DISCOVERING AN EMERGING, INSTITUTIONAL CULTURE OF SUSTAINABILITY AT A MIDWESTERN STATE UNIVERSITY

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ABSTRACT

by Benjamin Ritter

With increasing public interest in issues of sustainability, many new programs are developing in higher education to research this growing field. Exploring site specific aspects of sustainability offers an opportunity to clarify the goals and objectives for an individual institution. This process is often a first step in exploring how sustainability goals are defined and achieved on an institutional level. These site specific, foundational elements can then be used to define the site culture of sustainability efforts and goals.

This study attempts to discover critical, common aspects of culture that would indicate the goals and objectives among faculty members who teach sustainability related courses that have emerged within an institution of higher education. An applied ethnographic perspective was used to examine how language and individual intent could be used to establish common currents of meaning and institutional goals and direction. Aspects of language were key elements which were examined to seek out issues of shared meaning and intent. The language used in the faculty interviews and various site documents showcased the lack of unified definitions among faculty who teach sustainability related courses. The lack of a clear, shared language led to a deeper investigation of culture that focused on common actions and meanings rather than words alone to demonstrate social construction.

Findings from the study reveal that while instructors of sustainability courses used many different words to explain goals and intents, the underlying direction of the goals and intents were strikingly similar. This awareness provides a lens that can be used to more clearly explore how faculty members define, influence, and create institutional culture and meaning. This lens can then be used to form a conduit which can connect, unify and define sustainability efforts in education at a specific institution. This understanding may be used to better direct and inform future, site specific development in the area of sustainability.

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CHAPTER I

DISCOVERING AN EMERGING INSTITUTIONAL CULTURE OF SUSTAINABILITY

Global interest in sustainability has increased dramatically in recent decades. Issues of sustainability have become examples of how different groups define cause, direction, severity, and appropriate language to explore the issues in their own, specific ways. Individuals and group populations see issues differently. Each individual population creates understanding and meaning based on their own experiences and these understandings are, as a result, site specific. Creating overarching meanings of sustainability issues first requires a understanding of how smaller subsets of these larger populations communicate. For large scale conveyance of information related to sustainability issues, it becomes necessary to understand how the smaller population subsets define their culture of sustainability. It is the exploration of a site specific, composite culture of teaching faculty that is explored in this study.

Various academic disciplines have examined the issue of sustainability and have created individual definitions and approaches to the issue (Anderberg, 2009). Many promising findings have been made in various academic disciplines as a result of this examination. However, academic methods to reconstruct these findings into comprehensive solutions to sustainability problems are difficult. Answers that meet the diverse needs required for true sustainability problems have remained elusive. For the many specialized areas of study to reconvene, a shared, socially constructed culture that encompasses a common language, vision, and methodology for referencing this culture must also emerge. Discovering this emergent, shared culture is the focus of this study.

Sustainability creates a significant challenge for traditional academic study as it does not fit neatly into a specific discipline. The examination of a single, discipline specific, approach to understanding sustainability fails to fully explain and explore all the facets of this issue. Ecological, economic, or industrial based views of sustainability can mean the common issue has many divergent areas of research (Boyle, Everett & Ramage, 2003). To fully examine such a large issue, an interdisciplinary approach becomes necessary. While discipline specific cultures have developed to dissect issues into individual research areas, these individualized cultures often struggle with reintegration of discoveries from knowledge learned in other disciplines. Difficulty sharing information due to cultural differences in language, viewpoints, and methodological constructs stem from discipline specific cultures and often stand in the way of a synthesis of the complex issue of sustainability.

The public interest in sustainability issues has triggered many disciplines of academic research into action. This seems to indicate an emerging series of social drivers which are informing this movement. It is argued in this study that these shared cultural influences must be emerging to have concurrently evoked interest and response from such a diverse variety of academic disciplines. Therefore, to fully examine an interdisciplinary issue like sustainability, there first needs to be a better understanding of this emerging, interdisciplinary culture and the teaching faculty who are driving it.

Applied Ethnographic Perspective

As the cultural influences that affect and inform development of sustainability courses are of interest, this inquiry employs an applied, ethnographic strategy. Specifically, this study seeks to understand the common social drivers that inform and direct various disciplines of research to work toward creating interdisciplinary courses on sustainability and, in turn, direct and inform an institutional culture of sustainability.

The applied nature of this inquiry is a critical strategy to the study. Research that is intended to illuminate a societal concern would be classified as applied research (Patton, 2002; Creswell, 2003). While sustainability issues are indeed a global issue, the area of investigation for this research focuses on the interdisciplinary voice and culture of sustainability efforts at a midwestern university. The emerging culture under examination reflects the interdisciplinary culture of the entire institution. This culture is theorized to be emblematic of a society that encompasses all of the academic disciplines at the institution (Schein, 2010). Understanding this shared culture and the aspects that create it can aid in understanding the patterns that define other institutional cultures. Examining the interdisciplinary trends, inspirations, and beliefs of factions within institutions can provide a valuable insight into better understanding future research. Patton (2002) described applied research as being aimed at the holistic solution of an issue or problem which is exactly what this study proposes to be the central issue requiring further examination.

Understanding culture falls into the realm of ethnographic research (Patton, 2002; Creswell, 2003). By understanding and uncovering similar issues of culture and direction that indicate a common theme or direction of sub units within the university, the

interdisciplinary university culture emerges. Any circumstances that indicate or deny a shared experience or ideology can then be used to explain the culture of sustainability in this institution's academic arena. It is Schein's (2010) assertion that culture is socially constructed and based on the shared views of individual players. The Schein understanding of social construction directs this inquiry to investigate the importance of the views and voices of these key informants that are likely shaping an emerging culture. Interviews and observations of the faculty members teaching sustainability courses on campus offer a primary lens to view potential aspects of shared culture. Additional insights that can inform understanding of social construction can be observed in the various artifacts and site documents related to these sustainability based courses.

Social Constructivist Perspective

Social constructivist theory also guides the inquiry as this study looks to understand the constructed or composite culture of the faculty teaching sustainability courses. While previously the university structure fostered limited interdisciplinary creation of culture, the issues of sustainability mandate that for successful solutions to be made, an integration of the ideas of many disciplines is required. This synthesis of ideas and methodologies first requires a language and ideology base that supports this sharing of information and understanding. These shared, socially constructed components can then be argued as the basis of an emerging culture that unites and defines how this process occurs. It is also proposed that this shared, emergent culture could be viewed as being emblematic of the university's collective culture of sustainability.

The developing, shared social characteristics that define a particular shared culture among these institutional leaders are a primary focus of this inquiry. A critical research paradigm to investigate how these cultural aspects are expressed is one of social constructivism. Patton (2002) explained, "Culture is that collection of behavior patterns and beliefs that constitutes standards" (p. 81). This inquiry seeks to understand how a group of key faculty members and departments at the institution define this collective, institutional culture. As understanding this collective culture is the key focus of the inquiry, an applied ethnographic approach is proposed as the initial step to gaining this insight and perspective.

Integrating the Theoretical Orientations

Applied ethnographic examination offers the opportunity to reflect on and illuminate the shared, collective culture of all of the academic disciplines within the university setting (Patton, 2002). A great deal of previous research has been conducted on the phenomenological experiences and knowledge within academic disciplines, but phenomenological exploration struggles to fully explain larger, institutional meaning and intent. This study seeks to inform how these shared realities and ideologies that have developed as a result of discipline specific research, can now reconstruct to inform and direct an interdisciplinary, ethnographic voice or culture of sustainability at the university level.

The idea that human perception is not real in an absolute sense and that it requires a shared social construct to have meaning is key to social constructivism (Patton, 2002). Social Constructivist Theory offers critical strategies to illuminate and review areas of

social concern as this study looks to understand the constructed reality of faculty teaching sustainability courses (Patton). Of particular importance is the idea that the individual perception of each person is unique, and is just as valid as any other (Crotty, 1998). In this sense, each individual culture must not be perceived as being more or less important than any other. Each viewpoint is equally valid and worthy of respect and examination. The socially constructed methods of adapting to situations are central to the creation of a group's culture and provide the basis of examination for this study (Schein, 2010).

It is also important to understand how the examination of the individual values and beliefs of these key informants may help to inform a more complete understanding of an institutional culture of sustainability. The cumulative culture and ideas of several academic arenas are likely to force many of the individual elements of understanding to be countered with differing views. Initially each of these concepts are likely to be held in equal esteem by their associated groups, but joint examination may encourage either synthesis of previous ideas or new understanding that inspires a completely new viewpoint. This explains a critical point of this understanding of social constructivist theory. While each discipline's viewpoint may begin the collaboration process having equal value, its merit and value may change within the larger academic society as a result of gaining further knowledge. The nature of scientific advancement relies on the premise that each understood theory is only as relevant and correct as long as it can be supported (Sankey, 1997). These common, external social drivers that are encouraging each discipline's study of sustainability are also demanding a reintegration of these concepts to meet the needs of society as a whole. It is this reintegration and synthesis of ideas that is believed to be proof of an emergent, university culture of sustainability.

Purpose

The purpose of this inquiry is to establish the characteristics that define an emerging culture that guides, directs and informs sustainability courses at a midwestern, state university. The trends and patterns that define individual, discipline specific cultures could be used as a framework to describe a common culture that may be useful to understanding the institutional culture of sustainability. A clearer understanding of this shared culture would be helpful for future instructors and administrators who are looking to create interdisciplinary approaches to the teaching of sustainability. This inquiry ultimately seeks to explore the emerging culture of sustainability in an effort to create a coherent, unified vision of sustainability at the university.

This study investigates culture by examining the views of faculty members who are responsible for developing and conducting sustainability related courses on a university campus. By examining how faculty member vision informs course development within academic disciplines, this study seeks to explore how these key faculty voices shape the larger, institutional culture of a university. The beliefs and guiding issues of these faculty members are of interest as their experiences are likely to shape and inform their classes. The ideas learned in these classes will likely shape and inform the ideas and views of students which then become a significant defining point for establishing an institutional voice on sustainability issues. By seeking out the elements of shared culture among these key teaching faculty members, it is believed that a valuable lens to view the university culture can be established to explore the issue of institutional sustainability.

Focus

The focus of this inquiry is on the identification and deeper understanding of those social drivers which direct and inform instructors of sustainability courses. These shared influences can help describe the emerging culture of sustainability at an institution of higher education. This identification can then inform other institutions of higher education, to ultimately further develop sustainability courses and implement an interdisciplinary approach to teaching sustainability.

Research Questions

To adequately describe and lead an interdisciplinary course in sustainability, an accurate and thorough understanding of the issue becomes necessary. As a result of the site specific nature of this issue, a careful examination and understanding of the institutional culture becomes critical to accurately reflect the views of the institution and not just the views of an individual. While individual voices and opinions are vital to creating shared culture, this study intends to provide a knowledge base that documents how these individual voices join to define an overarching, institutional culture. To more fully understand this emerging, institutional culture of sustainability an applied ethnographic approach is taken. The following questions will be used to drive the study:

1. What are the experiences that guide and direct the faculty who teach sustainability courses on campus? How do they define what guides them?
2. What are the shared experiences or themes that could describe an emerging, interdisciplinary culture of sustainability education at this institution?

3. What are the issues driving faculty who are initiating and leading this movement?

Researcher Perspective

While the researcher is intended to be objectively observing events, it is also understood that the experiences of the researcher have an influence on observation and analysis (Patton, 2002). As a result of being an employee within a university and having outside interests in production agriculture, there are distinct effects that these points will likely have on the study.

As a faculty member, I have a close relationship to manufacturing technology and university academic life which also informs my view of the local culture of sustainability. With over ten years of experience as an instructor at an institution of higher education, I have had the opportunity to work with the Society of Automotive Engineers (SAE) at the campus level, as well as serve as the national collegiate advisor for the organization. Teaching about the fields of manufacturing technology and power and energy, while also having had the opportunity to be involved at both the business and academic levels, has been a great opportunity to gain additional personal insight.

As a fourth generation farmer on our family farm and a fifth generation farmer in the county, I have been raised with an awareness of how important it is to be a good steward of the land and environment. Agriculture will not maintain its ability to be profitable or sustainable if not properly managed. The importance of each generation carefully maintaining the Earth for the succeeding generations may be a new concept for much of the world, but it is a common, if not universal, ideal for anyone involved in

production agriculture. Barry (1989) defined the concept that each generation of people are custodians of their world and can do a better or worse job of passing it on to later generations as intergenerational justice. This concept of intergenerational justice explains and reinforces the central idea that each generation has an obligation of working toward sustainability to preserve the world for future generations. The agrarian experience has been a profound influence in my foundational understanding of the culture of sustainability, intergenerational justice, and life in general.

Manufacturing looks on sustainability in terms of environmental impact and resource management to balance the effects of manufacturing processes on the environment. My experience in the agricultural sectors looks at the same issues but from different viewpoints of soil conservation, soil fertility and animal welfare management. My personal understanding and experiences of seeing how the same issues can be viewed from markedly different vantage points has strongly affected my views and understanding on the issue of sustainability. These experiences have also created interest in my own mind on how different segments seek to find solutions to similar causes.

With experience in both of the state's two largest economies, agriculture and manufacturing, I have had significant exposure to policy and culture considerations regarding sustainability. I have also had a significant amount of experience working and learning in the academic university setting. My unique knowledge and understanding offer me a unique lens to better understand the culture of sustainability within the university.

Significance of the Study

When seeking to understand sustainability efforts, the role of local culture becomes critically important. This inquiry adds to the field by identifying the cultural issues associated with creating interdisciplinary understanding of sustainability education at a midwestern state university. By establishing the experiences, strategies and deeper understanding of the players within an institution, patterns and trends that develop can be critically important in advancing future research. While this inquiry is intended to illuminate the area of institutional sustainability at one site, it can help focus the lens of research at other institutions as well as become a component that explains even larger issues of sustainability.

This interdisciplinary examination of culture is intended to showcase new methods of conveying information among different academic disciplines. It is therefore surmised that the interdisciplinary sharing of information is, in turn, the evidence of an emergent culture with respect to sustainability. As Schein (2010) explained:

> The culture of a group can now be defined as a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has all worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems. (p. 18)

This inquiry provides a method to document this pattern of basic assumptions regarding sustainability.

Exploring this emerging culture advances sustainability education by providing a look at the shared culture that must exist to allow interdisciplinary study of a topic. The ability to have a mirror to examine the culture of sustainability offers a powerful tool for self-examination of institutional culture. This re-examination and adaptation are central components for explaining group culture, but they also provide an opportunity for outside groups to internally assess their own cultural constructs. This transference and re-examination of cultural meaning from one setting to another may promote other audiences to share in a deeper understanding of sustainability.

Definitions

To accurately define the circumstances and issues that shape this study, it is necessary to specifically define some of the critical terms. While they may have multiple meanings, it is critical to define their meaning for the purposes of this study.

Applied Ethnography is a method used to seek deeper understanding of culture and provide illumination of cultural norms or group ideals that exist in a population.

Culture is the composite behaviors and beliefs characteristic of a particular group of individuals with characteristic emphasis on communication and language.

Sensemaking is the process of developing and defining socially shared beliefs and how they will guide strategic choices. Literally, "it means the making of sense" (Weick, 1995, p. 4).

Social Constructivism finds its base in the idea that "Constructivism…points out the unique experience of each of us." (Crotty, 1998, p. 58 It also points out that human reality is different from the natural, physical world and requires appropriate investigation

to consider these ideas. (Guba & Lincoln, 1990) The central idea is to gain information about how a population or culture defines reality in a given setting.

