A constructivist study of university curricular attributes and faculty leadership in support of environmental sustainability

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A CONSTRUCTIVIST STUDY OF UNIVERSITY CURRICULAR ATTRIBUTES AND FACULTY LEADERSHIP IN SUPPORT OF ENVIRONMENTAL SUSTAINABILITY

A Project
Presented to the Faculty of California State University, San Bernardino

In Partial Fulfillment of the Requirements for the Degree Master of Social Work

by
Esther Jane Ross
Gary McMame
June 1996
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ABSTRACT

The present study utilized the constructivist paradigm to examine qualitative data in a single-round hermeneutic dialectic circle process. This initial round of inquiry focused on university faculty attitudes and perceptions regarding environmental sustainability. The data gravitated toward consensus on a need to develop critical thinking, decision making skills, and exposure to diverse theories within all curricula. Broad scope education was found to be the dominant theme in creating effective leadership with regards to global environmental concerns. Other dominant themes included concerns with over population, imminent crisis motivation, environmental justice, and sustainable living. A wide range of discord arose with regard to entities identified as being responsible for maintaining the physical environment. A number of human variables were identified as having significant influence over how the environment is perceived and sustained. Recommendations, limitations and implications for social work practice were discussed.
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Introduction

Focus of Inquiry

California State University, San Bernardino, is a spacious campus in the foothills of the San Bernardino mountains. It has an enrollment of more than 12,000 students, of which 72% are undergraduate students. California State University, San Bernardino offers major courses of study at the undergraduate level and twenty graduate programs. Specializations range from the Natural and Social Sciences to Cybernetic Technology and Business Administration.

The academic community at this university was chosen as the focus of the present study due to the perception that higher education leads to responsible leadership. The present study employed a constructivist paradigm in investigating current attitudes and perceptions within this academic community toward environmental issues. Specific emphasis was placed on examining faculty and administrative perceptions of quality leadership.

The environmental issues with which this project is concerned have been widely debated in the political arena for some time. As the third millennium fast approaches, debate between technocentric visions of the future and
ecocentric, sustainable development visions have found little common ground from which to proceed. For the most part those organizations which are primarily concerned with the development of sustainable futures, such as Overseas Development Administration (ODA) in Britain, the United States Agency for International Development (USAID), Sweden's International Development Authority (SIDA), the United Nations Development Program (UNDP), and the World Bank are technology driven. For them, in short, "development" means "modernization and industrialization". Their collective mission is to create more industrial economy which will provide enough food, energy sources, tools, and transportation devices to accommodate a massively expanding population. A problem with an industrial focused economy is that although it reduces human costs in backbreaking labor, it also exposes workers to increasingly hazardous materials and other environmental risks. The dilemma, as Garbarino (1992) so eloquently states, is that "Modernization giveth with one hand and taketh away with another". A balanced consensus on the terms "development" and "sustainability", seems necessary so that the goal of sustainability is not sabotaged by the efforts in development.
In order to begin envisioning the present global environmental threats, human beings will need to go beyond viewing their neighborhoods, provinces, countries, or hemispheres as the only arena they affect. Furthermore, leaders in business, academics, science and technology, social services, and public works need to understand that although each discipline has its nitch, there must be concerted interaction and commonality with regards to taking responsibility for the environment we all share. There is great value in specialization and credit must be given to the progress which has been made because of it, but there is a danger of becoming too specialized to the point where one looses sight of the whole. According to Riffkin (1993), a lack of awareness and lack of cooperative action between political, social, and scientific disciplines has created a certain "worldview schizophrenia" (p.78), where few will acknowledge a world existing outside their own enclosed reality; where one hand does not know what the other hand is doing, thus creating dissonant, superficial, and often chaotic "solutions" to global problems. Even at best, this fragmentation of disciplines creates more conflict than cooperative action.

