into strategic plan, and (c) sign on to national sustainability initiatives. A key finding of my study in regard to the third research question was the discovery that three of the themes concerning the role the college president played in addressing influences to institutionalizing sustainability were shared by all of the colleges. This section is organized by each of these three themes: (a) support sustainability at every opportunity, (b) incorporate sustainability into strategic plan, and (c) sign on to national sustainability initiatives.

Support sustainability at every opportunity. One theme across cases concerning the role the college president played in addressing influences to institutionalizing sustainability at community colleges was the support of the college president at every opportunity. All three cases reported that the president provided significant support and advocacy for sustainability at their individual

colleges. At Case A College the president described part of the job responsibilities as being supportive in general. At all three colleges the president reportedly made it clear to the students, faculty, and staff that the president was interested in supporting issues of interest to the community, such as sustainability. In all three cases the president reported learning about sustainability over time because it was an interest of other college community members. The Case B College emphasized that, while the support of the president is important, interested individuals should not wait for the president to support sustainability, but rather should move forward on their own, otherwise they could be waiting for a long time.

Table 16

Themes Describing Role of College President for Three Case Colleges

Case A College	Case B College	Case C College	General Label Across Cases
<ul style="list-style-type: none"> • Making sustainability a personal priority • Put sustainability in the strategic plan • Sign on to national sustainability initiatives 	<ul style="list-style-type: none"> • Advocate for sustainability • Facilitate making sustainability a core value • Sign on to national sustainability initiatives 	<ul style="list-style-type: none"> • Be constantly present for sustainability • Make sustainability a strategic goal • Sign on to national sustainability initiatives 	<ul style="list-style-type: none"> • Support sustainability at every opportunity • Incorporate sustainability into strategic plan • Sign on to national sustainability initiatives

Incorporate sustainability into strategic plan. Another theme across cases concerning the role the college president played in addressing influences to institutionalizing sustainability at community colleges concerned the president's involvement in incorporating sustainability into the strategic planning process at their college. All three colleges incorporated sustainability into their strategic plan. Case A College made "modeling sustainability" one of their five initiatives in their strategic plan. Case B College had sustainability as one of their seven core values in their recent strategic plan. Case C College had "advance global learning and

sustainability” as one of seven goals within the most recent strategic plan. In all three cases the president had been instrumental in incorporating sustainability into the strategic plan.

Sign on to national sustainability initiatives. Another theme across cases concerning the role the college president played in addressing influences to institutionalizing sustainability at community colleges was their involvement in the Presidents Climate Commitment. The American College and University Presidents Climate Commitment is a pledge to take a leadership role in addressing one of the defining challenges of the 21st Century, global warming. Both Case A College and Case B College were charter signatories to the American College and University Presidents Climate Commitment. By signing the Presidents Climate Commitment, colleges agreed to develop a long-range plan for the institution that would reduce and ultimately neutralize green house gas emissions on the campus (Case A College, document, November 17, 2008). In Case C College’s case, the signing assisted the college in making a decision to build every single building on campus to LEED silver standards (CS, personal communication, December 12, 2008). Similarly, the Case B College sustainability champion thought that the college’s early signing of the President’s Climate Commitment was a significant facilitator. This provided impetus and support for the college to move forward with sustainability initiatives (BS, personal communication, December 1, 2008).

Summary

This section provided a data description and analysis organized around the third research question, What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect. An analysis of the themes that emerged across the case studies was provided. Three themes emerged from the interviews and the supporting documents concerning what role has the college president played in addressing influences to institutionalizing sustainability in community colleges. These themes were: (a) support sustainability at every opportunity, (b) incorporate sustainability into strategic plan, and (c) sign on to national sustainability initiatives.

Summary of Findings

This section described the data that was collected and analyzed. The method of research that I used to study the role that college presidents play in institutionalizing sustainability on community college campuses was multiple case study analysis. This study involved visiting three community college campuses, which made up the cases, and collecting data, primarily through interviews, which was supplemented by review of documents and observations of the participant's home institution. For each of the cases, two interviews were conducted. One was with the college president, and one was with a sustainability champion.

The data needed for this case study was dictated by the research questions and supported by the literature review. Therefore, data was needed that provided answers to these three research questions:

1. What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard?
2. What are the important influences to achieving institutionalization of sustainability in community colleges?
3. What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect?

Five themes describing the meaning of institutionalized sustainability emerged from the individual case studies. These themes were: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, (d) extensive student involvement in sustainability activities, and (e) knowledge of sustainability of leaders. Three of the same themes were evident for all of the colleges: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, and (c) frequent assessment of sustainability impact.