Society of Automotive Engineers (SAE) International is a global body of scientists, engineers, and practitioners that advances self-propelled vehicle and system knowledge in a neutral forum for the benefit of society. (SAE, 2012)

Sustainability as a term will be derived from the United Nations Brundtland Report. It refers to the ability to meet the needs of the present, without sacrificing the ability of future generations to meet their own needs. (Brundtland, 1987)

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

A review of some of the relevant literature surrounding the issues of teaching sustainability and defining local units of culture are covered in this chapter. A conceptual model is also offered as a framework for this chapter to provide a visual representation and explanation of the cultural factors driving sustainability education. This study explores 1) how instructors of different disciplines describe and define sustainability, 2) the experiences that guide and direct faculty in teaching sustainability courses, and 3) the shared experiences or themes that could explain an emerging interdisciplinary culture of sustainability at a university.

Before this examination delves too far into literature that explores the culture of sustainability, it would be appropriate to explore the term, sustainability, itself. One of the basic assumptions of this dissertation is that sustainability has an individual, local definition that greatly varies within populations of the world. While a review of literature shows evidence that the culture of sustainability is indeed comprised of many localized units of study, the ability to share this information among many educational disciplines requires a language and format that are universally shared and understood. It is this reconstruction of structural elements of sustainability that is of particular interest in this study. This process requires the creation and sharing of similar language and values associated with cultures and their artifacts in order to convey meaning (Patton, 2002; Schein, 2010). All of these points indicate something much larger than one central

phenomenon; they indicate a creation of an emerging culture to explain the topic. Therefore, an applied ethnographic approach will be used for this study.

The Institutional Nature and Culture of Studying Sustainability

The United Nations (UN) has refocused attention on sustainability by declaring 2005-2014 the Decade on Education for Sustainability and Sustainable Development (Howard, 2008). This action by the UN has reinvigorated a great deal of research worldwide, with much of it happening on college and university campuses around the world (Howard, 2008). Interest in examining sustainability with a more complete vision has been a trend that has been gaining momentum in the last decade and has been looking for an approach to make it possible.

A process of sensemaking at each university site emerges as a potential area of investigation. The social and economic drivers in each campus, college, and department subunit can vary widely. As a result, the means by which a university unit responds will require individual consideration. While researchers like Howard (2008) introduce the importance of individual-environment study, this inquiry is intended to expand on previous inquiries and explore how these individual or departmental relationships combine to create an interdisciplinary, university wide, language and culture of sustainability. This process of integrating the experiences of many individual relationships then becomes an excellent candidate for applied ethnographic research to explore emerging culture.

Conceptual Model

As this study works primarily from an applied ethnographic perspective, the conceptual model underscores the importance of the constructivist standpoint (Patton, 2002). The model portrayed uses a circular pattern based on what Crabtree and Miller (1992) referred to as Shiva's Circle of Constructivist Design. This design is intended to stress the ongoing circle of learning and how new information causes reconsideration, or destruction, of old or existing theories. As individual experiences lead to questioning, examining, and interpretation of findings; this new understanding forces a reevaluation of previously held knowledge.

This process of culture creation is vital to this study and it demonstrates what Kuhn described as a paradigm shift within the university structure (Patton, 2002). Kuhn's definition of paradigm shift refers the changing of the basic assumptions of a person or group (Patton, 2002; Sankey, 1997). It is also relevant to discuss the importance of the process of paradigm shifts as a way to understand culture in the constructivist viewpoint.

This ongoing circle of investigation is essential to learning in higher education (Ratcliff, 2011). Recent developments in the literature suggest that unique changes are now occuring in the study of sustainability. While traditional academic study has broken off pieces of sustainability issues for study, the gained knowledge as well as societal interest and pressure, are forcing these pieces to be reconstructed to answer interdisciplinary questions of sustainability. This reintegration of subset knowledge

appears to be forcing a new culture and language to share findings. The social pressure driving this reconstruction of knowledge into a holistic solution appears to be driving an explosion of a new, shared cultural middle ground.

The conceptual model in Figure 1 demonstrates the key social drivers of culture. These key drivers change as a result of information sharing. As academic insight filters out to the public sector, it changes the perception of the culture as a whole. This changed perception or attitude then reshapes the direction of the academic study to reflect the new societal norm. These drivers are believed to constantly readjusting and realigning as the process of sensemaking alternates from the public sector to the academic arena. Current trends and issues seem to be indicating a growing interest in sustainability issues. This interest and focus are igniting the flame of institutional knowledge in the area of sustainability. These unique knowledge bases appear to be site specific cultures of sustainability that reflect the cultural drivers of their respective communities.

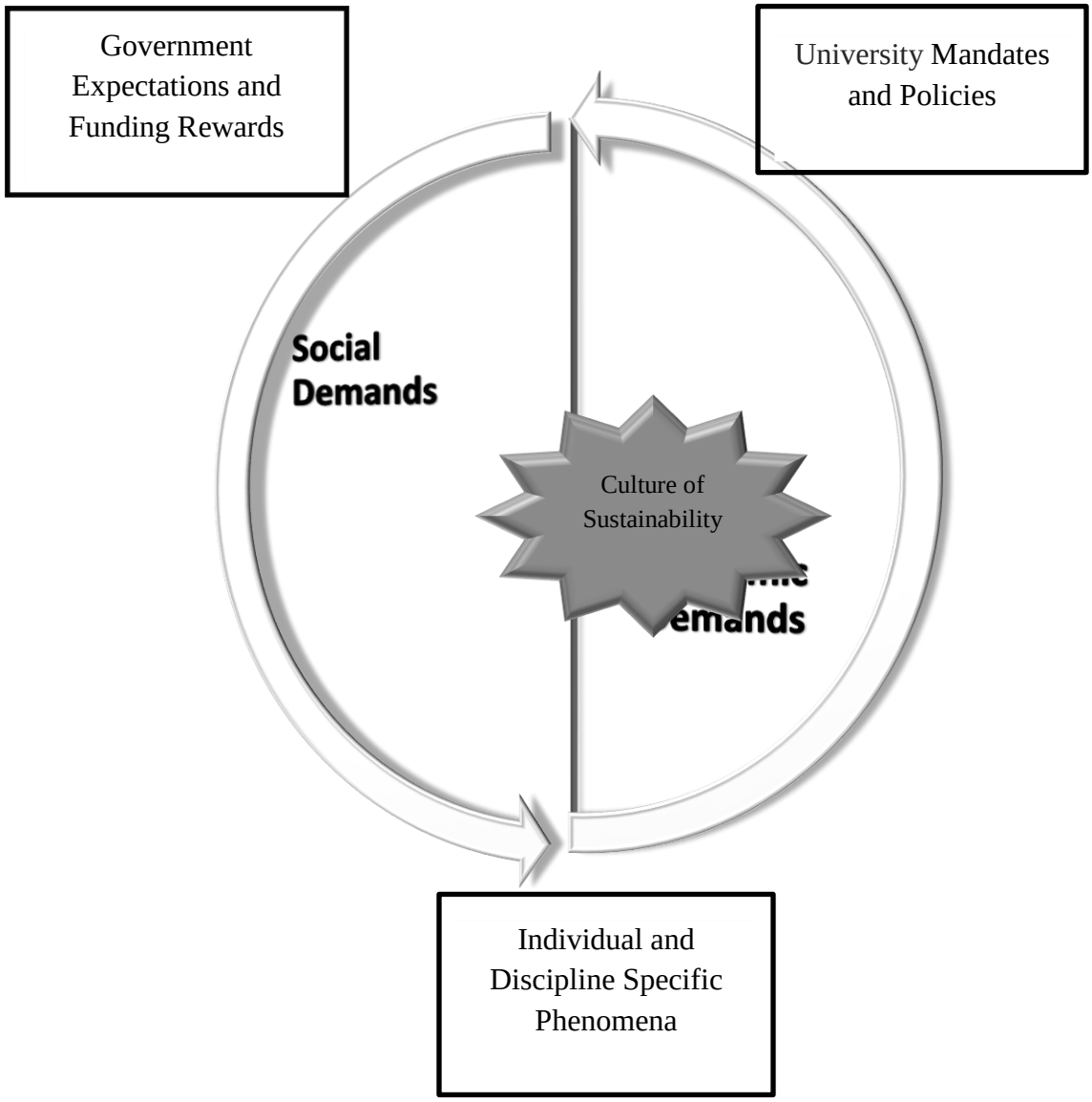

Figure 1. Key Social Drivers of Culture

Teaching Sustainability

One of the most interesting points of sustainability education comes from the unique viewpoints each setting has on the matter. This section is intended to offer an overview on some of the basic tenets that surround the development of university sustainability programs. By examining the underlying forces that define and shape the teaching practices, a more complete view of the situation can be understood.

Defining Sustainability

The term sustainability has come to have many definitions, but for purposes of this study, it finds its base meaning in the United Nations definition of the term. The largely acknowledged, world definition of sustainability was adopted in the 1987 United Nations (UN) report, *Our Common Future*, also commonly referred to as the *Brundtland Report* (Brundtland, 1987). This report stated, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, p. 43). While this definition is somewhat general, it serves an important purpose by providing a common starting point from which society at all levels can build (Boyle, Everett, & Ramage, 2003).

The Brundtland definition was adopted by the university in this study during a 2008 campus initiative to promote and organize campus sustainability efforts. This is a critical point as simply defining and agreeing on the meaning of the term has proven to be the first step in a long process of developing a sustainable system (Boyle et al., 2003). Defining the method of achieving sustainability is no doubt difficult as it takes on meaning and importance based on institutional culture in each setting (Howard, 2008). Specifically, Howard (2008) claimed:

> Understanding the lived experience of the person-environment relationship must be the starting point of such educational efforts and the development of a language to describe person-environment relationship is essential to the goal of re-orienting education for the values of sustainability. (p. 302)

This means that while the Brundtland Report has provided a working definition of the concept, there are still diverse and differing opinions on how to implement and achieve this goal.

Interdisciplinary Study of Sustainability

Interest in examining sustainability with a more complete vision has been a trend that has been gaining momentum in the last decade. Academic circles have taken notice of this interest and vision and have been investigating for an approach to make meaningful study in this area possible. Shriberg (2002) explained:

> The concept and term *sustainability* has the potential to motivate stakeholders toward this long-term, systemic approach. However, the current usage of 'sustainability' is largely restricted to ecological issues (thus neglecting interrelated social and economic issues), and is often controversial and confusing. (p. i)

This also belies the point that each scholarly discipline has its own methodology, language and culture associated with sustainability issues and that these diverse perspectives have created road blocks in interdisciplinary education in this area.

Interdisciplinary education required for completely covering the issues surrounding sustainability goes well beyond typical discipline specific study (Shriberg, 2002). Simply creating a few new courses in various disciplines will not be enough to adequately broach this topic. To create a true picture of the issues surrounding sustainability, widely divergent areas of study must now come together. This point

creates two separate issues. One is that this is a radical departure from the traditional, Germanic, education models in most midwestern universities.

The other key idea is that universities do not typically change rapidly, and there seems to be an emerging voice from many areas that dictates that this issue receive immediate attention and action (Axelson, Sonesson, & Wickenberg, 2008). It is for this reason that demonstrated, long term, comprehensive, solutions for sustainability need to be well established at a university level. The need for this change needs to be required by the university as a whole, but the methodology for making this goal happen, will need to come via consensus of the various components within the institution. This creates a unique political framework in that power and responsibility need to be moving freely and with speed that is uncharacteristic of the current model.

Conservation issues, as discussed by Peterson, Russel, West, and Brosius (2010), which by definition, are sustainability issues can also be used as a lens to shape this inquiry. The Peterson et al. intent seems to emphasize how diverse interpretations and viewpoints on a subject aid in creating a more complete vision of the topic. The contention is that practitioners are aware of the limits of their own research lens. Additionally, the individual areas of study have already examined many of the issues surrounding sustainability within their academic confines. The knowledge they already have is leading the awareness that a "step across cognitive and disciplinary borders" is required to fully understand the issues of sustainability (Peterson et al., 2010, p. 6). This supports the argument that a study of institutional culture needs to be made to start to identify how these forces are interacting to reconstruct a culture of sustainability.

Peterson et al. (2010) also described the Kuhn model of paradigm shift as advances in learning take place (Sankey, 1997). Kuhn's model of phase shift is a critical point to this type of sensemaking process as it explains the constructivist viewpoints at work in the process of creating culture. This scientific method of problem solving, that is prevalent across the university structure, requires openness to many different ideas and ways of approaching a problem or issue.

In this case, the individual disciplines within the university may initially have preconceived viewpoints on the issues that comprise sustainability. Each of these views initially has equal merit, even if they counter each other. As the core areas negotiate ways to merge and create new ideas and challenge existing philosophy, cultural knowledge advances (Schein, 2010). This advancement in knowledge comes from testing, documentation, and joint sensemaking that either reaffirms previous knowledge, or disproves it so that enlightened ideas can replace the old, misinformed concepts. But to advance to this point, a common language is required, and a culture to allow the functional interaction of disciplines must be developed and cultivated.

Germanic Influence on Higher Education

The rapid expansion of midwestern colleges and universities in the 19th century occurred in a time when the academic field felt a large influence from Germanic origins (Ratcliff, 2011). The prevalence of western European settlers in the area were likely comfortable with this setting as it was emblematic of their own culture of origin. The academic freedom of the Germanic academic model not only fit the Americanized view of individual freedom of discovery and pioneering, but also offered a method to do it in an

orderly way (Ratcliff, 2011). This simultaneous structure and freedom of academia found a natural fit within the culture of the midwest.

The Germanic university model for study has become very effective at deconstructing topics into focused units of study (Ratcliff, 2011). This process of in-depth, discipline specific analysis has come to be emblematic of the typical university system in the region. In contrast, the issue of sustainability has shown itself to have a larger societal component that requires interdisciplinary solution to be effective and meet the needs of society.

A key assumption of this research relates to the role of colleges and universities in advancing knowledge and information for the benefit of advancing society. This idea informs the notions that as sustainability issues grow in social consciousness, academic fields have an obligation to help enlighten and inform this area of study. Academic disciplines have evolved to critically investigate specific areas of human life by sub-grouping issues and exploring those issues through a single academic lens. Therefore, they face challenges when trying to reintegrate various academic models to create university wide, interdisciplinary explanations to meet the needs of the society.

Germanic style divisions of academic study have become an American tradition as well. As these divisions have become distinct disciplines, these disciplines have also developed research methodology, practices and language that distinguish each discipline's culture. For example, in the 18th century the diverse study of philosophy included areas that we would now refer to as biology, physics and engineering (Knight, 2005). The social demands on learning during the age of enlightenment required increasingly distinct units of analysis, which in turn created different cultures of interest

and study. As time has gone on, this emergence of discipline specific learning has become entrenched as standard institutional culture.

Many colleges and universities in the United States have historically adopted the Germanic style of dividing universities into various units of hierarchy and academic study in an effort to more critically examine areas of research. While this type of in depth, critical analysis has helped dramatically increase the amount of information known to modern man; it also forces a compartmentalization of academic fields. This separation has fostered great academic learning, but it has also created sometimes dramatic cultural divisions within academic disciplines.

Sustainability as a topic challenges this discipline specific viewing of an issue (Boyle, Everett & Ramage, 2003). Areas of ecology, biology, marketing, construction, technology, business and many others have already defined what sustainability issues mean to their area (Boyle, et al.). But difficulty arises from deciding how to construct these discipline specific viewpoints into a larger construct that explains the over-arching culture of sustainability that resides within the academic structure of an institution.