Answers to complex worldwide environmental dilemmas
are dependent upon an understanding of the integrated wholeness of earth systems (Laszlo, 1972, & Vithoulkas, 1980). To begin movement toward viewing our world as an interactive whole with its insidious environmental crisis, a reverent sharing of knowledge and insights ranging from the natural and social sciences to computer technology and business, from the wealthy to the indigent, from eastern to western philosophies and all in between must begin to take place if adequate solutions are to occur.

Remaining isolated regarding world views in the present age of rapidly expanding technology will undoubtedly produce staggering human costs. In western ideologies, it has become unreasonable to assume that people with greater resources will take greater responsibility and care for those with less resources. Those with the least political and economic clout have very little power to elicit change. While the indigent people of the world struggle to maintain life, they have no choice but to ingest the unhealthy by-products of technological progress. More and more inhabitants of this planet are forced to breath unclean air, drink unclean water, eat unsafe food and exist in inadequate shelter (Hoff & McNutt, 1994). "Every year, an
estimated 10 to 25 million people die from diseases caused by unclean water. (Timberlake, 1987, p. 140). These figures are testament to the human suffering which exists in tandem with environmental breakdown. As economic disparity continues into the next century, under-developed nations in Africa, Asia, and Latin America will continue to reap an increasing toll of human life in the wake of "progress".

Meanwhile the upper echelon, those with extensive discretionary resources, are often driven by visions of high-tech, market oriented progression and growth. Individuals who are in positions of economic and political power often show little concern about the implications of their decisions on the earth as a whole and its people. When the Kawasaki Steel Company moved a plant from Japan to the Philippines one Company executive said, "People in the Philippines don't know anything about pollution." (Timberlake, 1987, p.147). Economic wealth was the focal point of their personal and public decision to move the company regardless of the unhealthful impact on the people of the Philippines. This exploitive practice has become epidemic in today's industrial societies. The individual and institutional pursuit of affluence is given precedence over the cost to
quality of life for all, including the affluent. As the affluent struggle to maintain their standard of living they often ignore the world's looming environmental threats. The irony is that the byproducts of their affluence from groundwater contamination to climate change, recognize none of the artificial social boundaries erected by human beings (Durning, 1992, Garrett, 1994). During the 1980's residents of San Jose, California, also known as Silicon Valley, one of the wealthiest districts in the world, identified the effects of unsafe drinking water from groundwater contamination, through multiple still births and the birth of numerous babies with defects (Timberlake, 1987, IX). This revealed the reality that although the economically powerful do not carry the heaviest burden of environmental depletion they are not immune to its plague.

There are some efforts being made to ward off the world's more pressing environmental threats such as hunger and starvation. There are a great number of philanthropic institutions that claim to aid in the fight against world wide hunger. Yet even in their most philanthropic endeavors these institutions strive to maintain a higher standard of living through
"development". Unfortunately, particular "development" plans often lack adequate technology. Furthermore, in terms of world statistics, some 730 million people in developing nations in the year 1980 were not receiving sufficient nurturance despite all the development efforts (Timberlake, 1987, p.16.).

A by-product of this kind of failure manifests itself in indifference and withdrawal. Indifference, for the poor, is a powerful and effective defense. It neutralizes the insult and frustration of being powerless, but it exacts a serious price. Indifference, for the powerful, is an effective defense against the redistribution of that power. It maintains both economic and political positions (Rohter, 1992). This also exacts a significant price. Consequently, indifference on any level is shortsighted, the price is "a sacrifice of the future in order to salvage the present" (Durning, 1992, 40). It is this indifference and apathy that threatens the future of our existence on earth.

There is a need for individuals to recognize that they are part of a global community. Presently there exists disparity within the global community in perceptions as to how to proceed into the next millennium in a manner that will sustain our environment. Out of
prolonged disparity eventually can come paralyzing apathy or at best divergent movement creating detrimental competition and greater distance between viewpoints. If the disparity between viewpoints is addressed openly and in a timely manner, then compromise and a more unified movement toward consensus is conceivable.