Four themes emerged from the interviews concerning what were the important influences to achieving institutionalization of sustainability in community colleges. These themes were: (a) lack of financial resources, (b) cross disciplinary sustainability initiatives, (c) lack of support in sustainability by district

leaders, and (d) passionate support of sustainability by college community. A key finding of my study in regard to the second research question was the discovery that two themes concerning the institutionalization of sustainability were shared by two of the colleges: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives.

Three general themes emerged from the interviews, observations, and supporting documents concerning what role the college president played in addressing institutionalizing sustainability in community colleges? These themes were: (a) support sustainability at every opportunity, (b) incorporate sustainability into strategic plan, and (c) sign on to national sustainability initiatives. A key finding of my study in regard to the third research question was that all three of the themes concerning the role the college president played in addressing influences to institutionalizing sustainability were shared by all of the colleges.

In the preceding chapters, I have reported the findings from my research concerning the role that the college president plays in institutionalizing sustainability on a community college campus. In the subsequent chapter, I will describe the findings in relation to the existing literature, discuss implications of the findings to practice, and suggest recommendations for future research on the topic of sustainability on community college campuses.

CHAPTER 5: SUMMARY, DISCUSSION, AND IMPLICATIONS

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. This chapter discusses the findings of my study in relation to the literature review and how the findings are in agreement or in contrast with previously published works, implications for practice, and recommendations for future research. A recap of only the primary themes will be discussed here as the descriptions and supporting data are described in Chapter 4.

This study focused on what it means to have sustainability institutionalized at a college campus, what factors impede and support the institutionalization of sustainability, and what role a college president plays in implementing the institutionalization of sustainability. As the number of environmental threats to the world appears to escalate, the issue of sustainability is becoming an increasingly important topic. Environmental problems are evident in a variety of forms, including global warming, water pollution, water shortages, air pollution, habitat destruction, species extinction, and ever mounting demands for limited natural resources (Brown, 2006; Millennium Ecosystem Assessment, 2005a; Worldwatch Institute, 2006). As these environmental issues become more evident, institutions of higher education are becoming significant players within society for addressing many of these issues (Hignite, 2006). However, while there is a significant, and growing, amount of scholarly research concerning sustainability in higher education, there appears to be virtually none concerning the role of community colleges. This study contributed to the body of knowledge concerning the meaning of institutionalized sustainability and the role of the college president in institutionalizing sustainability on a community college campus based on evidence from those who were involved in institutionalizing sustainability in the community college cases selected for this study.

Summary and Discussion

This section provides a summary and discussion of the findings for the three research questions in relation to the related literature in Chapter 2 and any new literature thought to be relevant. The three research questions of my study were:

1. What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard?
2. What are the important influences to achieving institutionalization of sustainability in community colleges?
3. What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in institutionalizing sustainability.

Findings were shown to have either largely agreed with previously published works as described in the literature review or to be new findings. The philosophical approach was interpretive social science using case study method with three community colleges and six study participants. The data collected and analyzed included interviews with the six study participants, a variety of documents, and campus observations.

Research Question 1: What does it mean to have sustainability “institutionalized” at community colleges that are judged to be exemplary in this regard?

This section presents the findings in response to research question 1 in relation to the literature. Five themes describing the meaning of institutionalized sustainability emerged from the three cases that were studied. These themes were: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, (d) extensive student involvement in sustainability activities, and (e) knowledge of sustainability by leaders. A key finding of my study in regard to the first research question was the discovery that four of the themes concerning the institutionalization of sustainability were shared by the colleges: (a) widespread use of sustainability practices, (b) sustainability incorporated across curriculum, (c) frequent assessment of sustainability impact, and (d) knowledge of sustainability by leaders.

The concept of institutionalization in terms of my study refers to the integration of sustainability across all aspects of a college campus. Berger and Luckman (1966) stated that institutionalization “occurs whenever there is a reciprocal typification of habitualized actions by types of actors” (p. 54). In other words, institutionalization occurred when the actors involved in the process in question interact together to form mental representations of each other’s actions whereby those actions become habitualized throughout an organization. Jennings and Zandbergen (1995) argued that institutional theory provides a useful approach to understanding ecologically sustainable organizations, particularly concerning the ways that sustainable practices are developed and diffused throughout an organization. They emphasized that “the creation of new concepts and practices, their acceptance in different fields, and the building of institutions seems to snowball into paradigm change” (p. 1044). The cases in my study showed a number of ways that sustainability was institutionalized throughout the respective organizations, as discussed in the following paragraphs.