Understanding Culture

The site specific nature of sustainability topics appears to be due to the specific group culture differences of each institution. As a result of the critical importance of institutional culture on the issue, an examination of the site culture is essential to gain a clear view of the situation. Both individual and group negotiation of sensemaking based on available information is a critical piece of this study.

While phenomenological examination has been the model for much of the previous research on sustainability education to date, it appears that an integration of the key phenomena must now occur to share information effectively in several diverse areas of sustainability research (Howard, 2008). This integration of individual ideas and perceptions is typically shaped by cultural constructs (Patton, 2002). So it is argued here that the integration process of these academic areas is socially constructed.

The emerging, shared language and value negotiation required for sharing thoughts and ideas related to sustainability transcend the views and ideals of a small subset of the academic field. For effective interdisciplinary communication to occur, there first needs to be a shared language and methodology to facilitate this exchange (Patton, 2002). It is this shared culture, or blending of multiple sub-cultures that seems to be giving rise to a new interdisciplinary culture within academic institutions. This emerging and shared culture requires an applied ethnographic examination to explore the facets that define how this new culture is both separate and related to all of the contributing areas of academic research on sustainability.

Sensemaking

The process of making sense requires careful examination for this inquiry. This area of the inquiry will borrow a great deal of understanding from Weick's (1995) explanations as they relate to the term and the idea of sensemaking. A key factor in establishing awareness about the sensemaking process, is relating the role of history to this process. "Sensemaking, as a focus of inquiry, is only as significant and useful as are its most recent exemplars" (Weick, 1995, p. 64). Weick's explanation can be used to

show that while it is relevant to understand the history of an organization, it is the recent understanding in the collective memory of the organization that shapes culture. The current thoughts in the minds of individuals define how they make sense out of a given issue as culture is an iterative, evolving process. While history may be a predictor of how understanding is made, it is by no means the definitive marker.

Understanding that the process of making sense is essential to defining culture is vital to this study (Schein, 2010). Realizing that historical context may guide this process is important. However, what becomes more vital is capturing the current thoughts of the group and how they can cause a group to deviate from their historical norms. Weick's (1995) ideas of the sensemaking process become foundational in understanding this new process of developing a culture of sustainability.

Identifying Organizational Culture

Describing the organizational framework for this inquiry serves two primary functions. First, it will allow a lens to examine how the university and its component teaching departments are viewed by the researcher and faculty. And secondly, it can offer an explanation of how the experiences of this site could inform the development of other institutions as they work to create curriculum relating to sustainability. This inquiry will reference Schein's (2010) definition of a group's culture:

> The culture of a group can now be defined as a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has all worked well enough to be

> considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems. (p. 18)

Bolman and Deal's (2003) explanations of leadership and how people create organizations also aids in understanding some of the underlying relationships at work in establishing culture. The idea that people need each other and have symbiotic roles is a basic assumption for defining culture in this study. Bolman and Deal referred to this as the Human Resource Assumptions that organizations exist to meet human needs, and that for an organization to thrive, the organization must successfully meet the needs of the people it serves. Additionally, the organizations require the talent of its members to meet these needs. These ideas are central to this inquiry. The organization exists to serve the surrounding population, and understanding and developing the ideas within the surrounding culture are critical to the organization's success.

Examining this process of information sharing and the epistemological role in sensemaking has been a research focus for Anderberg in recent publications. These articles are of interest as they investigate the issues surrounding how individuals make sense of a situation and contrive language. Anderberg (2008) focused on the experiences that lead to an individual's change in language use based on lived experience. Guba and Lincoln (1990) explained that the human world people live in is different than simply examining the natural, physical world they inhabit. Therefore, the human world must be examined uniquely. This premise explains that understanding a human or group perception is not an absolute idea. To fully understand reality, it requires first understanding the social constructs that a group uses to define their reality or circumstance (Guba & Lincoln).

These articles explore the key foundations that lead to the relevance of this study. The exploration of the elements of culture must be examined before a complete culture can be understood. The unique aspects of site specific aspects of culture are central to understanding the localized view of sustainability.

Anderberg (2009) asserted that many people have identified the need for competence-based curriculum, but there is a research void when it comes to exploring the methods of *how* to meet this need. Therefore, the issue in need of further research pertains to how these different players will interact to create and share information. This interaction of several different influences and players will need a framework to share information coherently (Anderberg, 2009). Again, this requires a common language, symbolism and understanding. This movement clearly marks the need for a divergence from existing phenomenological research to an applied ethnographic inquiry. An examination through an applied ethnographic perspective will provide a process of sensemaking among a diverse group of individuals.

Moral Purpose

Sustainability is a cultural issue that requires understanding of what Fullan (2007) referred to as having moral purpose. For organizations to become successful leaders, they are likely to display four characteristics that motivate people to achieve the goal of sustainability. Fullan further proposed that for leadership and change to occur in a culture there must be 1) a distinct, group feeling of making a difference, 2) strategies that motivate people to tackle difficult issues, 3) an ability to hold people accountable via measure and debatable indicators of success and 4) ultimately assessed by the extent to

which it excites intrinsic commitment. These four tenets ultimately shaped the initial research questions of this inquiry, and will ultimately be the points that indicate the existence of a group culture in this area.

Answering questions that arise from sustainability issues are often initiated by groups to create change and work towards common goals, which is a clear demonstration of Fullan's first point of displaying moral purpose. Issues like energy conservation and landfill use can be used as examples that may inspire interest, but they also help explain how these groups seek to make the next steps in solving issues of sustainability. Cost of energy or garbage disposal can inspire these groups to come together which motivate groups to find common solutions and strategies to diminish negative environmental and fiscal concerns. These motivations and strategies can be used as exemplars of Fullan's second point of displaying moral purpose.

Once these cultures create systems of dealing with their issues of sustainability there are several aspects that hold the populations accountable to their commitments. Issues of increasing costs of energy, diminishing space for refuse containment, disappearing resources, etc. have a built in mandate that ensures populations keep some focus on levels of success or failure to meet objectives. These final two points ensure a focus on Fullan's last two objectives of moral purpose. Ability to alleviate issues associated with sustainability would be the ultimate assessment of success, and the need for society to progress in a sustainable manner would ensure a societal commitment.

While it is argued that universities have become entities that have multiple cultures within a single organization, the issue of sustainability is demanding a reunification of the individual cultures. To create a unified model that effectively meets

the requirements of a sustainable system, as previously described, the expertise of each area of study will be required. The issue of sustainability has the potential to drive all of Fullan's (2007) issues of moral purpose.

Summary

Each academic division or group involved in this sensemaking process of sustainability holds autonomous viewpoints and concerns. These points are shaped by their individual academic cultures and influenced as well by the cultural perspectives of both the university and society in general. This study seeks to investigate how these individual cultures can reconfigure and integrate, to become a shared culture that meets the needs of the growing study and exploration of sustainability efforts. It is also important to remember that sustainability is an emerging subject area that has not yet gained the understanding that informs the classical areas of study like the natural sciences. The culture of each research site has a deep impact on the understood meaning of the terms relating to sustainability. While the idea that terms and study cannot be interpreted without first understanding perspective is a hermeneutic approach. It is understood in this study that wide reaching, universal understanding and agreement of terms and methods to study and explore sustainability has not yet been determined. With situational and geographic understanding of culture directing study of this particular topic, the site specific terms and methods used in Hermeneutic orientation first require an understanding of the culture of the research site and how it explains sustainability (Patton, 2002). This inquiry strives to provide that initial step in the discovery and explanation of the culture evident among faculty teaching sustainability courses at this university.

CHAPTER III

METHODOLOGY AND PROCEDURES

Research Site Relationship to the Researcher

The name of the school in this study, Robert Blum University, is a pseudonym. The name is not arbitrary in nature, and may assist the reader in understanding context of the study. Many of the state's universities already give reference to their location, or being state institutions, in their proper names. This added to the difficulty in masking the identity of the institution in this study with a generic identity.

Robert Blum is the namesake of Blumfield Township. This is the township to which my family emigrated, from Germany, in the 1850s. Specifically, they settled in Frankentrost which translates to "comfort of the Franconians" (Immanuel Evangelical Church, 2011). In the 160 years that my family has been in this same basic area, there have been many influences that have shaped me as a person. The farm and this area continue to be a comfort to me and the values learned here shape me in all aspects of my life.

Robert Blum, a mid-19th century German, became a martyr for German citizens seeking freedom and individual rights in an oppressive society. Blum was a moderate, liberal philosopher who did not believe one people, or culture, should rule over another (Chastain, 2004). He was a gifted speaker and organizer that believed strongly in religious freedom and individual rights, which were radical ideas in 1840s Germany (Chastain, 2004).

Sustainability issues often fall into a perception of being a radical agenda as well. However, sustainability, as described and explained in this study, is in no way believed to be partisan, but rather pragmatic. Blum fought for advancement of what were then considered radical, partisan ideas of individual freedom required for the betterment and preservation of mankind. This study seeks to advance the issues of sustainability that may be considered liberal and radical today. Instead of viewing sustainability as a liberal cause, this study simply views sustainability efforts as a way to find better methods to preserve the world in which we live. In that sense, my effort to advance this cause is in some sense a point of homage to a man who shaped the immigrant culture of my ancestors who, in turn, shaped my perceptions.

Research Site and Participants

RBU is a school with 120 years of serving as a state university in the midwest. The institution began its service to the state as a business college and historic normal school for educating teachers. While the university has a proud history based in teacher education, it has grown and expanded beyond a state and regional role to a national and international institution that encompasses more than 200 academic programs at undergraduate, masters, specialist, and doctoral levels. These programs are divided among 37 academic departments, and eight college subunits.

The participants involved in this study, are the instructors at RBU who design and/or teach courses under the broad heading of sustainability courses. For the purposes of this study, sustainability courses are defined as having a specified intent to explore and teach sustainable or "green" practices listed in the master course syllabi. These

instructors are the central units of analysis for this inquiry. Semi-structured, open ended interview questions as well as researcher observations are the key components for data collection in this study (Patton, 2002). These interviews were then recorded for later coding to investigate any patterns that emerged in the research to indicate the shared elements of an emerging culture.

The student base at RBU is comprised of 21,600 undergraduate and 6,700 graduate level students. The principal race composition of RBU is 4% Black/African American, 1% American Indian, 1% Asian, 2% Hispanic/Latino, 2% unspecified and 82% white. Roughly 3% of the total student base is international students, 3% are from outside of the state, and 94% are in-state residents. Evidence of this and additional demographic information, is included in Appendix A of this document.

The average student to faculty ratio at RBU is 18:1 when full and part time instructors are considered. The 777 full time instructors at the institution are divided by rank as follows: 277 (35.6%) full professors, 157 (20.2%) associate professors, 226 (29%) assistant professors, and 117(22.8%) instructors.

The curricular process is guided by an academic senate composed of members of each of the academic areas of the institution. Members of the academic senate are chosen by the various academic departments and are subject to the rules and nomination requirements of each of the department by-laws. All full time faculty members with the rank of instructor or higher are eligible to serve, but some of the academic departments have more selective requirements. The academic senate is one of the key organizational structures of the institution, and its full constitution and organizational rules are included

in Appendix B for reference. The political structure and guidelines for the Academic Senate are critical tools in understanding this sensemaking process at RBU.

As discussed earlier, "Sensemaking, as a focus of inquiry, is only as significant and useful as are its most recent exemplars" (Weick, 1995, p. 64). Weick's explanation can be used to show that while it is relevant to understand the history of an organization, it is the recent understanding in the collective memory of the organization that shape culture. The academic senate and curricular process at RBU are clear tools to observe this institutional sensemaking process. This process allows documentation of how current understanding of curricular need and culture evolve at the university. By following the process of how courses navigate the university approval process, an excellent opportunity develops to observe the aspects of social construction and creation of culture that can inform this inquiry.

Site Documents and Artifacts

In addition to interviews, the master course syllabi and course syllabi created by these participants were the principal site documents gathered. These syllabi reflect both the approved university framework for these courses and the individualized framework used in class settings. Syllabi may also reflect the individual guiding forces of the faculty responsible for their oversight and design. Additional artifacts of mission statements, visions and goals revealed by the participants, can then be used to further inform the information gained in the participant observations and interviews.

All course syllabi are first approved at the departmental level, then the college, and finally the university level through a procedural governing body referred to as the academic senate. The RBU academic senate constitution has a very specific procedural guideline that is currently in place. The leadership characteristics required for a faculty member to author a course and shepherd it through the procedural process also lends a view into the leadership skills required for faculty to initiate courses in sustainability at RBU (Fullan, 2007).

Research Paradigms

Social constructivist theory and applied ethnographic principles guide and shape this inquiry. The importance of gaining insights about culture and how people make sense of circumstances is a critical feature of this inquiry. Understanding the shared components of institutional culture regarding teaching of sustainability is central to the purpose and focus of this study. Meaning and reality are collective creations of members of a group, and therefore culturally relative (Patton, 2002).

Social constructivism as a research paradigm allows the inquiry to view how the culture of this group of institutional leaders is described and constructed. Patton (2002) explained, "Culture is that collection of behavior patterns and beliefs that constitutes standards" (p. 81). This inquiry seeks to understand how a group of key faculty and departments at the institution define this collective, institutional culture. This collective socially constructed culture is the key focus of the inquiry, and can then utilize an applied ethnographic approach to gain this further insight and perspective.

A critical component of this inquiry was to learn about the individual views of sustainability education and how they work through the group sensemaking process to create an institutional voice. It is the social and created culture associated with the issue of sustainability that this inquiry seeks to uncover. Keeping a clear view of these ideas was essential to this process.

Procedures

The interactive nature of the research subjects and researcher requires a close interaction. This intimate relationship of the researcher to the study requires an in depth explanation of how the researcher builds the research (Creswell, 2003; Patton, 2002). As Patton explained, member checking or informant review allows the participants to review and validate that the researcher accurately understood the ideas being conveyed in the data collection process. Member checking of interviews and regular review of researcher memos were used to provide a critical account for researcher bias and add trustworthiness to research findings (Creswell).

Data Collection Integrity and Trustworthiness

Researcher memos that document the progress of the research, and issues associated with data collection, create data for analysis (Patton, 2002). This ability to recall the thoughts and ideas that were present at a period of time can help the researcher recall and aid readers in gaining additional insights that explain points of interest within the study (Patton). Patton also explained that fieldwork descriptions mark observable human experiences by providing thick, rich detail and add context to the observations for

further explanation of researcher observation of data (Patton). These research documents serve as a valuable tool in making sense and meaning from the interviews, documents, observations and artifacts that inform the study (Patton, 2002).

The data collection and analysis were used to add context and understanding to the sustainability efforts at RBU, 2) determine a university-wide method of verifying the appropriateness and practicality of sustainability education methods, and 3) explore and explain the elements of culture that define a university wide culture of sustainability at RBU.

Data triangulation is a method of verification in qualitative inquiry. Since no individual viewpoint or method can ever fully examine a problem or issue, triangulation serves as a way to see the same information from several different vantage points (Patton, 2002). Being able to see the data with new vantage points can allow for better, more complete, analysis. This more complete analysis, in turn, greatly increases the trustworthiness of the study (Patton).