According to the United Nations Earth Summit held in Rio de Janeiro, Brazil in 1992, world leaders formulated equitable strategies to prevent our Earth's environmental death (Sitarz, 1994). Included in the strategic plan was an objective to reorient educational practices from primary, to graduate level education. The Earth Summit document places emphasis on the integration of environmental education into all academic disciplines. The document states: "To be effective, environment and development education should deal with the dynamics of the physical, biological, social, economic, and spiritual environment........both formal and non-formal education are critical for achieving environmental and ethical awareness of the values, attitudes, and behavior which will be necessary for sustainable development of the Earth to succeed" (Sitarz, 1994).

The present study examined the existing perceptions and attitudes of faculty and administrators at California
State University, San Bernardino by bringing together primary viewpoints on environmental sustainability from individuals in the five major schools and administration of this university. The goal was to create an arena to address one of the most pressing issues at this time in human history. In order for human life to continue on this planet into the next millennium serious steps must be taken to produce responsible, environmentally aware leaders in all academic fields. It was the researchers' aim that this university be held responsible for providing an educational foundation for future leaders that will address the need for sound environmental practices in all professions.

The Constructivist Paradigm

The present study lends itself to the constructivist research paradigm because of its aim to combine knowledge in order to create new understandings and an arena to evolve new directions. Constructivist research has drawn from "contemporary philosophy of science and cultural, cognitive, and linguistic studies that endorses research as a tool for advocacy" (Tyson, 1995, p.541). The constructivist research paradigm proposes a holistic approach to social work research. It is one that does
not assume that there is a single objective reality, but respects and acknowledges the existence of multiple realities. This perspective is in direct opposition to the dominant positivist research paradigm. Positivism attempts to artificially control for researcher influence and assumes that there is an objective reality which can be estimated by measuring samples of a given population. Constructivist research attempts to hear, understand, and learn from a continuum of interpretive realities from key stakeholders in order to create an increased awareness of divergent realities. This awareness allows for the construction of new theories with increased accuracy (Erlandson et. al., 1993). Through the involvement of key people in the research process, researchers can identify conflicting views from which to derive further participation in collective sharing, analyzing and negotiating between selected stakeholders. The particular task of constructivist research is to provide a process for the creation and sharing of new knowledge.

The rejection of the traditional research model has been based on two major objections. The first is the issue of the researcher as neutral. It has been argued within the field of social work research that it is rarely possible to conduct inquiry without influencing
the subject of study. The researcher is influenced by the forces of society which, in turn influence the research project (e.g. conditions in the environment are influenced by individuals, businesses, academics, governments, technology, social services, etc.). The researchers' influence on this study included selecting the aim of inquiry, their derivation, personal experiences, interpretations, and establishment of explanatory elements of the research.

The second issue is the assumption that relatively small samples of social reality can be used to make broader generalizations. This idea is rejected because it does not take into consideration the richness and validity of individual realities.

In the present study, the researchers presupposed that there is an interconnectedness between academic disciplines on some level. They also acknowledge the immense body of knowledge from a wide array of disciplines on the looming environmental crisis. It is their collective belief that obtaining practical solutions to meet the needs of the present without compromising the future, can be done most expediently by combining knowledge of already interconnected disciplines. The researchers implored representatives
from each school discipline (the identified stakeholders) to utilize combined knowledge to complement their curriculum in order to educate and create more environmentally responsible leaders out of their students. The driving concept behind the use of constructivism was the idea that through connecting these highly influential academicians, steps would begin to enhance emerging leaders and will help bring about a more respectful regard for the Earth as a whole.