The widespread use of sustainability practices and sustainability being incorporated across the curriculum were both found at all three college cases in this study and were identified in the related literature. Keniry (1995) documented numerous colleges’ activities in sustainable practices related to purchasing, landscaping, transportation, energy, dining services, and solid waste management. Cortese (2003) discussed the opportunity that colleges provided for making sustainability an integral aspect of all dimensions of the institution. Cortese provided a model that represented the assertion that the following four things needed to coexist and be given adequate attention if a college’s commitment to sustainability was going to be campus wide, systematic, and ongoing: operations, curriculum, community, and research.

The first part of Cortese’s model listed operations. The widespread use of sustainability practices found at all three colleges included the areas of energy, transportation, purchasing, and solid waste management. These four areas would typically be considered part of a college’s operations. The second part of the model was curriculum. One of the themes that I found at all three colleges was that

sustainability was incorporated across the curriculum. The third part of Cortese's model was community. Several aspects of the widespread use of sustainability practices included significant community connections, particularly those related to energy and transportation. For example, all three cases worked closely with their local utility companies in order to institute some of their energy programs. Similarly, all three colleges worked closely with their local towns to implement some of their transportation options. The fourth part of Cortese's model was research. All three colleges in my study were involved in a variety of assessment activities. Since assessment is a form of evaluation, and evaluation is a form of research, then all three colleges were involved in research.

The incorporation of sustainability across the curriculum was identified by the community colleges in this study and in the related literature. The incorporation of sustainability across the curriculum was practiced by all three colleges both inside the classroom and outside the classroom. The strategies for the incorporation of sustainability across the curriculum included sustainability themed degrees and certificates, articulation agreements with four-year sustainability programs, course offerings with sustainability themes, and the use of sustainability book themes across the campus. Haigh (2005) emphasized the importance of greening the curriculum. He argued that the teaching of environmental literacy throughout the curriculum of a college must involve a major shift in the priorities of a college. For the three colleges in my study, the greening of the curriculum occurred at the same time as a number of other sustainability initiatives. All three colleges included the incorporation of sustainability across the curriculum as part of a shift in priorities at the colleges, as Haigh suggested was necessary.

All three of the colleges in my study actively engaged in assessing their level of sustainability, an activity supported by the related literature. Pearce and Uhl (2003) discussed the concept of an institutional assessment, which they stated was a way of determining whether or not sustainability really had been institutionalized, or established, at a college. Rees (2003) discussed the use of ecological footprint analysis to estimate the sustainability status of a college as a useful way to develop local sustainability initiatives. Ecological footprint

assessment was used at Case A College as part of multiple sustainability assessment initiatives. All three colleges used the Presidents Climate Commitment greenhouse gas inventory, several colleges used an environmental impact energy assessment, one college used a question on an accreditation survey, one did an assessment with the STARS tool, and one conducted a water usage assessment.

The definition that I used for sustainability in this study was one that incorporated the balancing of the three components of social equity, economic prosperity, and ecological integrity (Edwards, 2005). The reason I selected this definition was that it was the most common one in use throughout the sustainability literature (Edwards, 2005; Krizek & Power, 1996; Sterling, 2004). One of the themes across cases for my study concerned the knowledge of sustainability by the leaders. During my interviews with all six of the sustainability leaders at the colleges, it was evident that they were all familiar with the definition that I chose to use for the study. I began all of my interviews with a question concerning their knowledge of the term sustainability. All of the interviewees either demonstrated an understanding of the most common definition of sustainability in the literature pertaining to social equity, economic prosperity, and ecological integrity, and/or they demonstrated a general depth concerning the topic of sustainability.

The finding for Case A College concerning the extensive student involvement in sustainability activities was partly supported by the literature. Fulton-Calkins and Milling (2005) stated that one of the important traits for upcoming community college leaders was the importance of not forgetting students when involved in leadership decisions and duties at a community college. However, the literature did not mention student involvement in sustainability activities at community colleges.

The literature does support students being a priority at community colleges and the value of student involvement in campus activities. O'Banion (1997) stated, "The student has always been the first priority in the community college" (p. 28). Strange (1996) emphasized the importance of institutional support for student activities and environments "...that more fully engage students in meaningful ways and in which students can experience a sense of functional importance and identity"

(P. 263). One theme that emerged for Case A College was the extensive student involvement in sustainability activities. The Case A College president stated, “Working with students is critical, because they’re the ones who are going to keep this whole movement alive” (AP, personal communication, November 17, 2008).

This section described the findings of my study concerning institutionalized sustainability in relation to the related literature. All five themes that emerged in my study paralleled what was found in the literature, either specifically or in general.