Data triangulation, as described by Patton (2002), was researched in the form of interview recordings, site documents, artifacts and fieldwork provide a first line of triangulation in this study. Investigator triangulation in the form of member checking also adds to the trustworthiness and triangulation within the inquiry (Patton, 2002). Research question two and three serve the purpose of exploring not only the researcher's interest perspective on emerging themes, but also the participant's perspective on emergent themes.

Participant Selection

Participants were purposefully selected based on whether they taught or authored a course at RBU with a specified interest in covering sustainability topics. Courses were initially identified by their appearance in the 2011-2012 university course catalog, turn became a site document of interest in establishing the study. Once the courses were designated, the instructor of record was contacted to explain the context and intent of the study and to schedule a time for the interview to be conducted. The relevant courses to this inquiry are listed in Appendix F.

Informed Consent

The participants were selected as a result of their teaching or designing a course, or courses, that are specified in the master course syllabi as being a sustainability related course. The master course syllabi are required to give a generalized account of the core course objectives and learning outcomes and were the primary criteria in selecting participants. As a result of the dependence of this research on interviews from human subjects, Institutional Review Board (IRB) approval from the university was required and secured. An electronically scanned copy of the approval letter is included in Appendix C.

Interview subjects were well informed of the aim and intent of this applied study. The applied nature of this inquiry required respondents to have a full understanding of not only why they are a part of the study, but how they are to be primary participants in establishing both culture and validity of the study. Signed releases were obtained from all subjects to verify their understanding of their role in the study and a blank example of the form is included in Appendix D.

All interview responses were recorded, and interview respondents were given full opportunity to review the finished data in effort to guarantee that the work reflected their actual views and intent. Additionally, the interview respondents were given generalized, anonymous designators and the opportunity to opt out of the study at any time. Allowing individual anonymity protects the subjects from later scrutiny that could come as a result of their participation in this survey.

Interview Format

Semi-structured, open ended interview questions were used as a data set for later analysis in this study (Patton, 2002). The interview approach offered an opportunity for the researcher to guide the participants toward the research questions this inquiry looked to explore. An interview guide as recommended by Patton (2002) helped make sure each participant was asked the same questions, as well as ensuring that field notes that accompany the interviews were created in essentially the same format [see Appendix E].

Post interview memos were also made to add to the trustworthiness of the survey by adding additional detail that may explain circumstances or points more fully. These post interview memos allow for an opportunity for the researcher to record any thoughts or incidents from the interview that may help preserve meaning and intent gained from the interview process. This ability to reflect on the thoughts and feelings of the researcher after the interview processes offered valuable insights that helped recall meaning during the coding process.

The specific interview questions allowed for emergent themes to be uncovered as a result of constant comparative methods. "Comparisons can also be important in

illuminating differences between programs in evaluation" (Patton, 2002, p. 56). Discovering and explaining the differing ideals of sustainability is central to examining how these ideas merge to create a shared voice and culture.

Member Checks

Member checking of the interview process was employed in an effort to add to the trustworthiness of the study. Allowing participants the opportunity to review the interview data and initial interviewer findings gave participants an opportunity to verify that their meaning and intent have been accurately recorded and analyzed. This is a valuable means of promoting trustworthiness in this inquiry as sustainability issues tend to vary greatly based on personal views and beliefs of individuals.

The ability to conduct interviews in a systematic and consistent way is important to being able to reliably and repeatedly ask interview subjects questions is a key aspect of interview data collection. The ability to ask subjects the same questions with the same prompting questions adds to the reliability of this study. Interview protocol and the interview guide are included in Appendices D and E and are offered as a method for the reader to better understand this key aspect of data collection in the study.

Additional verification came in the form of group evaluation of the research. As a result of the collective nature of culture and the emphasis of culture on this study, the participants involved were given the opportunity to review the completed study results to verify the accuracy and intent of the inquiry. This final member check acknowledged that the findings of the study credibly represent the emergent culture regarding sustainability at RBU.

Purpose

The purpose of this qualitative inquiry is to more clearly understand the emerging institutional culture that defines and directs sustainability and related teaching initiatives at Robert Blum University. This study used applied ethnographic research strategies and social constuctivist theory to examine an emerging culture at RBU. Culture then, is defined as the collection of beliefs that constitute "standards for deciding what is, what can be, and how one feels about it" (Patton, 2002, p. 81).

By selecting courses in the course catalog that relate to sustainability education, a population that seeks to define and shape the voice of sustainability at RBU can be identified for inquiry. It is this key group of faculty that created these courses, shepherded them through the academic curricular process and conducted these courses that provide the principle units for analysis. These key informants comprise the group that is examined to provide insights regarding an emerging culture of sustainability at RBU.

The method of applied ethnographic study used in this study has its roots in social science. Issues of sustainability are of current societal concern and relate to many different aspects of life. Examination of sustainability requires understanding and integration of areas like of public policy, science, sociology, and economics. As a result, effective solutions to sustainability issues require an interdisciplinary examination for solution. Establishing the cultural norms that are required for this ethnographic research also require the ability to observe how the culture defines itself in a cultural sense. The terms, traditions, language and meaning associated with a culture are all socially

navigated points. It is this process of social construction that in turn informs the ethnographic culture that is observed.

The aim of qualitative inquiry is to gather in-depth information regarding human or group behavior and the driving forces behind that behavior (Creswell, 2003; Patton, 2002). The human aspects of sustainability education and examination are core aspect for this inquiry. This makes qualitative inquiry an essential means to gaining greater insight into the subject. This method of analysis allows for rich detail to be gathered in observations and semi structured interviews. It is this detail which can then be used to examine and explore the aspects of an emergent culture on the RBU campus. The information gathered in participant interviews, site document analysis and researcher observations were used to create the primary data that were analyzed for this inquiry. Therefore, the primary method of investigation used in this study is the interview of participants (Patton, 2002).

Focus

The focus of this inquiry is to identify the social drivers that can help describe the emerging culture of sustainability at an institution of higher education. This identification will then inform other institutions of higher education to ultimately develop and implement an interdisciplinary approach to teaching sustainability.

Research Questions

The research questions allow a semi structured approach to interviewing participants. These questions allow response to the specific areas of interest to this study, as well as offer the participants the opportunity to provide additional information that

may help inform and enlighten the research on how the social forces in the field are influencing them individually (Patton, 2002). The ability to better follow individual sensemaking will aid in establishing the constructivist issues at work (Patton, 2002).

1. *What are the experiences that guide and direct the faculty who teach sustainability courses at RBU? Or in other words, how do they judge what they are doing is correct?*

Instructors were likely to have personal values, ideas, and beliefs that come across in the course, and this question engages the instructor in the process of describing their sensemaking process. This process of justification and solution mapping were theorized to be directed by culture. While it has been shown in previous literature that discipline specific culture is what drives this individual process, this study aimed to identify trends that may identify shared cultural points that exist across the university.

2. *What are the shared faculty experiences or themes that could describe an emerging, interdisciplinary culture of sustainability education at RBU?*

This second research question offers the instructors the opportunity to reflect on common themes that extend beyond their individual view of sustainability at RBU. This question also allows a level of member checking so that the themes the researcher derives can be directly compared to themes the participants may be observing.

3. *What are the strategies and issues driving faculty initiating and leading this movement?*

The third research question was an effort to explore the personal issues that are directing faculty members to explore aspects related to sustainability in educational settings. The aspects that define leading with purpose, as described by Fullan (2007), are

to define and create; 1) sense of purpose, 2) strategies to create action, 3) creation of debatable metric of progress and success, and 4) mobilization of this sense of moral purpose.

Faculty member interviews were audio recorded and transcribed by the researcher. Open codes were used to capture points that could be used to define the points that could indicate the elements indicative of a shared culture of sustainability at RBU. Careful attention was given to conduct interviews in person and in the faculty member's department to allow the opportunity to gain insight from the individual research site. Field notes to record information regarding details of the interview also added the ability to capture and code elements that also explain these elements of culture. Additional levels of trustworthiness in the study were generated by member checking where interview subjects have the ability to verify that the information coded in the interview is accurate (Patton, 2002).

Data Collection

Critical site documents include the master course syllabi for courses in sustainability at RBU, as well as course syllabi. RBU employs a curricular oversight process which institutionally mandates an approved master course syllabus framework as well as a more classroom or course specific syllabus. As a result of master course syllabi differing from actual course syllabi, these site documents were examined and considered separately. These documents served as key data components that indicate supporting information in the form of external textbooks and articles, as well as exploring external professional affiliation which helped explain and add validity to information taught in the

course. All of these points were used to evaluate common themes or issues that were used to indicate the presence of an emerging institutional culture of sustainability at RBU.

Additional site documents came in the form of departmental, college, and university websites, meeting minutes and publications that speak to the mission, vision and goals regarding sustainability within the institution. These documents were then used to either show commonality or disagreement within the university's organizational structure, or uncover trends and issues that may define an emergent culture of interdisciplinary teaching of sustainability at the university level. As these documents are created and approved by the university, they can be perceived to have a relatively accurate reflection of the individual and institutional indicators of culture. Since the university is a public institution, these documents are freely available in the public domain and require no special ethics clearance to access.

Written thoughts which chronicle researcher thoughts formed a critical data source in the study. These written memos help to capture thoughts and ideas that occur as the study progresses. These insights into the study offer a critical lens to helping the reader follow the researcher. These memos offered the opportunity to record thoughts on the analytic process and record key insights gained throughout the data collection process.

Additional trustworthiness is offered in the follow-up interviews. These follow-up opportunities allowed the research subjects to verify the accuracy, meaning and intent of the information gleaned from their interviews. This opportunity allowed the interview subjects themselves to verify the meanings found during the research process. These

opportunities to review and verify meaning also help to ensure that the information discovered was not just the feeling and observation of the researcher, but was also reflective as the group that made up the basis of the study.

Data Analysis

Theory that emerges from researcher observation and interviews, and is inductively generated from these experiences, is known as grounded theory (Patton, 2002). Open coding further allows trends and themes to emerge in the research to allow the research the opportunity to speak for itself. Despite the best efforts of the researcher to be objective, there are always aspects that are a matter of perception on behalf of the researcher (Patton, 2002). Using a grounded theory method of analysis allows the critical ability to allow the research to speak through its own voice and add to the overall trustworthiness of the study.

As the data were collected, files were entered into an Nvivo 10^{TM} file to aid in organizing data. The software also allows a method for coding data for analysis. This method of coding and analysis allows remarks to be embedded in the data to help the researcher and future readers follow thought process of the study (Patton, 2002). This method of data storage also offers an opportunity for readers to potentially engage in researcher triangulation as they can closely follow the thought process and evaluation of the initial researcher (Patton).

Researcher Perspective

I am an active participant in the study by nature of my involvement at RBU. As a faculty member in the School of Engineering and Technology at RBU, I have greater

access to the university than an outside researcher. Although I am researching from within the institution, the level and stature of the intended subjects meant that I observed members of my peer group. While these instructors are peers, they are from many different disciplines which affect their understanding and viewpoint of sustainability.

Patton (2002) related that "absolute objectivity of the pure positivist variety is impossible to attain" (p. 93). This point acknowledges that the researcher will have some points of bias. By documenting my views and experiences as a researcher, it is my intent to account for any bias that may come from my previous experiences. The inclusion of this supporting information is intended to aid the reader in assuring the reader that they are accurately and reliably seeing my interpretation of the inquiry.

As discussed in chapter one, my background in production agriculture as well as the auto and manufacturing industry likely impact my views of sustainability. While data triangulation methods and a constructivist viewpoint helps to add to trustworthiness of the study, a more complete understanding of my own experiences helps the reader to more completely explore my research perspective.

CHAPTER IV

RESEARCH FINDINGS

Review of the Purpose

The purpose of this inquiry was to uncover potential characteristics that could indicate an emerging culture of sustainability within an institution. Of particular interest is how these characteristics direct and inform sustainability courses at a midwestern, state university. The supposition of this study is that elements and patterns that define individual, discipline specific subcultures cultures of sustainability could be used as a framework to describe a larger, university culture. This knowledge would be useful to understanding the institutional nature and culture of sustainability. A clearer understanding of the shared elements of culture would be helpful for future instructors and administrators who are looking to create truly interdisciplinary approaches to the teaching of sustainability.

Since the notion of culture is central to applied ethnographic research, the discovering or establishing of core elements of culture is the main emphasis of this inquiry. This inquiry examined the language and information sharing of a key group of informants at the university. Patterns of word usage, meaning, and interdisciplinary commonality were key points of cultural examination within this research. The language and meaning of the terms captured in transcribed interviews established the primary tool to begin this analysis.

Social constructivist theory provides insight into how this community constructs sense and meaning surrounding an issue (Patton, 2002). Since meaning is not prescribed

by one person alone, but rather negotiated by a group; the cultural indicators of sensemaking processes are central to this study. The faculty members who teach sustainability related courses comprised the main participant group of the study, while the words and meanings common to this core group emerged as the primary cultural indicator. Any common themes of language and idea sharing within this group can then be used to establish how the group has developed a common culture to share information and ideas. This process and language of information sharing is intended to offer a lens to more clearly see how this emergent culture communicates and operates within the university.

Academic Structure

Robert Blum University (RBU) has a history of being based in a traditional, hierarchical structure. Individual departments are members of larger college units, and these larger colleges then make up the complete university. Courses developed by instructors need to first attain departmental approval, then college approval, and finally university approval by means of the RBU Academic Senate. This oversight system allows the entire university to have some level of involvement in the creation of the academic course work and is intended to guarantee a university-wide verification of academic credibility.

Participant Selection and Interviews

The majority of data for this study have been derived from personal interviews with faculty who have created and currently conduct courses related to sustainability at RBU. These courses were selected from the 2011-12 university course catalog based on

their stated emphasis on teaching elements of sustainability in the master course description within the course catalog. This focus eliminated special topics courses and seminars which brought the emphasis of the inquiry to rest on established courses. These courses fully achieved approval from the academic senate process within the university and target the individual faculty who made the effort to shepherd the courses through this process.

Thirteen courses ultimately met the criteria of the study, and there were nine faculty members responsible for creating these courses. From these nine targeted faculty members, seven agreed to participate in the study and two declined. The study participants were each interviewed twice. The initial interview for each participant was a semi structured, open ended format to maintain a level of structure and consistency within the study, yet allow for respondents to elaborate on focused points of interest. Each follow-up interview served as a data source and a member check to allow the subjects to verify my researcher findings as well as to clarify and correct any thoughts that may have appeared vague or incorrect in the initial interview session.

Data Triangulation and Trustworthiness

Since no individual viewpoint or method can ever fully examine a problem or issue, triangulation serves as a way to see the same information from several different vantage points (Patton, 2002). Being able to see the data from new viewpoints can allow for better, more complete analysis and greater trustworthiness of the research. These follow up interviews serve as an initial, primary method of providing trustworthiness in the study.

Transcription of all of the interviews also served as a vital method of triangulation to the study. Each of the interview digital recordings was transcribed by the researcher into individual Microsoft Word™ documents. By turning the verbal communication into written words, it became possible to look at the interviews in new ways that added greater depth to the study. The process of transcribing the interviews itself allowed a strong opportunity to review and examine the information uncovered in the interviews. The transcription process also initiated the first layer of open coding which offered the ability to start making sense of the information as it was being transcribed.

Researcher memos that document the progress of the research, and issues associated with data collection, also create data for analysis (Patton, 2002). This ability to recall the thoughts and ideas that were present at a period of time can help the researcher recall and aid readers in gaining additional insights that explain points of interest within the study (Patton). The transcription process also offered an additional ability to reflect and write reflective memos on thoughts and feelings of the researcher through the analysis process. These reflective and analytic memos help to capture the researcher frame of mind and provide an important means of data triangulation for the study.