Furthermore, one of the characteristics of constructivism is that it influences the people who are involved in it (Erlandson et al. 1993). This project was aimed at influencing professors to act on their concerns about the ecological system. This was important for this project because the knowledge which is generated around the issue by the various stakeholders represents the process by which knowledge is brought into and incorporated into a connectable whole. A major intention of the present study was to make connections between academic disciplines, to present data from the production of knowledge, and to potentially aid in reshaping worldviews of stakeholders. Further motivation for the use of the constructivist paradigm was to facilitate communication with participants rather than control or
manipulate them. With a commitment to the participation of stakeholders in defining key issues and problems, constructivist research needs to be evaluated by the extent to which the direction and solutions of those problems are controlled by the participants (Cooney et al., 1995). It was the intent of the present study to simply maintain limits to commonly identified themes while allowing the experts (stakeholders) to determine the path they may take within those limits.

Social Work has adopted the General Systems perspective as one of its fundamental principles of knowledge and skills. "A systems perspective diverts attention from the individual to the interaction between that individual and the environment" (Hepworth, 1993). A basic tenet of social work practice is a dedication to improving what is known as the "person in environment fit" (Kirst-Ashman et al. 1993). This refers to the dynamic involvement of the person with the various systems around them. These systems generally include, the family, friends, work, social services, politics, religion, goods and services, and educational systems. Maria Hoff and John Mc Nutt (1994) are pioneers in the inclusion of protection of the environment in the social work arena. They embrace a concept where the person in
environment, becomes, environment around the person, as a focus for social work practice.

Environmental abuses have had an impact on the quality of life of many individuals. As businesses strive to dominate the marketplace, natural resources are being depleted. As industry develops new technology, human contact is being invalidated. As our government espouses to increase "the comforts of life", the quality of life is melting away. As individuals conspicuously consume, spirituality has no room (Riffkin, 1993). Understanding the person-in-environment allows social workers a holistic view of the impact of environment on the individual (SW Speaks, 1994). Environmental quality has altered people's quality of life. It is the researchers' opinion that an increase in the quality of the environment would yield a safer, more humane, healthy, and prosperous social environment.

Cited in Toward a Sustainable Society (Garbarino, 1992), the futurist Aurelio Peccei suggests that there is a growing crisis between the relationship between human civilization and the Earth's resources. The human civilization has historically taken a stance which placed the environment second to economic and social development. But, as Peccei points out, that very
attitude which proposed to develop economy in order to sustain society now threatens to destroy society.

The literature review presented serves only as a basis to stimulate further research in this area. An economic, social, and environmental agenda for the future needs to be reconstructed in the minds of constructors. It is the perception of each stakeholder that needs to be influenced in order to generate a few constructions on which there is substantial consensus on solutions to the global environmental question. The researchers in this study take full responsibility for identifying the focus of the study. It is the result of their personal and collaborative constructions. The researchers are aware that the brief literature review provided is biased and only delineates the current environmental topic as a crisis issue which warrants further discussion.

Data Collection

The study was conducted during the winter and spring quarters of the academic year 1995-1996. Professors from the schools of: Social and Behavioral Sciences; Natural Sciences; Business; Education, and Humanities, as well as university administrators were contacted to discuss environmental sustainability as it relates to their
specialization. University professors and administrators were approached individually on the basis of their potential influence within the university. This University was selected because of the researchers affiliation as graduate students in the Department of Social Work. There was consensus amongst the researchers that the present study may establish a precedent for future curricular considerations in addressing environmental issues in all academic disciplines.

In keeping with the ontology of constructivism it is understood that reality relies entirely on the form in which individuals conceptualize it (Lincoln, 1993). The researchers conducted interviews with professors and administrators due to their influential positions on this campus. Because students will potentially enter influential positions in their profession after graduation, it was seen as imperative to offer an education that emphasizes environmental impact to some degree. Professors and administrators were selected because of their apparent ability to influence students and potentially affect curricular change. They maintain positions which influence students by the substance of their particular curriculum and by mere example. This study attempted to uncover each stakeholder's
understanding of the environment by in-depth interviewing techniques. It was the researchers' decision to facilitate individual dissemination of beliefs through personal conversations with each stakeholder.