Research Question 2: What are the important influences to achieving institutionalization of sustainability in community colleges?

This section summarizes and discusses the findings in response to research question 2 in relation to the related literature. Four themes describing the influences to institutionalization emerged from the three cases studies. These themes were: (a) lack of financial resources, (b) cross disciplinary sustainability initiatives, (c) lack of support in sustainability by district leaders, and (d) passionate support of sustainability by college community. A key finding of my study in regard to the second research question was the discovery that two themes concerning the institutionalization of sustainability were shared by two of the colleges: (a) lack of financial resources, and (b) cross disciplinary sustainability initiatives.

The literature concerning research question 2 addressed both the positive influences to the implementation of sustainability and the barriers to promoting sustainability. As mentioned in the above section, Cortese’s model included curriculum as one of the four initiatives needed for a college’s successful commitment concerning sustainability to occur. Wright (2002a) listed the development of interdisciplinary curriculum as one of the foundational themes that exist in universities’ approach to sustainability. The other foundational themes included sustainable physical operations, sustainable academic research, environmental literacy, ethical and moral responsibility, cooperation amongst universities and counties, and business partnerships. Cross disciplinary

sustainability initiatives was one of the influences to sustainability themes that was found to have occurred at two of the case colleges.

The theme of cross disciplinary sustainability initiatives was identified by the community colleges in this study and in the related literature. Both Case A College and Case B College found value in encouraging cross disciplinary activity in support of sustainability. While Case A College's president and Educational Master Plan encouraged cross disciplinary sustainability initiatives, the sustainability champion did find it necessary to confront faculty across programs in order to gain support for sustainability. Moore (2005a) and Barlett and Chase (2004) found that disciplinary boundaries were a significant barrier, partly because a department ultimately claims even interdisciplinary programs, such as sustainability. Case B College addressed this potential barrier through the use of learning communities and a sustainability core value that supported an interdisciplinary learning environment. However, even within the learning communities, one barrier that occurred was when involved faculty had different ideas concerning the definition of sustainability.

Moore also stated the financial aspect of disciplinary boundaries in that individual departments allocate funding resources, usually for their own programs, and individual departments often claimed interdisciplinary programs, such as sustainability. Barlett and Chase (2004) emphasized that the structure of college departments ultimately support individual programs and negatively affect access to resources for cross discipline initiatives such as sustainability. One of the influences to sustainability by two of the colleges was the lack of financial resources, however the limited resources were due to college wide funding issues rather than departmental issues. Of course, these college wide funding issues will affect the departments within the college. This college wide funding issue was partly due to the challenging economic times that provided the backdrop for my research study. Vaughan and Weisman (1998) found that a number of community college presidents stated that resources were often inadequate which made it difficult for colleges to fulfill their mission and goals, including new initiatives such as sustainability.

Case C College was the only one of the three cases in which the theme emerged concerning the lack of support for sustainability by district leaders. There was nothing in the literature concerning the relationship between college district leadership specifically and sustainability. Jensen, Giles, and Kirklin (2005) described the advantages and disadvantages of working within a district. The advantages include dispersed resources, more autonomy for campus educational leaders, and opportunities for economies of scale. The primary disadvantage was that the relations between the district office and campus leaders can be divisive and complex. In addition, there was literature that supported the importance of overall college administration leadership and sustainability, which will be addressed in the next section.

Interviewees and documents at all of the colleges included in this study described passionate support of sustainability by the college community as being a significant theme. Valentin and Spangenberg (2000) described community as being an important aspect of sustainability because it provides the connection between social equity, ecological integrity, and economic prosperity. They emphasized that each community is unique, but an actively engaged diverse community, with people from different cultural, ethnic, and professional backgrounds, adds a richness and creativity to sustainability within an institution. Part of Cortese's model, discussed above, included community as an integral aspect of a college's support for sustainability. Moore (2005b) emphasized the importance of providing an opportunity to engage university staff, faculty, administrators, and students in a dialogue about sustainability.

This section described the finding of cross disciplinary sustainability initiatives at two colleges that found value in encouraging it, while the literature described discipline boundaries as typical barriers to sustainability initiatives. Another finding at two colleges was lack of financial resources for sustainability, which was supported in the literature. Case C College described lack of support for sustainability by district leadership as a negative influence, which was unsubstantiated in the literature. Case C College also described passionate support of sustainability by the college community, which was evident in the literature.

Research Question 3: What role has the college president played in addressing influences to institutionalizing sustainability at community colleges that are exemplary in this respect?