Site documents also provide a method to verify meaning and provide trustworthiness. The course catalog, published course descriptions, and master course syllabi at RBU served as a principal means of identifying courses and instructors of interest. For courses to be published in the course catalog, they must first have received approval from the university's academic senate. RBU's curricular authority document, which provides the rules and operating procedures of the academic senate group, master

course syllabi and portions of the provost's web page that explain the academic process serve to document and verify the academic process at the university. These artifacts as a result, form critical layers of depth of analysis within the study.

Additional site documents came in the form of university web pages that provide mission and goal statements that verify intent and meaning for the university, as a whole, as well as its academic subunits. These allow the ability to compare and contrast the university's published intent and meaning to the meaning and intent of individual courses offered at the university. These public statements are key aspects of culture and offer an ability to see meaning and vision as they relate to sustainability as established by the university itself and not merely rely on the meaning observed by the researcher.

Research Interview Subjects

As discussed earlier in this chapter, the first stage in answering this question had to do with establishing the interview subject pool for the study. I was initially fearful that the interview group was going to be so large that collecting the information from such a considerable group was going to be quite difficult. Instead, I found a relatively small pool of courses and that many of these courses were actually written by an even smaller number of faculty members.

It was surprising to me as a researcher to see that these courses were the domain of such a small number of faculty members. Of all of the courses offered at the university, only 13 met the criteria of this inquiry. Many of the same faculty members

had authored two or more of the 13 courses that were included in this study. Additionally, I found that these faculty members did not represent a single department, or even just one college within the university, yet that they were a widely dispersed representation of sustainability education authorship at the university.

Therefore, the pool of study participants was largely reflective of the overall university. Three of the seven faculty members were fixed term faculty who teach on annual contract basis, while four operate under university tenure with a significant promise of longer term security. This break down is very much reflective of the ratio of tenured to non-tenured faculty in the overall university. This demographic doesn't signify anything unique, but it does reflect that the ratio of non-tenure and tenure line faculty members in question closely matches the general typography of the larger institution.

Data Coding

Data in the form of memos, interview transcription, interview audio, and various site documents were entered into NVivo 10^{TM} qualitative analysis software for coding. The software allowed a tool to record the open coding of the data to mark key points and ideas within the research data. The first stage of data coding is known as open coding. Open coding is an iterative process, and in this inquiry it became evident that my coding and deductive reasoning would be important to document as my role as a researcher was likely to have an effect on the data and findings.

Going into this research I suspected that there were indeed emergent patterns and a culture that would be discovered. This point is somewhat evident in my analytic

memos. As a result, it becomes important to document this point as what Patton (2002) would classify as Analytic Induction. Analytic Induction refers to the researcher's establishment of rough theories that are revised to fit emerging interpretations in research data (Patton, 2002, p. 493).

During analysis, the three stage approach identified by Patton (2002) was employed. The first round of open coding is where terms, words and ideas are listed and selected and identified based on meaning. Open codes were codes that attempted to capture how the participants were drawn into areas of research and education relating to sustainability. Areas of research, curricular development, teaching roles, and program stakeholders were examples of primary points of interest in the initial layer of open coding of the data. The focus on these areas and ideas allowed the research to use analysis software to revisit these key aspects of the research. An example of how these open codes were grouped into common themes and emergent ideas is offered in Appendix G.

The next layer of analysis came in the form of axial coding where software played an important role. The NVivo 10^{TM} software offered the ability to explore patterns and word usage which help the researcher to see patterns as they emerge and develop. The ability to visualize terms in different ways helped to establish new methods to view the research data and draw interpretation from it. Based on the patterns and information developed from the axial coding sequence, the final, selective coding sequence allowed the deepest layer of discovering meaning. Selective coding allowed the opportunity to focus only on the codes, data and queries within the study that seemed to establish meaning as well as to discard information that clouded the results of the inquiry.

Content Analysis

Written interview transcriptions provided the opportunity to analyze word frequencies and text usage with NVivo 10™ qualitative analysis software. This software allowed additional ways to examine the data of the study that were not obvious upon initial review. Since there was a strong assumption that language would be a key method to understanding this emerging culture, the use of words, phrases and meanings would be powerful indicators of a common language or elements of culture. The software allowed me the ability look at basic quantitative usage of word counts, and also provided graphic interpretation as tag clouds that interpreted words visually to allow new ways of observing the data. This method of examining data would be what Patton (2002) would describe as content analysis which takes into account the number of and use of words and comparison of coding to make deeper sense of research data.

Initial queries that I performed with the analysis software focused on overall word frequency. These queries charted the frequency of words and their stemmed variants over three letters long as they appeared in all of the interview transcriptions. The top words in this query included the words "sustaining, courses, programs, university, students, and academics." This is not too astonishing among university faculty being interviewed about issues of teaching sustainability, but it does provide a layer of common use words within the overall study.

The common use words surrounding sustainability are a key aspect in determining a shared culture. As a result, the ability to have a software program assist in categorizing and viewing the data become a powerful asset in observing the data. The software allowed an effective method to examine the key words used, but it also allowed a new

code structure to be employed. By uncovering the commonly used words, I was also able to code these words and revisit the context in which they were used. All of these opportunities added to the ability to more completely view and asses the information within the data to uncover indicators of emerging culture.

In speaking with the subjects of the inquiry individually, I found two distinct inspirations for developing these courses in sustainability. One driver for creating these courses seemed to come from personal interest. This interest was evocative of issues of personal, moral purpose and was driven by non-academic experiences from outside the confines of the university setting. Four of the subjects in particular had occupational experiences outside of the university that led them to push for changes in the university curriculum to reflect the outside professional world. Two of the subjects had a more pragmatic purpose of catering to increased student interest in new courses dealing with sustainability.

These ideas led me to further investigate my research data to see if there were common themes that developed in word use between faculty that had work experience outside the university research arena and those whose experience was solely within the academic arena. The purpose of this query was not to establish greater or lesser importance of each emphasis, but rather to establish if there was any difference on how these two types of experiences affected how they spoke about the issues of sustainability. The top five words were nearly identical between the groups which would suggest that there is some commonality in word usage.

Of the faculty that I had the chance to interview, the most common element among them was that they shared very little in common in terms of both personal and professional experiences. Even the faculty that worked in the same departmental units had little in common personally, professionally or in terms of research. The interview question probes and prompts were intended to uncover any commonality in the experiences of the interview subjects. However, instead of uncovering commonality the interview probes showcased the unique experiences and aspects of all of the interview subjects. Their vastly varied experiences were interesting to hear, and for me as a researcher it was interesting to see how many different life, career and academic paths had lead these subjects to teaching very similar issues of sustainability.

Avian research, construction technology, industrial management, law, policy, toxicology, international business, and paleoecology cover a fairly diverse set of research and knowledge areas, especially when you consider that the study is only looking at seven individuals. These seven individuals that provided the basis for the study included (all names presented are pseudonyms):

Dr. Robert Munger, Ph.D. Professor, Biology Department faculty of RBU.

Bruce Arn, M.B.A. Assistant Professor, School of Engineering & Technology faculty.

Dr. James Watrous, J.D., Ph.D. Professor, Political Science Department faculty.

Dr. David Colling, D.B.A. Associate Professor, School of Engineering & Technology.

Dr. Van Reese, Ph.D. Professor, Management Department faculty.

Tom Gera, M.S. Director of Sustainable Systems, College of Humanities faculty.

Dr. Nancy Arthur, Ph.D. Assistant Professor, Biology Department faculty.

An interesting point that contrasts with my assumption of similar use of language came in the form of trying to include an interview subject in the study. Dr. James Watrous, J.D., Ph.D teaches in political science. Dr. Watrous was emphatic that he did not teach about sustainability. He repeatedly informed me that he teaches political science and stays only within his teaching area and did not think he would be of value to my study. His political science course met the criteria for inclusion in this inquiry by its description, "Analysis of relationships between politics and public policy in the environmental arena. Emphasis upon policy making process, political strategies, and alternative decision modes." The emphasis on environmental policy met my research criteria squarely in my eyes, but not in his. The only responses I could elicit usually ended like this email response, "This is really not an area of expertise for me. I think others would better serve you. -Jim"

Meanwhile in interviews with both Dr. Reese and Dr. Arthur, they both related how integral Dr. Watrous' course was in developing their interest and understanding of issues surrounding sustainability. Citing the references of his strong influence on these faculty members helped me to convince Dr. Watrous that he was indeed vital to my study. While he later agreed that his course met my research criteria, we both also could see we were using different terminology to define the same issues. Dr. Watrous indicated that the term sustainability suggested political activism, while what he felt what he was teaching was more in the vein of common sense and reason, and this had nothing to do with activism. The issues he emphasized in class were simply application of reason.

Research Question One Findings

The first research question was: *What are the experiences that guide and direct the faculty who teach sustainability courses on campus and how do they define what guides them?*

As I was initially interviewing the participants for this study, I entertained ideas that there were likely strong personal drivers that were probably established in childhood that made the majority of these faculty members strive to advance sustainability education. While there were some faculty who did have some very strong childhood experiences, it was also very common for many of the respondents to report that they just felt like they woke up one day and they were in the midst of teaching and researching sustainability issues.

Dr. Munger explained his metamorphosis in the following excerpt from my interview when I asked how he initially got involved in teaching sustainability.

> (You mean…) did I just wake up one day and all of a sudden it's been abuzz? It's been the new push. The philosophical approach that at least I've had, many have had, about conservation at one point in time….That the grass is green and trees are tall, now let's save them all. And what are we saving and why? What's the purpose of it? I think it just kind of twists the table a little bit to lets us get a little bit better handle on what it is we are doing, and why we're doing it…to maintain some equilibrium as we go forward.

The experience that Dr. Munger credited to his epiphany on sustainability came during a conference on organizational learning hosted by a notable expert in the area, Dr. Peter Senge. Dr. Munger seemed to place a great deal of importance on his experiences studying organizational learning. I considered these experiences, in particular, quite interesting to follow. When I asked him if there was any individual thing that he felt got him to focus on issues of sustainability, he immediately told me that the Society of Organizational learning was integral to his coming to that point. He stated in his initial interview:

> Certainly what would come to my mind is…is SOL. Society of Organizational Learning does a phenomenal job of pulling that all together. It…and in the big picture standpoint, it's not picking on specifics. Again, it kind of speaks to Senge's…approach to problem solving and system analysis.

This element of Dr. Munger's interview intrigued me as a researcher. I was very interested to see if this idea of framing the issue could be a common theme. In preliminary queries and word frequency examination of research data I was able to investigate basic elements of language, but I was aware that many of the faculty described the same phenomena with different words. My experience of having to very carefully translate my purpose with Dr. Watrous had already made me aware of the barrier posed by terminology and meaning. The elements of culture were likely to be somewhat deeper than language alone. My preliminary difficulties communicating with my participants had proven that fact.

The idea of organizational learning struck me during this particular interview and it would reoccur later in the research process as well. The idea showed up in the interview with Dr. Watrous when I asked him specifically how he integrated ideas of sustainability into his course. He replied:

> I don't do it consciously, it's kind of a…how would I say it? It's kind of a conclusion I want people to reach on their own. In other words, I try and explain what is, and the problems with what we have in terms of the environment. Leading one to believe that there are, like in other areas, better, larger approaches than to simply… handle them on a piece meal basis.

Again I was left with the impression that maybe the vein of culture I was witnessing was not in a single, universal element or elements of communication, but rather it was surfacing as a common process of thought. Dr. Watrous seemed to be inferring that he was interested less in how students were hearing his voice, but rather in how they were using his ideas to frame their own. He seemed to be referencing a method of how people could effectively consider numerous elements of an issue, like sustainability, and use these composite elements to make a sound decision. This idea of conscious organizing of many elements of understanding sounded similar to Dr. Munger's organizational learning model. This method of problem solving appeared to be emerging as a common way of preforming a process that could demonstrate idea sharing and development of culture.

My interview with Bruce Arn, the construction program expert at RBU, also seemed to reference a variant of the idea of organizing many interdisciplinary elements of an issue into a coherent solution. Arn explained in some detail that home building was an example of a really varied group of skill sets and to be a truly world class builder, there needed to be a method of organizing and using these diverse skills. Arn referenced this skill set as "best building practices" and explained:

> So if you're going to develop your industry, what direction does your industry go? So Green and sustainability is what we call the highest performing building. And if you are going to teach students the best way of doing something; Green, LEED, BPI…Energy Star…HEERs. All of these programs are part of that.

Arn also went on to explain that he felt there were many people on campus that had an understanding of parts of sustainability. He also explained that he felt most of the people on campus really didn't appear to have a broad understanding of how all the facets of sustainability need to be understood to achieve a viable movement toward sustainable systems. He explained:

> If I were going to critique what we are doing here at RBU, I'd say that probably there's some people who have a small inkling of what *green* is. But (they) think they understand much more than that. (They) really only understand little pieces of it. And they don't understand how comprehensive *green* is. What sustainability is, is a part of that whole program/picture. And I think they could have a much better understanding. I've held a couple little presentations here on campus to teach *green*. And I typically have between 40

> and 50 people show up. But they are typically students, and students from all different walks. I'd love to have it where we could get all the faculty on the same page… of sustainability so that they knew what that meant.

This idea of an overarching synthesis of ideas seemed to be evident and strongly showcased in this interview. The lack of shared language relating to sustainability also seemed to emerge, but more importantly the idea of sustainability issues requiring many facets of understanding to be complete, appeared to be evident.

My interview with Dr. Colling elaborated on this theme of processing and using information as well, but he also included a warning of sorts. Dr. Colling discussed the importance of using many facets of research to answer issues of sustainability as well, but he also discussed the idea of the *greenwashing*. This idea stems from the lack of interest in both people and industry to affect actual change, but rather find ways to repackage old ideas to look new. In his interview he explained this concept with an example from his class:

> I'm going to use the example of this water… what they did was take the label and put a green label on and a green cap and they say it's good for the environment. I suspect nothing's really changed. It's still made in a plastic bottle which is based in oil. It's going to be thrown away. It's not going to be recycled.

This passage explores the idea that teaching about sustainability requires not just a wide array of interdisciplinary skills to draw from, but also shows the awareness of detecting when information has been corrupted or misrepresented. An important part of understanding culture comes not solely in the form of understanding how members of a group act together, but also how they delimit this process as well.

Dr. Nancy Arthur was an interesting person to meet with as well. Dr. Arthur was the youngest of the interview subjects and had spent her entire undergraduate and some of her graduate career attending RBU before coming back to teach as faculty at her alma mater. I thought initially that her relatively short tenure at the university might affect how she viewed inclusion of sustainability education. However, this turned out to be a false assumption. Her experiences in the Biology Department, having started right away in her undergraduate career, really seemed to make her well versed in the overall culture of her department and the culture of the institution.

Dr. Arthur explained in her initial interview that her undergraduate experiences at the RBU Crow Island research station started to shape and establish her views during her undergraduate major, her graduate work, and even her future married life. She was a unique example in the study where the university shaped her in her formative years, and she in turn stayed on to start to shape the university that had such a strong effect on her. Evidence of this point was strongly referenced when she said, "Crow Island changed my life and I met my husband and you know I still go there and I have a lot of really close friends… some of those people are like family to me. Crow Island changed my life in a lot of different ways."