Lincoln and Guba (1985) have coined the term "hermeneutic-dialectic circle" to refer to the circle of stakeholders involved in a constructivist research study. This methodology involved individual constructions which are extracted from stakeholders and then clarified hermeneutically, and compared and contrasted dialectically. Accurate depiction of individual constructions followed by differentiation between existing constructions aims to generate a more comprehensive construction of the shared realities. Consistent with the methodology of the hermeneutic-dialectic circle, interviews were conducted with identified professors and administrators in order to verify that they were interested in being an active stakeholder, to establish rapport between the Department of Social Work and the identified school of each professor, and to assess for a wide range of thought on the subject of environmental sustainability.

Open deliberation in which every idea is recognized as having valuable contribution includes the researchers,
the stakeholders, and relevant literature in the hermeneutic process. Guba and Lincoln (1989) make it clear that the researcher is an integral part of the process. Thus the researchers were aware of their own constructions, and were willing to include them in the circle of knowledge and assessment. Through this process the data used in the research was not so much a mere collection of ideas, it was more an evolution of ideas generated by all of the participants involved. However, it was the researchers' responsibility to facilitate interaction between stakeholders and to record responses.

Phases of the Inquiry

According to Lincoln and Guba (1985) there are three phases of the constructivist inquiry. The first phase is an "orientation and overview" process. While engaged in this initial step, the researchers began to lay the groundwork for inquiry. The researchers initially aimed at building rapport with the stakeholders. Among the central goals of this first stage was to orient stakeholders to the research environment and to the purposes and process of constructivist research. Gathering comprehensive information during the beginning phase was primarily done in conjunction with the
stakeholders. While building rapport and inspiring confidence in the abilities of the researchers, the interviewers and the interviewee were potentially sowing the seeds for understanding and collectivity. Throughout the beginning stage the researchers assessed the significance of information revealed by the stakeholders, and presented an overview of the issue at hand.

The second phase of the inquiry is referred to as the "focused exploration" process. Engaging the stakeholders and exploring the findings of the initial interviews are processes that were implemented concurrently. The researchers formulated topics for additional interviews based upon information obtained in previous interviews. The researchers anticipated the emergence of such themes as responsible leadership, holistic curriculum, stable development and issues of power in terms of the environmental question. Attending to the assertions and concerns of the stakeholders, however, was critical both in maintaining rapport and further exploration of constructs.

The third phase in the successive phases of the inquiry is the "member check" process. Each member was asked to review the findings of the research for content and accuracy. Once stakeholders surveyed the researchers
interpretation of their interview information, they conceded or provided clarification to the researchers. A critical analysis of the data was done by forming categories from which major themes were derived. A synopsis of the themes were used to inform a round table discussion. This round table meeting of interested stakeholders culminated as the termination event of the present research project and final analysis.

**Interview Methodology**

In order to prepare for interviews, the researchers accepted an awareness of their own limitations and of their own ignorance about the subject of curricular policy related to environmental sustainability. The researchers were open to learning from the people involved with the study through active listening, demonstrating genuine interest, and positive regard for the perceived problems, needs, and feelings of the respondents about the issue. After acquiring sufficient knowledge and understanding of environmental issues, dialogue was undertaken through individual interviews, the member checking procedure, and the final round table discussion. The researchers pursued further literature as it became necessary to understand a particular
construct of any one stakeholder.

For the first interview, the researchers prepared to introduce themselves, their professional mission, and have enough understanding of the constructivist research methodology to be able to explain it, and answer any questions. They also needed to know when and how to record the contents of the first interview (Lukas, 1993).

The researchers have been honing their skills as successful interviewers over the past few years. They have become attuned to focusing on comprehending both digital and analogic communication. They have been exposed to simple encouragement, rephrasing and clarification techniques as important components to the interview process. These acquired skills, as well as others were useful in eliciting accurate information from stakeholders.