This section summarizes and discusses the study findings in response to research question 3 in relation to the related literature. Seven themes describing the role the college president played in addressing influences to institutionalizing sustainability in community colleges emerged from the individual case studies. These themes were: (a) making sustainability a personal priority, (b) put sustainability in the strategic plan, (c) sign on to national sustainability initiatives, (d) advocate for sustainability, (e) facilitate making sustainability a core college value, (f) be constantly present for sustainability, and (g) make sustainability a strategic goal. Because some of these themes from the individual college cases are closely related, they were combined during the cross case analysis into three general themes: (a) support sustainability at every opportunity, (b) incorporate sustainability into strategic plan, and (c) sign on to national sustainability initiatives.

Vaughan (1989) stated that three functions of the community college presidency are the most important: (a) managing the institution, (b) creating the campus climate, and (c) interpreting and communicating the mission of the college. In setting the institutional climate, he discussed the need for the president to balance the institutional, community, and individual concerns and needs of the college. Myran, Baker, Simone, and Zeiss (2003) emphasized that community college presidents must combine strategy and execution to effectively lead a community college. The strategic element that they referred to included the mission statement, vision statement, and core strategy. My study found that one theme concerning the role that the college president played in addressing influences to institutionalizing sustainability at community colleges concerned the president's involvement in incorporating sustainability into the strategic planning process at the college, which includes attention to mission, vision, and core strategies.

The literature above supported the role of the president in using the mission statement, vision statement, and core strategy to lead the college effectively. The

mission statement, vision statement, and core strategy are what typically make up the strategic plan at a college. However, the literature was about college leadership in general, not about sustainability leadership. All three of the colleges in my study incorporated sustainability into their strategic plan. Also, in each of the colleges the president was instrumental in the incorporation of sustainability into the strategic plan. Case A College had sustainability as one of five initiatives in their strategic plan, Case B College had sustainability as one of their core values, while Case C College had sustainability as one of their goals in their strategic plan.

Desjardins (2001) found that two of the competencies exhibited by community college leaders were that leaders create a shared vision and champion change. A theme that emerged in my study was that the presidents at all my case colleges supported sustainability at every opportunity, or, in other words, championed change. At each of the three colleges the president reportedly made it clear to the college community that the president was interested in supporting issues of interest to the community, such as sustainability. Desjardins discussed how, in order to create a shared vision, the exemplary presidents “undertook an evolutionary collaborative development of a vision by involving all the colleges’ constituencies with a stake in the outcome” (p. 20). This development of a vision based on the colleges’ constituencies matched the finding in my study where all of the college presidents reported learning about sustainability over time because it was an interest of other college community members.

O’Banion (1977) also emphasized the idea that community colleges are “not afraid to reach out and explore new ideas and new concepts” (p. xvi). At each of the three college cases the president reported learning about sustainability over time because it was an interest of other college community members. After the presidents educated themselves about sustainability, at each of the three colleges the president then made it clear to the students, faculty, and staff that the president was interested in supporting the issue of sustainability, which had been shown to be an interest to the community.

Addy (1995) emphasized the importance of vision for a community college leader. Fulton-Calkins and Milling (2005) also emphasized the importance of

vision for upcoming community college leaders. I believe it was the college presidents' vision that allowed all three of the colleges to be relatively early signatories to national sustainability initiatives, particularly the American College and University Presidents Climate Commitment. Both Case A College and Case B College were charter signatories to this sustainability initiative. The Case B College sustainability champion thought that the college's early signing provided impetus and support for the college to move forward with sustainability initiatives. Wright (2002a) stated that there was an increasing number of sustainability declarations which are relevant to higher education, and that many institutions attempt to become more sustainable by signing these declarations.

Barlett and Chase (2006) emphasized that support from the top is critical for successful sustainability initiatives at institutions of higher education. With the exception of one chapter in this publication, there is virtually nothing in the literature about the role the college president plays in institutionalizing sustainability at community colleges. While all of my findings concerning research question 3 had underpinnings in the literature, the findings were original in relation to the literature as it pertained to the role the college president played in addressing influences to institutionalizing sustainability at community colleges.

This section described the finding that the role of the president was significant in incorporating sustainability into the strategic plan, while the literature more generally emphasized the importance of the strategic plan along with the importance of the role of the president in effectively using the strategic plan to lead the college. My study also found that at all three college cases the president was instrumental in the incorporation of sustainability into the strategic plan. This section further described that the president at all three colleges supported sustainability at every opportunity, while the literature more generally emphasized the importance of the president leading with vision and championing change. In both my study, where the president supported sustainability, and in the literature, where the president championed change, the interests of the college constituencies influenced the president. This section also described the role of the president in signing on to national sustainability initiatives, while the literature emphasized the

importance of vision for a community college president. I believe it was the college presidents' vision that allowed all three of the colleges to be relatively early signatories to national sustainability initiatives, particularly the American College and University Presidents Climate Commitment.