In the interview with Dr. Arthur, I also had the chance to hear her explain how she integrates ideas of interdisciplinary problem solving that were somewhat reflective of Dr. Watrous' views. Both faculty members teach in the same department, employ very different teaching styles, teach some of the same courses, and shared the concept of what Dr. Watrous termed as organizational learning. Dr. Arthur never used the term organizational learning like Dr. Watrous did, which strengthens the argument that there is

not a clear cultural language of sustainability, but the ideas they reference share a remarkable similarity. They both focused on the importance of giving students the opportunity to take many elements of life, look at them critically, and balance solutions to problems holistically. They seemed to indicate that problems of sustainability were not the sole domain of one branch of science, but rather the idea that good solutions required a synthesis of many different areas of expertise. An extension of this idea was shown when Dr. Arthur explained how she likes to challenge students to seek out answers that expand on points from her class. She used the example that no one can be a specialist on everything, so she used the idea that if you were looking for answers to how grasshoppers may affect an environment:

> You know you don't necessarily know the definitive answer, to those questions….right? Well I could speculate that this could be why, but I'm not a grasshopper biologist but I can tell you this about it….and you know, 'What do you think?' kind of a thing.

Dr. Arthur seemed especially close to students and student learning. She described many ways that she tries to initiate student interaction in her classes. She was quite expressive about how she wants to form a foundation of understanding that will help students develop a problem solving approach to their own education. Her involvement as the director of the residential college within the college of Science and Technology is probably the strongest evidence of her student involvement. She has a history of working with students to foster an environment of learning that extends well beyond her classroom.

Dr. Van Reese provided a contrast to Dr. Arthur in terms of student involvement and professional experience. While both have worked almost exclusively within university settings, Dr. Reese has gained his experience at other universities and has come to RBU during the later stages of his career. He has already retired from a southwestern university, but came to RBU and out of retirement for the challenge and purpose of creating a new program based on sustainability within the business college.

Dr. Reese is an expert in international business and was charged with obtaining and directing a US Department of Education grant related to international business and sustainable development. He came to RBU six years ago and in that time he has authored and obtained the grant, as well as authoring the curriculum that will serve as the product the grant was intended to support. The courses are new and so is his program, but he hasn't been able to develop a critical mass of students yet. He explains something that speaks to the student culture of RBU as well as the difficulty in establishing this new program,

> We still are trying to find students that will make it go… What I wanna do this spring (is) go out and talk to some student groups… it's not, what I would call an easy minor. It takes 21 hours. But I think it's relevant. But then, I don't know if you can convince the RBU students of that. I'm still shocked. 21,000 students…well it's like in the second grant, we have money in there…we're paying for the third and fourth semesters of Chinese and…if you look at the world you have to see that China matters. It will matter more. And yet I don't think they can get 10 students in that class. Which, we're paying for totally with the grant money this year. I

> don't even know if it'll continue after this…but we have the first two semesters that are offered here. But again, (only) at 10-15 students. 21,000 and there aren't any more than that? And yet you read about what's going on with this country…you know there are high schools offering Mandarin.

The emphasis on foreign language, particularly the language of a large and significantly growing portion of the world, and inclusion of international business, coupled with in depth study of how policy affects the environment and people of the world are significant points of emphasis in this program. The emphasis on explaining and exploring culture, values and problem solving from many different areas of academic study seem to further prove that interdisciplinary study is a hallmark of sustainability education courses at RBU.

RBU, as an institution, has made inroads toward sustainability efforts, and the role of Dr. Reese is evidence of one of these attempts. Dr. Reese's outside, previous work experience was part of the reason that RBU sought him to develop his program. The last RBU president was a leader in working toward sustainability efforts as showcased with his public involvement in the University Presidents Climate Change Initiative as well as initiating programs to investigate and advance sustainability efforts at RBU. The most notable of the university's efforts can be seen in the form of the *Sustainability is Central* to RBU documents. This published report explains how RBU as an institution, was going to make progress on sustainability issues and has served as a guidepost for the institution since 2008.

One of the key players who advanced these initial sustainability efforts at RBU was, Thomas Gera. Gera worked as a toxicologist for the state for 25 years before he took an early retirement from that position to come to RBU with the express purpose of developing programs that would teach students critical aspects that would prepare them for careers in environmental protection and community planning roles. This practical experience has made Gera quite successful in his career at RBU.

Gera originally worked within the College of Humanities and Behavioral Sciences developing curricula and teaching. Soon he had established a research center that focused on sustainability issues which has been an important part of regional sustainability education. Recently his professional job role has been refocused on making adjustments to the physical plant and facilities levels of the university. As student enrollment has diminished as a result of the state's economy, Gera has lost some of his teaching load but replaced it with responsibilities relating to how the university can implement sustainability efforts in order to cut operating costs. Proof of these points come in the form of recent RBU sustainability reports that document the decreased waste in residence halls, as well as reduced use of electricity on campus as a result of investments in energy saving technology.

For purposes of this study, one of Gera's most important roles is to publicize the courses relating to sustainability around campus. His role in this capacity is not to merely work within his own college, but rather to work toward integrating courses from all areas of the campus. Gera explained his job role in this way:

> My job is to develop new courses and to work with people who have existing courses on sustainability to promote and develop them so that

> we… reach out and have more students trained in the area. And as you mentioned earlier, there's a wide variety and a great diversity in the courses that fall into the broad umbrella of sustainability. They cover courses in the College of Business Administration, there are many courses in the College of Science and Technology, of course, particularly in the traditional Ecology and Environmental Studies fields. There are a number of courses in the College of Humanities, Social and Behavioral Sciences, including Political Science courses, Sociology courses, (and) Anthropology courses, that fit.

And it is this collaborative overtone that is of particular interest in this inquiry.

It became clear early in the study that the common language I expected to uncover had not yet fully developed. My struggles to convince some faculty of their vital role in this study served as verification of this fact. Another came in the form of artifacts and university documents. For instance the university has officially developed their definition of sustainability in the *Sustainability is Central to RBU* document by declaring,

> While sustainability can be defined in many ways, the broadly accepted definition as outlined in *Our Common Future*, a report of the United Nations World Commission on the Environment published in 1987, is the one used by the university. Sustainability consists of meeting the needs of the present generation without compromising the ability of future

> generations to meet their needs. Sustainable systems are those which foster stewardship and wise management of natural resources and energy that allow the needs of the current day to be met while ensuring that vital resources and energy supplies will be available to meet the needs of future generations.

While this definition seems to indicate that the university has a definition of sustainability there seems to be some confusion on this point. One particular indication of this point was how few faculty members were aware that the university had taken the time to make this declaration.

Comparison of the full university definition of sustainability to the abbreviated Residence Life definition of sustainability which states only, "the capacity to sustain current life without compromising the ability to live well for future generations" shows a clear use of the same meaning and intent. It was not surprising to learn that Gera was the author of both definitions. The university mission appears clearly defined in many aspects of the university's published documents, and after discussing Gera's roles at the university, it seems clear that he has been effective at his job of unifying the university's voice and direction on sustainability.

In terms of academic teaching though, this unity has not become prevalent. While it seems clear in the interviews that the driving forces and use of interdisciplinary problem solving seem to be consistent among these faculty members, the terminology they use to communicate these points is still highly variable. While the terminology that faculty members use to explain sustainability is still evolving, a shared culture can still be seen by looking at how all of the faculty members emphasize an interdisciplinary

approach to problem solving. In terms of shared, emergent culture among teaching faculty, this point seems to be a commonality that could be used to argue the existence of a shared culture. While there seems to be a unity at the university level of the definition and practice of sustainability, that unity has not appeared to have made its way down to the individual departments.

One of the most interesting and surprising personal discoveries I made while researching was that I became one of the paths of communication that are influencing this study. While it is Gera's job to connect faculty, programs and curricular items that relate to sustainability, it is not the sole focus of his job. The importance of sharing of ideas and teaching strategy is vital to all faculty members, and Gera cannot be expected to be the only person who facilitates this sharing. As a result, my personal interaction and probes of the interview subjects became the reason that some of the faculty members have begun to share information within the group covered in this inquiry. For instance Dr. Colling and Dr. Reese have made contact with each other to determine ways that they can share information to reinforce their respective courses. Dr. Reese has also come to my own course to advertise his program and explain how it can fit with the power and energy courses that I teach. All of the interview subjects have been actively conversing with me to share information on sustainability programs well beyond the scope of what this inquiry required. These ties themselves have been a result of the communication initiated by this inquiry and also indicate an emerging culture within this group.

The information sharing that occurred as a result of this study was a surprising development. This sharing of information regarding sustainability and the opportunity to listen and hear the feelings of others was what Moustakas (1995) referred to as *being*

with. The idea of *being with* also offers an opportunity for the reader to examine the type of relationship that the research and research subjects had with each other. This idea sharing was a classic example of sharing perceptions and views on both sides of the interview setting. This ability to examine thoughts and ideas allowed a very interesting and enlightening lens to view the subject matter.

Research Question Two Findings

The second research question was: *What are the shared experiences or themes that could describe an emerging, interdisciplinary culture of sustainability education at this institution?*

Some important points become evident in establishing emerging themes of sustainability in this study. Arguably, with a study group of only seven subjects, it becomes difficult to interpolate how this small group could be representative of the institution as a whole. As a result a distinction needs to be made that while the elements of culture this group display may not be transferable to the complete body of faculty at RBU, there do seem to be elements that would indicate elements of a culture within this group as a subset of the university, and that discovery process is one of the primary intents of this inquiry.

While there were no evident similarities in religion, childhood experiences, and previous work experiences, there were ideological similarities that seemed to emerge in the study. The ideas of Fullan's (2007) moral purpose and Barry's (1989) ideas of intergenerational, social justness of sustainability seemed to be evident in all of the

interview subjects. Dr. Watrous was perhaps the most eloquent of the interview subjects when he explained:

> It's every individual citizen's obligation to take no more than they need, and to spoil no more than they have to and return as much as they can, because we are all visitors in this world. We come and we go. And we should leave the earth as untouched as possible, better if we can, neutral at worst. But we should not decide that (just) because things are free or a fad that we do things. Do it because it is the right thing to do.

A vein of moral purpose emerged within the study with this statement that sustainability was, as Dr. Watrous described, "the right thing to do." But the path to this moral purpose of sustainability varied highly. Dr. Munger explained he "woke up" to the teaching of sustainability. Gera left an established career to help ensure there were people getting training to take over for the previous generation of people working in environmental protection. Dr. Reese came out of retirement for the challenge and opportunity of developing a new curriculum surrounding sustainable issues, Dr. Colling and Dr. Arthur slowly evolved into teaching sustainability courses within their existing course structure, and Arn felt a strong drive to integrate sustainability to reflect needs in the workforce.

At the core, the respondents suggested that the idea of rightness was a common driver for each of them as they all related some interpretation of rightness in their interviews. The word *right* or some variant of it appeared in each of the initial interviews as well as the follow up interviews, which led me to look at the word as an aspect of

culture in its own right. The idea of rightness as moral purpose was a clear theme in all of the interviews.

This aspect of rightness was also evident in the field notes and researcher memos that were collected. The course descriptions, course syllabi and university wording suggest that there are relationships and obligations to both societal and the environmental sustainability in which the inhabitants have to each other and to the world. The memos that were collected also mirror this feeling of moral purpose that drove the informants to create their courses in sustainability. There was a tone of moral purpose or rightness that was clear in all levels of the inquiry.

Research Question Three Findings

Research question three was: *What are the strategies and issues driving faculty who are initiating and leading this movement?*

The third question of the study surfaced as an extension of the first and second questions and into an area that could arguably lead to future study. The inspiration that appeared most evident and common to all of the respondents was the idea of moral purpose and social obligation, even when the path to teaching sustainability courses was unintentional, as in the case of Dr. Munger. When Dr. Munger was asked what motivates him to teach about sustainability he responded, "I can't do otherwise. It's the answer." The idea of rightness also came in the form of stewardship, as in the case of Dr. Arthur. She explained the idea in this way, "It's just (a) passion for me, and I want the students that leave my classroom… to be stewards of the planet. I mean this is our home."

This emphasis on the idea of moral purpose was an unanticipated, but recurrent theme in the study. The idea of moral purpose as it is referenced here follows the Fullan (2007) definition of moral purpose in that moral purpose in leadership appears on many personal, individually driven levels. Fullan (2007) proposed for organizations to become successful leaders, they are likely to display four characteristics that motivate people to achieve the goal of sustainability. Fullan further asserted that for leadership and change to occur in a culture there must be 1) a distinct, group feeling of making a difference, 2) strategies that motivate people to tackle difficult issues, 3) an ability to hold people accountable via measure and debatable indicators of success and 4) ultimately assessed by the extent to which it excites intrinsic commitment.

Dr. Arthur's personal emphasis on making a difference in the student's lives is clear in her wish that students will learn to become stewards of the planet which creates one layer of moral purpose. Another layer of moral purpose comes in the form of creating systemic change. All of the respondents took initiative to create, author, and complete the academic senate process to create these new courses. They chose not to simply modify existing courses, but to instead modify the curriculum and create new course offerings to better teach courses relating to sustainability. The drive for them to create courses and shepherd them through this process as a result of their own, personal drive indicates individual moral purpose.

Dr. Watrous showed another distinct level of moral purpose by encouraging students to think about issues from many different vantage points. He stressed that students were not taught what to think about an issue, but rather to concentrate on how

they thought about an issue. He also stressed the point that he did not teach about sustainability as a stand alone issue, but rather how sustainability issues require a certain breadth and width of understanding to create viable, long term solutions.

The types of experiences that surfaced in research question two ended up also explaining the impetuses that were sought in question three. There was no single, evident common experience that led to this shared philosophy. The subjects had very diverse experiences that led them into the process of designing courses centered on sustainability. There was no clear generational explanation, nor was there a common experiential explanation. This may indicate a shared belief that understanding sustainability requires many divergent types of understanding. Each person provides a lens to view sustainability that is of equal importance and provides a unique vantage point to examine the issue. It is the personally driven process of teaching students to examine, value, and understand as many views as possible that is ultimately the core cultural similarity among all of the subjects.

CHAPER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine characteristics that could indicate a culture of sustainability education at Robert Blum University (RBU). My initial research intent was to investigate how common elements of shared culture among teaching faculty could be used as indicators of an emergent, university culture. The words used and the meanings that describe aspects of teaching sustainability were what I initially thought could be used to establish and define a shared, university culture. I did find indications of a common culture, but the elements linking the inquiry subjects came not from the words used to discuss sustainability, but rather in how the subjects explored sustainability.

The coding process that I employed in this study focused first on ideas, and then on key phrases and words with the idea that key words could be used to establish a shared language that would be central to an emergent culture. I struggled with balancing inductive and deductive reasoning at this level. As a researcher, I expected there would be some shared language that would be unique to the interview subjects. I also expected this language to be a key point in explaining how ideas were shared and how this language of idea sharing could be used to explain an emerging culture. The biggest surprise to me as a researcher was that the emergent culture was appearing despite a common language, not because of it.

My intent was to uncover deeper meaning and understanding of an emerging culture, and that emergent culture displayed itself in a completely unexpected way. While searching for data in a data set of both audio, spoken interviews and transcribed, written interviews, I had expected patterns of language to surface. This expectation

proved to be largely incorrect, but at the same time was responsible for surfacing a more reflective aspect of culture. Instead of surfacing commonality in the words used to share information, it was the methods used to share information that appeared as a constant. Even with many different descriptors relating to how the topic of sustainability was explained, the methods on how to reach sustainability goals were strikingly similar.