The goal in the first interview was to allow the stakeholder to talk about their understanding of the relationship between the environment, their particular profession, and the current curricular objectives of their particular school. Regardless of the information already acquired by the researchers it was crucial that they elicit the stakeholder's understanding of the issue. This did not not in any way imply that the researchers
agreed with the stakeholder's interpretation or definition. It was, however, essential to establish credible testimony from the primary source (the stakeholders) in order to substantiate categorical constructs. The stakeholder's realization that the researchers were interested listeners and that they were making an effort to understand them was the essential first step in engaging the stakeholder in the research process. During the initial interview the researchers assessed stakeholders for a willingness to change and a commitment of time and energy to the project (Lukas, 1993).

**Data Collection and Recording Mode**

Fidelity and structure of the interviews were considered during the planning step of interviewing. Fidelity pertains to the accuracy of the data being collected and structure pertains to the style of interview being conducted. In planning for this research project the researchers recorded the contents of the interview in writing and by using a tape recorder. The notes were typed in full after the interview, using the tape recorded information to fill in details. When concluding each interview, the interviewers reviewed what
they understand to be the significant points of the interview with the respondents. Throughout the interview they periodically restated a summary of what the interviewee has said in order to assure mutual comprehension (Kirst-Ashman, 1993).

**Data Analyses**

Once the data were recorded they were interpreted and analyzed by the researchers, using notes recorded during individual interviews. Lincoln and Guba (1985) have identified "units" as the first assemblage of relevant and distinctive information. These units are ideas expressed in phrases or paragraphs. Once the units were identified by the researchers they were coded using the open coding method described by Corbin and Strauss (1990). Using the open coding method, stakeholders initially identified essential categories. These identified categories were then be used to guide future interviews.

Some of the categories initially expected included: definitions of environmental sustainability; the role of CSUSB in producing future leadership; environmental policy; curricular policy; globalization of economics; and human security. These initial categories were
explored for validity as they relate to the present study. As the interview process proceeded, new themes were identified and accumulated. Whenever possible, data received in the interview process were linked to previously attained data in order to develop comprehensive themes. Categories and themes were primarily derived from statements made by the stakeholders during the research process. By the process of member checking a constant comparison of the descriptive categories raised by the respondents and explanatory categories raised by the researchers were reviewed. Data analysis occurred concurrently with data collection so that data collection efforts were directed towards clarifying categories. The researchers keep accurate records throughout this process so as to leave an audit trail for verification of data.

As the process proceeded themes emerged yielding a more comprehensive picture of the issues at hand. During the process there was opportunity to feed back the analysis to the stakeholders in order to receive comments and to make appropriate changes (Lincoln, 1993). This member checking process insured stakeholders that information was being properly communicated.

Lincoln and Guba (1985) have identified four
criteria to determine conditions for termination of data collection and analysis. Once all sources have been exhausted, categories are saturated, regularities emerge within the categories, or "overextension" occurs it is reasonable and sound to discontinue data collection and analysis. A category is considered saturated when the range of new data is so small it becomes insignificant. Overextension, on the other hand, is determined by the occurrence of new data that are remote from any established category, thus considered of no use to the analysis of already established categories. Due to limitations in time and the broad scope of potential stakeholders none of the criteria for termination were fully met. Thus this initial round could potentially continue until such criteria is met.

The researchers conducted interviews with key stakeholders in a semi-structured, open-ended manner. Below is a list of predefined questions to aid the interviewers in their exploration of the central theme: "The responsibility of CSUSB to environmental sustainability." These questions were meant to be used as guidelines to help keep interviews focused on the issues. The researchers were fully aware of the value of spontaneity and allowed the interviewee to expound on
tangential issues as a function of assessment or personal commitment.

* Describe what the environment means to you.
* How do you feel your profession affects the environment, as you describe it?
* Describe what environmental sustainability means.
* What is your understanding of a sustainable society?
* How does your profession affect the sustainability of our society, as you have described it?
* What role does the curriculum offered in your particular academic discipline play in producing leaders who are sensitive to the environment?
* Is there anything you would add to the curriculum to address leadership in the area of environmental sustainability?