Implications for Practice

The purpose of this research study was to describe and improve understanding of the meaning of institutionalized sustainability and the role that a college president plays in institutionalizing sustainability on a community college campus. The motivation for this study arose out of a desire to influence community college leaders to support sustainability initiatives at their college by educating them about sustainability practices of their peer institutions that had exemplary sustainability programs. It was insightful to see what it looked like to have sustainability institutionalized at a college campus, what factors impeded and supported the institutionalization of sustainability, and what role a college president played in implementing the institutionalization of sustainability. This section provides recommendations for college presidents, administrators, and higher education policy makers who wish to institutionalize or support sustainability at community colleges. The following implications for practice are addressed in this section: (a) educate oneself about sustainability, (b) involve campus community in sustainability initiatives, (c) integrate sustainability into strategic plan, (d) advocate for sustainability at every opportunity, and (e) support sustainability across the curriculum.

Educate Oneself about Sustainability

Probably the most foundational thing a president can do to support sustainability at their community college is to educate oneself about sustainability. I believe this is key since one of the findings in my study was that all of the college presidents reported learning about sustainability over time because college community members encouraged them to educate themselves on the topic of sustainability. One aspect of sustainability that is particularly important to understand is the definition that includes all three aspects of social equity, economic prosperity, and environmental integrity. Other key sustainability topics

include the number of different sustainability practices that are possible on a college campus, how to incorporate sustainability into the curriculum, and how to conduct assessments of sustainability impacts. In order to educate oneself, reading this dissertation in its entirety would be a good start, along with reviewing some of the reference materials provided. There is likely a sustainability champion or enthusiast on campus who is eager to teach a president about sustainability. Local and national sustainability organizations can also be a good source of information. Of particular value is the Association for the Advancement of Sustainability in Higher Education. They offer a wide variety of resources, including conferences, trainings, curriculum workshops, webinars, and publications.

Involve Campus Community in Sustainability Initiatives

Involving the campus community in sustainability initiatives can be a good way to institutionalize sustainability on a college campus. One of my findings was that the passionate support of sustainability by the college community was an important influence to achieving the institutionalization of sustainability at a community college. The president does not have to be the only one to carry the torch of sustainability, but the president can be instrumental in gaining support of other campus community members in this regard. This can be done with a sustainability committee, by hiring a sustainability coordinator, by providing release time to faculty for sustainability related initiatives, by creating coalitions across campus of faculty, staff, and students interested in sustainability, by doing cost studies to emphasize long term financial savings of sustainability initiatives, or by helping students form a campus sustainability organization or club. Of course, several or all of these things can occur simultaneously.

Integrate Sustainability into Strategic Plan

Integrating sustainability into the strategic plan is a useful way to institutionalize sustainability on a college campus. One of the findings in my study was that all of the college cases incorporated sustainability into the strategic plan. Depending on the structure of the strategic plan, sustainability can be incorporated into the mission statement or be one of the values, goals, or initiatives of the strategic plan.

Advocate for Sustainability at Every Opportunity

For the college president, publicly advocating for sustainability at every opportunity appears to be very valuable. All three cases in my study reported that the president provided significant support and advocacy for sustainability at every opportunity. One significant way that the president can advocate for sustainability is by educating the college community that sustainability involves social equity and economic prosperity in addition to ecological integrity. Showing support for sustainability by attending sustainability activities is another way to advocate for sustainability. Advocating for sustainability can also be accomplished by speaking publicly in support of sustainability, both on campus and throughout the local community.

The president can also advocate for the institutionalization of sustainability by signing on to national sustainability initiatives and by providing regular assessments of sustainability. My study found that all three case colleges signed on to national sustainability initiatives and conducted regular assessments of sustainability at their campuses. The American College and University Presidents Climate Commitment is one way to accomplish both these tasks, as it is a national sustainability initiative that also provides an assessment tool.

There are a number of widespread sustainability practices that a president can initiate and support at a community college campus. The widespread use of sustainability practices was found at all three colleges in my study. Widespread means that sustainability practices fall under the broad categories of purchasing, landscaping, transportation, energy, dining services, and solid waste management (Keniry, 1995). They can also include water management and capital building projects. Capital projects and energy management decisions can have large up front financial commitments, but can also provide long term financial savings through energy efficiency initiatives or solar panel investments.