Summary of Question One

Question one was: what are the experiences that guide and direct the faculty who teach sustainability courses on campus? How do they define what guides them?

This question became a point that highlighted many, highly varied aspects of the interview subjects. At the onset of this inquiry, I had thought that there would be some common, shared experiences that led these faculty members to work towards creating and conducting sustainability courses. Instead, I found guiding principles and experiences that were just as unique as each one of their personalities. Since I was investigating common elements of culture, it became clear that such a varied group of personal experiences were not likely to have a direct, common tie to a shared culture. Even faculty members from the same departmental units had vastly varied experiences that they attributed to their interest in sustainability.

What the interview subjects did have in common was not the words they used to define the issue of sustainability, but rather the ideas they used to define sustainability. I felt this was an important differentiation to make as a researcher. I had initially expected to find common language relating to sustainability. However, after evaluating and viewing the data from the investigation, it became clear that although the words the

respondents used were varied, the ideas they conveyed were not. There appeared to be very little commonality in the terminology any group used to define and explain sustainability issues. The terms green, sustainability, renewable, and conservation, for example, could all be used to explain the larger issue of preserving the environment and limiting negative impacts on the world. While there are many terms that describe this effort, it is the sustainability effort itself that emerged as a constant, not the elements of language that described it.

This awareness led to a deeper understanding of where the research was taking the researcher. I had become aware that I had made a definite change in how I perceived the data. Instead of looking for the language patterns I was expecting, I was beginning to see new patterns that had little to do with language. The patterns I was beginning to observe had much more to do with what one of the inquiry respondents classed as, organizational learning. In fact, the pattern I was witnessing appeared to be most evident in an interview with Dr. Munger when he expounded on the importance of the Society of Organizational Learning and the work of Peter Senge. This pattern of organizational learning follows what Peter Senge (1990) would class as building on a shared vision. The shared vision that emerged in this inquiry centers on teaching sustainability.

Other emergent points that fit the Senge (1990) organizational learning model are the ongoing quest for personal mastery, establishment of mental models, team learning and systems thinking. These concepts emerged in different ways, but they appear to be evident. The quest for personal mastery of sustainability is evident in all of the interviews. Each of the interview subjects explained how they are constantly looking for and adding new material to keep their courses topical. The common mental model that

was evident in all of the interviews was related to the importance of conservation and sustainability efforts. And the final commonality was the emphasis of the instructors on the importance of having multiple viewpoints to solve problems of sustainability. The idea that no one branch of understanding held dominion over another, and that all of the viewpoints were of equal importance in formulating lasting solutions for sustainability efforts appeared as a strong central theme in the inquiry.

The parallel of sustainability education at RBU to the organizational points of Senge was interesting to me as a researcher. The elements of culture in sustainability education seemed to fit well into this organizational model. The elements of language that the respondents used to explain their courses and views on sustainability were varied, but the larger ideas that they seemed to convey appeared as a relative constant. This big picture view or explanation of sustainability seemed to emerge as a strong common experience, as well as what appeared to be one of the only common experiences observed within the study.

Summary of Question Two

Question two was: *What are the shared experiences or themes that could describe an emerging, interdisciplinary culture of sustainability education at this institution?*

As explained in chapter four, this question almost became an extension of research question one. There were no common, prior experiences that could easily explain a similarity in purpose or culture that emerged in the study. Issues of where the respondents were raised, religion, age group, or race did not seem to explain any common

metamorphosis, or path relating to sustainability. Each respondent had a very unique background that had essentially no tie to the background of any other respondent.

There was little that could be used to link the past experiences of the respondents in any way that would indicate a common culture. A key discovery in this research appeared as the common emphasis on teaching students to look at sustainability from many different

viewpoints. This use of many differing views appeared to be an interdisciplinary approach that stressed the importance of understanding many different aspects that surround sustainability issues.

While interdisciplinary approaches were not directly a unifying theme, the instructors' emphasis on seeking out and understanding many different viewpoints were. Several of the instructors stated in their interviews the importance of teaching the students how to learn and make sense of situations. This was evident after hearing instructors explain how they had a responsibility to teach students to solve problems, not just learn issues around a circumstance. Dr. Watrous made this point evident he explained:

> I want people to reach (conclusions) on their own. In other words I try and explain what is, and the problems with what we have in terms of the environment, leading one to believe that there are, like in other areas, better, larger approaches than to simply…than simply trying to handle them on a piece meal basis. So…if you think about…I'll use the Great Lakes as a great example. If you think about the Great Lakes you talk about protecting the Great

> Lakes is to maintain a sustainable balance of water, so diversion doesn't work and…if you want fresh water, contamination doesn't work. And if you want to preserve biodiversity, then invasion invasive species don't work. And if you want to resolve pollution issues you recognize that water pollution and air pollution and mine pollution are all interconnected… that you can't handle it media by media. It's a cross media situation, so I guess what I like to do is point out that the way that we've handled things to this point have left us with very few good options. We've taken all of the low hanging fruit situations to address, and we've tried all the piece meal approaches, and they haven't worked. So we have to think of something new. Which means you've got to think about things in a larger perspective than simply, "I've got a problem, how do I fix this problem." But, a better question is, "I've got a problem and the range of things what's the best way to resolve this problem without creating three more?"

This idea of larger perspective problem solving, or sensemaking, also leads back into the findings from research question one to describe an emerging culture within the larger organization. All of the research subjects seemed to share a common emphasis on the importance of understanding many different viewpoints and academic disciplines in creating cohesive results and solutions to sustainability issues. Schein (2010) described organizational culture as having a pattern of basic assumptions. It is this holistic, interdisciplinary approach to problem solving issues of sustainability education that can be used as a lens to define and explore sustainability at RBU.

Summary of Question Three

Question three was, *What are the issues driving faculty who are initiating and leading this movement?*

The idea of moral purpose as a driving force became evident in all of the interviews. To explore sustainability as a motivating issue to create change in a cultural issue, I used the Fullan (2007) definition of moral purpose. This idea suggests that to become successful leaders in any area, including sustainability, faculty members are likely to display characteristics that motivate people to achieve the goal of sustainability. Fullan further proposed that for leadership and change to occur in a culture there would be 1) a distinct, group feeling of making a difference, 2) strategies that motivate people to tackle difficult issues, 3) an ability to hold people accountable via measurable and debatable indicators of success and 4) ultimately assessed by the extent to which it excites intrinsic commitment.

The tenets suggested by Fullan (2007) seem to be evident in the interview data. All of the interview subjects were interested in efforts that could decrease environmental impacts on the world, which provided a common cause or grouping. The results of question one also meld into question three. Question one explored the strategies that each respondent offered to stress the importance of a well-informed set of viewpoints. This strategy seemed common in the study and appeared to be clearly centered on creating interdisciplinary, holistic solutions to issues. This strategy of instruction also seems to be driven by the personal drive of each of the instructors, and would indicate strategy and personal attachment are closely linked.

Many of the respondents pointedly referenced the idea that the best solutions to issues of sustainability are not going to be found if society looks to find single point issues like cheapest, easiest, or fastest. Issues of sustainability will instead require solutions that meet the needs of all of the players involved, including the needs of future generations. The desire to transform students into a well-informed citizenry which has a broad ability to problem solve was a deeply evident theme among all the respondents.

Conclusions

The examination of sustainability is relatively new when compared to other areas of university study. It does not yet have the knowledge base or long academic history that is associated with more traditional collegiate study. As a result, the language and words that are used to describe circumstances of sustainability have not yet achieved a universal understanding. Documentation and understanding of sustainability issues continue to increase dramatically every year. And while this type of information will likely provide valuable insights to creating a future, universal, scientific language, this universal language has not yet surfaced.

As this new area of learning emerges, the foundational components that support and define sustainability are currently being established. Studies such as this one help to understand and document how this process is progressing. Exploration of cultural issues related to sustainability helps current research establish the direction society will go, and will likely provide a critical glimpse back in time for future researchers.

As discussed earlier, Weick (1995) stressed the importance of adding historical context and understanding to any issue. However, sustainability has a heightened

importance placed on context. Understanding how we are affected by previous generations and how we as a society will affect future generations is a key component to exploring sustainability issues. It is with this understanding that the illumination of issues of culture take on a new level of importance. The insights produced in this type of inquiry, in turn, provide insights into conditions today but also provide lenses to view the issue of sustainability in the future.

Areas for Future Research

Language Issues in Sustainability

The topic of sustainability as we now know it appears to be gaining understanding and awareness quickly in today's world. As a result of the interest in this relatively new area of research, information has grown exponentially. The ideas of many researchers explaining their findings in different ways, with many different words, have amplified the problems associated with lack of a common language. As referenced in this study, a common language of sustainability does not appear to exist the way that languages exist for many of the classical areas of university research.

The lack of common language and descriptors, even within this research site, became obvious during the study. That difficulty becomes significantly compounded when information is shared at different locations and different countries. It is the awareness that a common language surrounding the issue does not yet exist that led me to instead focus on the process of learning and information sharing at this institution.

Several areas of future research could help to more completely understand the culture of sustainability education at RBU as well as to understand the culture of sustainability at other institutions. Certainly a definitive lexicon to describe the issues of sustainability would be of great use as researchers continue to explore this topic. What could help to bridge that gap in communication would be further exploration of the non-verbal elements of culture as they relate to sustainability. Instead of allowing the lack of common cultural language to become a stumbling block, it can become an opportunity to view culture in different ways.

Learning Processes

This study explored how sustainability educators instructed and guided students on how to problem solve sustainability issues. That problem solving effort would be interesting to examine for further insight. The common academic divisions at RBU separate academic areas based on problem solving expertise. Sustainability, however, seems to demand a reintegration of these academic categories. This reintegration or synthesis process could be of value to explore in the future.

Traditional compartmentalization of academic study has worked well to advance learning and understanding for a long time. Sustainability appears to be an instance where deeper investigation requires a broader, interdisciplinary emphasis, which traditional models appear to have trouble facilitating. The institutional politics and ability to work collaboratively across many academic subunits of an institution would be of interest to better understand how to effectively enact sustainability curricula. It is important to assure students and programs receive and benefit from many different

viewpoints, but it is also important to include methods to synthesize all of these viewpoints. Non-traditional education models like fully integrated, interdisciplinary learning could provide some valuable insights to the process of teaching and learning about sustainability.

One of the first steps toward understanding a campus-wide culture of sustainability is to first understand the process by which the group shares ideas. Understanding the ways a group communicates or shares ideas are important. However, there is great potential that comes from a better understanding of the limiting factors of sharing ideas in a developing culture. Advancement of the issues of sustainability is likely to come from fixing the short comings of current problems. Creating the settings that allow for people within a university to clearly share and communicate ideas related to sustainability are significant steps that could foster growth in idea sharing in this field of study.

Faculty can work to improve the language and idea sharing boundaries by simply reaching out to peers that teach courses related to sustainability. As this study showcase, the pool of people that offer these types of sustainability course can be quite small. It would be possible for a faculty member developing a new course to seek out peers at their institution and gain access to faculty experience, course material and methods that could help develop the university wide agreement of meaning and intent that is currently still being established. These grass roots levels of involvement allow the faculty members of an institution to have a powerful effect on developing a university wide culture of sustainability.

The foundational information that individuals and groups in a culture are currently developing will shape and guide their efforts toward sustainability in the future. Just as a faculty member can shape institutional culture by simply seeking out peer faculty members from other areas of the university, the university can foster a growth of understanding and idea sharing by offering internal platforms to gather faculty members into a setting that would encourage idea sharing. RBU has a Center for Sustainability established already. However, the primary focus of this center is to disseminate information to the surrounding community. This current effort serves an important purpose, but it also establishes a flow of information that goes outward. There is a great opportunity to share and disseminate information inward to more fully establish the culture, understanding, and goals of sustainability within the university which has not yet been fully explored.

APPENDICES

APPENDIX A

ROBERT BLUM UNIVERSITY DEMOGRAPHICS

Admissions, Application, and Demographics	
Overall % Graduation (Undergraduate)	57%
Retention Rate (Annual/Undergraduate)	76%
Graduation Rate (Undergraduate)	57%

Robert Blum University Freshman Undergraduate Admission Statistics	
Overall Percent Admitted	73%
Percent Male Admitted	71%
Percent Female Admitted	75%
Total Number of Applicants	26611
SAT 75th Percentile (Math)	600
SAT 75th Percentile (Critical Reading)	580
SAT 75th Percentile (Writing)	Unknown
ACT 75th Percentile	20
Percent of Undergrad Enrollment Over Age 25	10%

APPENDIX B

ACADEMIC SENATE CONSTITUTION

PREAMBLE

In order to provide a legislative body in the University in which representatives of the faculty can deliberate in the determination of academic policies, we, the members of the faculty of Robert Blum University, ordain and establish this Constitution. In doing this, we recognize the responsibilities and authorities of the students, the office of the President, the Board of Trustees, and the Legislature of the State, but we assert the right of the Academic Senate to act, with varying degrees of authority, in the areas cited in this Constitution.

ARTICLE I

The name of this organization shall be the Robert Blum University Academic Senate.

ARTICLE II

Functions.

The Academic Senate, serving as the primary legislative body of the faculty for the enactment of policies authorized by this Constitution, subject to the approval of the President of the University and the Board of Trustees, shall:

Sec. 1 Consider any matter relevant to the general welfare of the faculty and will receive, render advice, or otherwise act upon all matters referred to it by the President of the University, administrative officers and department chairpersons, administrative boards, committees and councils, Senate committees, schools, colleges, departments, students, and faculty members of the University.

Sec. 2 Define functions and establish and discharge Senate committees dealing with academic matters. The Senate may establish any committee it deems appropriate.

Sec. 3 Deliberate and legislate upon matters of concern to the faculty, involving students, staff, instruction, financial policies, University planning, and University organization when related to academic affairs, including, but not limited to, the following:

A. Encourage and approve the establishment of a democratic organization of the faculty of each school or college with the commonly acknowledged right of that organization to speak for the faculty of that school or college;

B. Standards for admission, selection, and retention applicable to all students of the University;

C. Requirements for granting of degrees applicable to all students of the University;

D. Standards and policies for the granting of honorary degrees recommend candidates for honorary degrees;

E. All curricular requirements applicable to all students of the University;

F. Policies pertaining to instructional standards throughout the University;

G. Promotion and facilitation of academic and instructional research;

H. Procedures for faculty participation in the selection and retention

of chairpersons of departments, deans, and President;

I. Standards for public information programs dealing with educational matters;

J. Endorsement and preservation of standards of academic freedom throughout the University;

K. Standards for student rights, privileges, discipline, and probation;

L. Standards for appointment, promotion, tenure, and dismissal of faculty members; except as covered by collective bargaining agreements.

M. Programs of faculty welfare such as salaries, insurance, and leaves of absence, and other collateral benefits; except as covered by collective bargaining agreements.

N. Financial policies and University planning, when it becomes necessary and proper.

Sec. 4 Serve as a forum for free discussion of questions of common concern.

Sec. 5 Report its actions to the faculty by distribution of minutes, and/or by announcements, and/or reports.

Sec. 6 Determine its own rules of procedure within the scope of this Constitution and its Bylaws.

ARTICLE III

Membership.

Sec. 1 Representation:

A. The President of the University, the Provost of the University, all

deans, and the Associate Vice President for Institutional Diversity shall be members of the Senate.