The researchers contributed to the interview by facilitating and probing for deeper meanings and explanations. The researchers also shared their own constructions whenever deemed necessary to stimulate critical thinking and further discussion. All interviews took place on the California State University, San Bernardino campus. The interviews included representatives from each of the five major schools on
Logistics of the Study

The present study encompassed a ten week period in which all interviews and data collection occurred. A final analysis and round table discussion of findings occurred at the end of that period. Interviews were scheduled as needed to accommodate conflicting schedules.

The following outline compiled by Cooney and Steinberg (1995) for the logistics of activities following field excursions, closure and termination was used.

1. Analysis and write up of each interview took place within twenty-four hrs. of the interview.
2. The write up was delivered to the stakeholder either in person or via E-mail. They read and made any necessary changes, if they felt their ideas had not been accurately represented. The changes were delivered through E-mail.
3. Each individual analysis was compared and contrasted with other constructs and a rudimentary list of common themes was compiled.
4. Two themes were chosen and delivered to each stakeholder for perusal and to inform the round table
discussion.

5. A date was set for the previously agreed upon round table discussion. The informed discussion was the first of hopefully a series of interdisciplinary discussions about solutions for creating a sustainable society.

6. A write up of this discussion was completed within 48 hours of the meeting and all of the participants of the discussion received a copy via E-mail.

The study was terminated upon completion of this write up. Each stakeholder was invited to peruse the write-up in the library and to continue discussion the following academic year.

Quality Control

Earlandson et. al. (1993) dedicates an entire chapter to "Quality Criteria for a Naturalistic Study". In this chapter they give particular attention to the issue of trustworthiness. It was of particular interest to the project at hand to note that constructivists value individual realities, "the way these realities are responded to and the ways in which they enable individuals to respond productively to their environments" (p.132). The authenticity of a constructivist study is judged by its responsiveness to
these individual realities.

In this study a number of techniques for establishing trustworthiness were utilized. By virtue of the researchers' identification as graduate students at the site, 'prolonged engagement', and thus understanding of the academic environment, created a foundation for credibility. The researchers were purposeful and assertive in their process of inquiry, this helped to ensure 'persistent observation' which resulted in obtaining accurate, in-depth data. 'Peer debriefing' was an integral part of the hermeneutic circle itself by default. Social Work students and professors were included in the circle of constructs and thus aided in analyzing the materials, and listening to the researchers' ideas and concerns. Perhaps the most important criteria for quality control is the 'member checking' procedure. "In this step ...the members of the setting being studied have a chance to indicate whether the reconstruction's of the inquirer are recognizable" (p.142). Throughout the research process, members of the hermeneutic circle were given ample opportunity to correct gathered information. This process took place both formally or informally. Each stakeholder was given a written report of the interview session at which time
they can corrected any misinformation or information recorded incorrectly. This procedure insured correct data collection by virtue of having numerous checks and rechecks of information by more than one source.

Another criteria which supports not only the quality but, credibility, transferability, dependability, and confirmability of the study is the 'reflective journal'. The researchers kept a bi-weekly journal of their schedule and logistics, insights, and reasons for methodological decisions. Finally, "the audit trail leads to dependability and confirmability by allowing an auditor to determine the trustworthiness of the study" (p. 148). Audit trail materials included: A detailed outline of every interview which was written out and returned to the participant for inspection and possible correction, an initial compilation of the individual outlines identifying preliminary themes, two subsequent assemblages of interconnected themes with written notes to guide the trail, and a final aggregation of the major themes, again with notation to guide the trail.

Findings

This study used a qualitative semistructured interview methodology to gather information about the
thoughts and perceptions of CSUSB faculty and adminstration. Since qualitative research methodology is naturalistic and oriented to discovery rather than hypothesis testing, data about environmental issues were derived from the perspective of the person being interviewed. Interview segments were grouped by theme and analyzed to discover the content of faculty and administrators' experiences, knowledge, and beliefs. The following section is a synopsis of the recurrent themes found.