Support Sustainability across the Curriculum

A president can provide support for the institutionalization of sustainability by working to incorporate sustainability across the curriculum. The incorporation of sustainability across the curriculum was something that all three colleges

practiced both inside the classroom and outside the classroom. If done effectively, this may be the best way to reach the greatest number of individuals in the college community, as it potentially can influence all of the faculty and students, which is typically the greatest population on a college campus. There are a number of ways to incorporate sustainability into the curriculum. These include sustainability majors, minors, and certificate programs, transfer agreements with four-year college sustainability degree programs, sustainability course offerings, course offerings with sustainability themes, and college wide sustainability book themes.

Implications for Policy

In addition to the implications for practice for college leaders, as outlined above, it is also important to note implications for policy that concern decision makers on a more regional or national level. The following implications for policy are addressed in this section: (a) implement national policy standards for sustainability, and (b) provide training in sustainability for community college leaders.

Implement National Policy Standards for Sustainability

The findings in my research suggest a need for national policy standards for both sustainability practices and incorporating sustainability into the curriculum. In Chapter 1, I emphasized that there is a need for higher education to play a significant role in supporting sustainability. The cases selected for my study were leaders within community colleges for a number of sustainability practices along with having added a sustainability component into their overall curriculum. A key finding in my study was that these leading colleges in sustainability shared a widespread use of sustainability practices and had sustainability incorporated across the curriculum. In order to support other community college leaders to become similarly engaged in sustainability, it would be helpful to have a national standard for community colleges that addressed both sustainability practices and the incorporation of sustainability into the curriculum. The federal government currently has a number of regulations and policy initiatives under the Sustainability Program Area that are designed to support sustainability practices nationwide

(FedCenter). It is possible that the federal government could enact a policy concerning sustainability practices in community colleges.

It is worth noting that the Association for the Advancement of Sustainability in Higher Education recently released the Sustainability Tracking, Assessment and Rating System (STARS) 1.0, which “promises to become a standard road map for campus sustainability” (Judy Walton, personal correspondence, October 17, 2009). STARS 1.0 award points recognize colleges and universities for engaging in sustainability practices in three categories: (a) education and research; (b) operations; and (c) planning, administration, and engagement. “STARS provides a standard, comprehensive way to compare the sustainability performance of higher education institutions and to measure a single institution’s progress over time” (Paul Rowland, personal correspondence, October 8, 2009).

Provide Training in Sustainability for Community College Leaders

In addition to national standards for sustainability, my findings also suggest training in sustainability for community college leaders, including the president and others. One of the findings in my study was that all of the college presidents reported the need to educate themselves concerning the topic of sustainability. The areas of sustainability that require training require the definition of sustainability that includes all three aspects of social equity, economic prosperity, and environmental integrity; the number of different sustainability practices that are possible on a college campus; how to incorporate sustainability into the curriculum; and how to conduct assessments of sustainability impacts. One way to address this need would be to incorporate a sustainability class into doctoral programs in community college leadership. Further, my findings found that all three of the colleges in my study incorporated sustainability across the curriculum through a variety of techniques. This supports the need to provide training for faculty throughout the institution. Similarly, my findings concerning the widespread use of sustainability practices supports the need for sustainability training for staff, faculty, administrators, and students throughout a community college. Therefore, one suggestion is for the American Association of Community Colleges to add

sustainability to their published list of “Competencies for Community College Leaders” (AACC) and then support it with training for all staff, faculty, and student leaders at community colleges across the country.

The findings in my study emphasize the value of support from the college president for sustainability initiatives on a college campus. There are a variety of ways that the president can provide support to sustainability on a community college campus. This section reviewed five implications for practices related to the president: (a) educate oneself about sustainability, (b) involve campus community in sustainability initiatives, (c) integrate sustainability into strategic plan, (d) support sustainability at every opportunity, and (e) support sustainability across the curriculum. There were also two national policy implications: (a) implementation of national policy standards for sustainability in community colleges, and (b) provide training in sustainability for community college leaders.

Implications for Future Research

Given the paucity of published research concerning sustainability at community colleges, and particularly the role the college president plays in institutionalizing sustainability at community colleges, there is a tremendous amount of opportunity for future research. To use a metaphor, if a community college sustainability research topic were represented by an automobile looking for a parking spot in the published world of higher education sustainability, there would be industrial-sized parking lots awaiting the energy efficient vehicle. The following suggestions for future research are addressed in this section: (a) financial savings from energy efficient investments, (b) integrate sustainability into the curriculum in community colleges, (c) incorporation of sustainability into strategic plan, and (d) expand on limitations of study.