B. All academic departments shall be represented in the Senate. For purposes of representation, the Counseling Center and the Library shall be treated as academic departments. The maximum number of Senators per department shall be three (3) and the minimum shall be one (1). The number of Senators shall be proportionate to the average total number of full-time equated faculty (FTE) utilized by each department over the prior three academic years. The number of Senators for a department whose faculty FTE utilization is at least thirty (30) but less than fifty (50) shall be two (2). The number of Senators for a department whose faculty FTE utilization is fifty (50) or greater shall be three (3). In order to allocate Senators, the Chairperson of the Senate shall compile by March 15 of each year a list of the Total Faculty FTE utilized by each department for the prior three academic years. This figure shall include regular and temporary faculty on campus and shall not include FTE for graduate assistants or off-campus programs. The average of these three years shall be used to determine the number of Senators to represent each department. Departments will be notified in late March to elect Senators as needed during the month of April. If a department's Total Faculty FTE falls below the required level for its current number of Senators, the

department will lose one Senator for the upcoming academic year. The department will decide which Senator will give uphis/her seat.

C. Six students, at least one of whom will be a graduate student, shall be elected by a procedure established by the student government.

Sec. 2 Senators shall take office at the first regular meeting of the Senate after the beginning of the academic year.

Sec. 3 Senate meetings shall be open to persons who are not members of the Senate. They shall not have the privilege of voting but may have permission to speak with the consent of the Senate.

Sec. 4 Upon vote of the Senate or the Executive Board, non-members of the Senate may be invited to appear before the Senate to present information or testimony.

ARTICLE IV

Officers and the Executive Board.

Sec. 1

A. The officers of the Senate shall be the Chairperson, Chairperson-elect, Immediate-Past Chairperson, and the Secretary. The Chairperson-Elect shall automatically succeed to the office of the Chairperson at the beginning of the succeeding fall semester.

B. Duties of the Officers:

(1) The Chairperson:

a. The Chairperson of the Senate shall preside at meetings of the Academic Senate and of the Executive Board.

b. The Chairperson shall present to the Executive Board all appropriate matters which come to his/her attention.

c. The Chairperson shall appoint special Senate committees.

(2) The Chairperson-Elect:

a. The Chairperson-Elect shall preside in the absence of the Chairperson at the meetings of the Senate and Executive Board.

b. If the office of the Chairperson becomes vacant, the Chairperson-Elect shall assume the duties for the Chairperson for the unexpired term.

(3) The Immediate-Past Chairperson:

a. The Immediate-Past Chairperson shall serve in an advisory capacity to the Chairperson.

b. The Immediate-Past Chairperson shall preside in the absence of the Chairperson at the meetings of the Senate and Executive Board which occur during the period in which the office of the Chairperson-Elect is vacant.

(4) The Secretary:

a. The Secretary shall keep minutes of all meetings of the Senate and of the Executive Board. These minutes shall include all actions, divisions of vote when taken, recommendations, resolutions, and major topics of deliberation.

b. The Secretary shall supervise the distribution of the minutes of the Executive Board and Senate to all members of the Senate.

c. The Secretary shall keep a record of attendance of the Senate.

d. At least five (5) days before each regular meeting of the Senate, the Secretary shall prepare the agenda for distribution to each member of the Senate.

Sec. 2 The Executive Board of the Senate:

A. The Executive Board of the Senate shall consist of the Chairperson, the Chairperson-Elect, the Immediate-Past Chairperson, and the Secretary of the Senate; the President and the Provost/Vice-President for Academic Affairs of the University; and an additional three Senators, at least one of whom shall be a student, to be elected by the Senate.

B. Duties of the Executive Board:

(1) The Executive Board shall schedule all meetings of the Senate.

(2) The Executive Board shall meet at least one week before each scheduled meeting of the Senate, and at such other times as called for by the Chairperson of the Senate or by the President of the University.

(3) The Executive Board shall prepare the agenda for meetings of the Senate.

a. The agenda prepared by the Executive Board for a regular meeting of the Senate may be modified or replaced by a two-thirds vote of the members present and voting.

b. Any items on the agenda not considered at a meeting of the Senate shall appear on the agenda of a subsequent meeting in a position determined by the Executive Board.

Sec. 3 Election of Officers and Executive Board Members:

A. The Chairperson-Elect, the Secretary, and the members of the Executive Board of the Senate shall be elected at the first meeting of the Senate in October and shall take office at the beginning of the next academic semester.

B. The nominees for these positions need not be members of the ensuing Senate, and if they are not, they shall be considered Senators-At-Large during their term of office.

C. The Committee to Nominate Officers and Executive Board Members:

(1) The Senate shall elect a Nominating Committee composed of five (5) Senators, including the Immediate-Past Chairperson and at least one (1) student Senator. The Immediate-Past Chairperson of the Senate shall chair the committee. Members, other than the Immediate-Past Chairperson of the Senate, shall be elected in the spring term for an annual term of office beginning in August.

(2) Duties of the Nominating Committee:

a. The Nominating Committee shall present the names of at least two candidates for each office (except for the Immediate-Past Chairperson) and position on the Executive Board and shall have the consent of each person nominated. The slate of nominees shall be presented to each Senator at least one week before the date of the election.

b. The Senate and/or the Executive Board may assign the Nominating Committee other associated duties.

D. Election Procedures shall include:

(1) Nominations for any office may be made from the floor by any Senator provided the consent of the person has been obtained.

(2) Election of officers shall be by ballot.

(3) A majority of the ballots cast for any office shall be required for election to that office. If a second vote is required, it shall be conducted at the same meeting between the two candidates, plus ties with the highest number of votes on the first ballot.

(4) An election to fill an unexpired term, other than that of the Chairperson, shall take place at one of the next two regular meetings of the Senate following the creation of a vacancy.

ARTICLE V

Elections

Sec. I Eligibility:

A. All faculty on regular appointment with the rank of instructor or higher in an academic department shall have the right to vote in Senate elections and to be elected to the Senate.

B. An individual sharing equally in two or more departments shall choose that in which he or she will vote and be eligible for Senate elections.

C. Eligibility of students for election to the Academic Senate shall be determined by the student government.

Sec. 2 Term:

A. The term of members elected by academic departments shall be three (3) years except for the first Senate elected under this Constitution. This Senate shall assign terms so that approximately one-third (1/3) of the representatives of academic departments may be replaced prior to the beginning of each of the first three academic years subsequent to its initial organization. Members may not be elected to more than two (2) consecutive terms from the same constituency.

B. The term of student members shall be one year. Student members may serve up to three (3) consecutive terms.

Sec. 3 Election Procedures:

A. Elections to the Senate shall be conducted in April.

B. Nomination Procedures:

(1) Departments may choose their own nominating procedures.

(2) Student organizations electing representatives may choose their own nominating procedures.

C. All elections shall be by ballot and shall be conducted at a regularly scheduled meeting of the constituency.

D. Election shall require a majority of the votes cast. When a majority is not obtained on the first ballot, the number of nominees to be considered on succeeding ballots shall be twice the number of positions to be filled and they shall be those who received the highest number of votes on the preceding ballot. In the case of ties, all those receiving the highest number of votes shall be nominees. Voting shall continue by ballot until a majority vote is obtained.

E. The results of each election shall be reported immediately following the election to the Senate office by the presiding officer of each constituency.

Sec. 4 Vacancies caused by retirement, resignation, departure, or death of a Senator prior to the end of his/her term of office shall be filled by election at the first meeting of the constituency following notification to the constituency by the Chairperson of the Senate. In case of authorized leave or extended illness, a substitute may be elected by the appropriate constituency to replace the absent Senator until he/she returns or until

his/her term expires, whichever comes first.

ARTICLE VI

Senate Procedure.

Sec.1 A quorum shall consist of a majority of the members of the Academic Senate.

Sec. 2 The latest edition of Robert's Rules of Order shall be followed in meetings of the Academic Senate, except where other procedures are adopted, provided a quorum is present, by two-thirds majority of Senators present and voting.

Sec. 3 The Senate may write its own Bylaws, consistent with this Constitution.

ARTICLE VII

Amendments.

Sec. 1 An amendment to the Constitution may be initiated by either of the following ways:

A. Any group composed of five percent of the faculty on regular appointment, to the nearest whole number, may initiate an amendment. Before an amendment can be submitted to the Executive Board of the Senate, it must be reviewed in an editorial capacity by the Drafting Committee of the Senate.

B. The Senate may initiate an amendment by approval of two-thirds of the members present and voting on two successive regular meetings of the Senate.

C. An amendment proposed under either procedure shall be deposited

with the Executive

Board of the Senate.

Sec. 2 The Executive Board shall refer the proposed amendment to the faculty on regular appointment.

Sec. 3 Each proposed amendment shall be discussed in a meeting of each college's faculty (with exception of Off-Campus Programs and the College of Graduate Studies) within sixty (60) days after its referral by the Executive Board. The proposed amendment shall be submitted for vote by ballot through the University mail sixty (60) days after its submission to the faculty on regular appointment. Ballots shall be counted ten (10) days after submission of the ballot. Sec. 4 No proposed amendment may be submitted between May 1 and September 1.

Sec. 5 Amendments shall be effective upon approval either by a two-thirds majority of those voting or by an absolute majority of the faculty on regular appointment.

ARTICLE VIII

Ratification.

This revised Constitution shall become effective January 1 following approval by a majority of the electorate (in accord with the definition of "faculty" as adopted by the University Senate on January 6, 1969), by the University President and by the governing board.

APPENDIX C

IRB APPROVAL FORM

DATE:	October 5, 2011
TO:	Benjamin Ritter
FROM:	Central Michigan University Institutional Review Board 1
PROJECT TITLE:	[272937-1] Discovering an Emerging, Institutional Culture of Sustainability at a Midwestern State university
REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	October 5, 2011
EXPIRATION DATE:	October 4, 2012
REVIEW TYPE:	Expedited Review

Thank you for your submission of New Project materials for this project. The Central Michigan University Institutional Review Board 1 has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this committee. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this committee.

This project has been determined to be a More than Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of October 4, 2012.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the CMU IRB office at 989-774-6401 or cmuirb@cmich.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Central Michigan University Institutional Review Board 1's records.

APPENDIX D

INTERVIEW PROTOCOL AND CONSENT FORM

Format based in large part on the format from: National Center for Postsecondary Improvement (2011)

Introductory Protocol

To facilitate my note-taking, I would like to audio record our conversations today. Please sign the release form. For your information, only researchers on the project will have access to the recordings which will be eventually destroyed after they are transcribed. In addition, you must sign a form devised to meet our human subject requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Thank you for your agreeing to participate.

I have planned this interview to last no longer than thirty minutes. During this time, I have several questions that I would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete this line of questioning.

Introduction

You have been selected to speak with me today because you have been identified as someone who has a great deal to share about teaching, learning, and sustainability on this campus. This research project as a whole focuses on the understanding of what the campus culture of sustainability is, with particular interest in understanding how faculty in academic programs are engaged in this activity, how they describe/define the term, and whether we can begin to share what we know about making a difference in undergraduate

education. Our study does not aim to evaluate your techniques or experiences. Rather, we are trying to learn more about teaching and learning, and hopefully learn about faculty practices that help improve student learning on campus.

By signing this form, you acknowledge and understand the conditions of this inquiry and the role you play in it as an interview participant.

_____

Signature/Date

APPENDIX E

INTERVIEW QUESTIONS

A. Interviewee Background
How long have you been …
_____ in your present position?
_____ at this institution?
Interesting background information on interviewee:

What is your highest degree? _____

What is your primary field of study? _____

Briefly describe your role (office, committee, classroom, etc.) as it relates to student learning and sustainability (if appropriate).

Probes: How are you involved in teaching sustainability here?

How did you get involved in this process?

B. Research Perspective

1. How did you get involved in teaching sustainability?

2. What are the resources you use to keep shape your class material and stay current?

Probes: What kinds of networks and affiliations do you see developing surrounding sustainability?
What specific new teaching or assessment practices have you implemented in your classes?

4. What experiences do you see as common themes regarding sustainability education efforts at this institution?

4b. If you don't see any common themes, what do you see as hindering this development?

5. Are there any particular characteristics that you associate with faculty who are interested in innovative teaching/learning initiatives?

6. What motivates you to participate in sustainability education on campus?

C. Demographics

Post Interview Comments and/or Observations:

APPENDIX F

TARGETED COURSES FOR INQUIREY

BIO 240 Conservation of Natural Resources 3(3-0)

Ecological approaches to issues of global environmental sustainability, with emphasis on preservation of natural resources such as soil, water, forests and wildlife. (University Program Group II-A)

BIO 338 Human Ecology 3(3-0)

The relationship of humans to their environment and the environmental consequences of human activities. Topics include climate change, biological invasions, biodiversity loss, emerging infectious diseases. Does not count toward biology majors or the biology minor. This course may be offered in an online or hybrid format.

ENV 101 Introduction to Environmental Studies 3(3-0)

An introduction to the interdisciplinary study of human/environmental relationships. Topics include the biosphere, ecosystems and how human socio-political factors interact with them. This course is approved for offering in a distance learning format. (University Program Group IV-A)

HSC 352 Environmental Health 3(3-0)

Emphasis on today's environmental problems related to health, air, water, radiation, housing, urbanization, disease, weapons of mass destruction, and man's responsibilities and remedial actions to these problems. This course may be offered in an online or hybrid format.

IET 181 Alternative Energy Analysis 3(3-0)

A quantitative comparison and analysis of transportation and residential energy systems available to the consumer.

IET 590 Green Building and Sustainability 3(3-0)

Comprehensive study of the principles of Green Building and Sustainability. Topics include sustainability, xeriscaping, high performance building, energy efficiency, indoor air quality and environmental stewardship. This course is approved for offering in a distance learning format. Prerequisites: IET 361, 368 or graduate standing.

IET 680 Sustainability and Green Technology 3(3-0)

This class seeks to apply the concepts of engineering and technology utilizing the framework of sustainability related to green energy technology.

MGT 400 Global Concepts for Sustainable Development 3(3-0)

Students will learn the basic concepts used in sustainable development and apply them through the use of cases and simulations. Prerequisites: ECO 301, ENV 101, MGT 365.

MGT 487 Project Course for Sustainable Development 3(3-0)

The students will apply the basic tools of sustainable development within a real-world setting through completion of an applied project. Prerequisite: MGT 400.

PHY 105 Energy and Society: A Quantitative Perspective 3(3-0)

Understanding current and future energy problems using quantitative reasoning techniques. Topics covered span a range from the personal to the societal.

PSC 516 Environmental Politics and Policy 3(3-0)

Analysis of relationships between politics and public policy in the environmental arena. Emphasis upon policy making process, political strategies, and alternative decision modes. Prerequisites: complete minimum of 56 credit hours of university course work.

SOC 370/ANT 370 Global Environmental Issues 3(3-0)

Social and cultural dimensions of global population issues, food and energy policies, destruction of indigenous lifeways, roles of multinational organizations, environmental racism, and environmental movements. Identical to ANT 370. Credit may not be earned in more than one of these courses.

APPENDIX G

GROUPING OF OPEN CODES FROM INTERVIEWS

Themes	Associated Nodes
Moral Purpose	*Early Childhood Experiences/Drivers *Local Community Interest/Direction *Personal/Non Academic Involvement in Sustainability
Culture	*Benchmark Programs *Institutional Benefit *Length of Tenure *Institutional Benefit *Institutional/Program Size *Stakeholders
Sustainability	*How each person defines sustainability * Common terms *Common sentiments

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