Financial Savings from Energy Efficiency Investments

All three colleges reported the widespread use of sustainable practices, and each of these colleges included both energy efficiency activities along with investments in green energy. Two of the colleges had purchased and installed their own solar arrays, while the third had invested in green power. In addition, two of these colleges reported that a primary barrier to the institutionalization of

sustainability concerned the lack of financial resources. Combining these findings, I think it would be valuable to research the actual savings at community colleges that have invested in energy efficiency and green power. Similarly, I think it would be valuable to research the potential savings at community colleges from investing in energy efficiency and green power. This research could in turn provide impetus for colleges who are reluctant to invest in sustainability because of a lack of financial resources to realize the potential long term financial advantages of investing in energy efficiency or green power. For colleges that had already invested in sustainability, some of the research questions follow. What type of energy efficiency and green power investments has the college made? What is the estimated payback time for the college's investment in energy efficiency and green power? How was the initial investment in energy efficiency and green power financed?

Integrate Sustainability into the Curriculum in Community Colleges

All three colleges incorporated sustainability across the curriculum both inside the classroom and outside the classroom. Each college offered sustainability degrees, and all had various ways of incorporating sustainability widely into their curriculum. Haigh (2005) emphasized the importance of greening the curriculum, but his research was not focused on community colleges. There is virtually nothing in the literature concerning the integration of sustainability into the curriculum in community colleges. From a macro perspective, it would be valuable to understand how many colleges are incorporating sustainability widely into their curriculum. From a more micro level, there are opportunities for understanding the various ways that colleges institutionalize the incorporation of sustainability into the curriculum. Several research questions follow. Does the incorporation of sustainability into the curriculum usually occur from a top down or bottom up approach? Does the integration of sustainability into the curriculum typically occur as part of a shift in priorities at the colleges, as was the case in my study? What are the most effective strategies for integrating sustainability into the curriculum?

Incorporation of Sustainability into Strategic Plan

The incorporation of sustainability into the strategic plan at community colleges is another worthwhile and needed research topic. The literature emphasized that one of the functions of the community college presidency is to incorporate, interpret, and communicate the strategic plan of the college. However, the literature was about college leadership in general, not about sustainability leadership. All three colleges incorporated sustainability into their strategic plan. In all three cases, the president had been instrumental in incorporating sustainability into the strategic plan. Therefore there is a need for research concerning the relationship between the incorporation of sustainability into the strategic plan and the community college president's role in strategic planning. Several suggested research questions follow. In what way is sustainability incorporated into the college's strategic plan? Who was the most influential player in the incorporation of sustainability into the strategic plan? How has the incorporation of sustainability into the strategic plan affected sustainability on the college campus?

Expand on Limitations of Study

There were a number of limitations to this study. These included the small number of cases, the small number of interviewees in each case, and the fact that the interviews were conducted only with proponents of sustainability. Therefore, there are opportunities for further research that would expand on the number of cases, that would involve an increase in the number of interviewees at each case, and that would involve opponents as well as proponents to sustainability. In addition, my study did not involve interviews with any students, so one suggestion is to include students in the interviews. There is also the opportunity to conduct a follow-up survey with a large number of colleges in order to verify the findings of my study. The survey could also include additional variables, including the personal characteristics of the president, such as political orientation and academic discipline, community characteristics, such as political orientation, student characteristics, such as liberal versus technical, and the ecosystem of the area.

Final Thoughts

“Higher education must and can play a central role in preparing students to become informed and responsible citizens in a global 21st century context of inequitable economies, diminishing natural resources and environmental degradation” (Rowe, 2005, p. 50).

My experience conducting this research study has left with the belief that there is tremendous value in looking to the leading community colleges in sustainability involvement to see what can be applied to other community colleges. When I designed this study, I suspected that involvement of the president in sustainability initiatives would be very helpful in institutionalizing sustainability in a college that had not undertaken sustainability initiatives. One thing I learned from the study was that, while the involvement of the president is not necessary for sustainability to occur on a college campus, it is extremely helpful, and therefore of critical importance. Another thing that became apparent from my research was the wide-ranging breadth of opportunities for a community college campus to be involved in sustainability. These include a number of sustainability practices, such as in purchasing, landscaping, and transportation, along with the application of sustainability throughout the curriculum.

My last thought concerns the backdrop of the difficult financial times that community colleges nationwide are facing. I believe this creates a temptation for college administrators to not prioritize sustainability due to more apparent pressing financial needs of the institution. However, I believe that just the opposite perspective is prudent, that sustainability initiatives provide tremendous opportunities for financial savings. These savings are available through investments in green energy, such as solar arrays and conservation initiatives, and through recycling programs and water conservation initiatives.

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