Education as a Solution

From the human perspective, our environment consists of all non-human surroundings, both "living" (biological) and "nonliving" (geological) as well as all humans, both "living" (present populations) and "nonliving" (future generations). This natural environment was described as influencing, and being influenced by, the spiritual, social, political and commercial landscape. Therefore, researching academic perceptions of the environment has required ranging over a wide terrain. Although no one can hope to be fully informed over so broad a terrain, the researchers have attempted an analysis which one can hope will provide a useful catalyst for further
exploration, particularly for those participants who have not previously thought much about education within an environmental context. This should inform and strengthen a response to the challenge posed by global environmental overload.

Though crisis and responsibility were dominant themes, the main issue asserted by participants was a lack of environmental knowledge in every discipline. This makes the interdisciplinary aspect of environmental studies very fascinating. It appears that the faculty at CSUSB is quite progressive in that they are open to more "permeable departmental boundaries" (Parini, 1995). However, professors seemed instinctively territorial. This was evidenced by comments such as: "Geologists are the only ones who can find, protect, and preserve fresh water, a greatly needed natural resource", "Economists can prioritize what engineers do.", "Community organization by social workers is what it's all about.", "Anthropologists at the international level are in the best position to actually have ideas about how things can be changed.", "Chemists are the ones in a position to explain chemicals and how they are being utilized." On the other hand participants unanimously agreed about the need for the broad picture. Yet they had disagreements
on the means by which "the broad picture" should be taught.

It is the belief of the researchers that environmental studies offers a natural place for various branches of knowledge to meet. Participants agreed that students could begin to make connections if disciplines made connections. Interdisciplinary teaching could help close the gaps between global, local, social, and personal perceptions to aid students in piecing together the broad picture. One participant posed the possibility of offering a single course focused around one aspect of the environment taught by every angle from literature to chemistry. This would provide a concrete example of how students can make connections later in their academic careers. Students would then be able to apply this to other areas. A course like this is attractive because it has more to do with the common ground it provides rather than the distinctions between disciplines.

Education is one response to controversial problems. It addresses diversity, diversity of thought and disagreements of the minds. On any one issue there are always at least two viewpoints, and empirical data to support them. Nevertheless theory is necessary because it provides a simple framework to explain complex
interactions. Even if we disagree everyone needs to have some basis, some structure of reality. Participants relayed a belief that education is about creating theories and creating individual structures. Many participants maintained that the theories in undergraduate education are often perceived as 'truth' by students. Students simply learn to regurgitate the 'truth' that is professed in class. It has been demonstrated through the history of scientific 'truth' that as some minute detail is discovered that cannot be accommodated by the structure the old theory is replaced with the new which is irreconcilable with the old. Theory therefore is simply a product of what a particular society thinks is important. Therefore education should be about exposing students to different scientific truths and leaving it to them to come up with their own truth based upon what they learn. This is why broad based education is very important; it draws attention to the landscape, to the whole environment, human and natural.

Environmental education at CSUSB as an overall response has been tentative. Critical thinking and analysis on the other hand were deemed much more important and emerged as a theme for response to the global environmental problems. There is still a shallow
understanding of the ultimate dependence of our welfare upon the integrity of ecosystems. However, particular faculty members have demonstrated considerable concern for the need of an environmentally conscious campus. An overwhelming number of faculty expressed the need for citizens (i.e. voters, legislators, politicians, business people) with a critical thought process in order to address the complexity of environmental dilemmas. The problem is that many people do not feel connected to environmental problems. There are two levels in which to view this, the global and the local. Local is within one's own immediate environment. Education needs to connect local events with global events. This means making urban students and faculty who are fundamentally separated from the natural environment aware of their impact. There is a lack of sensitivity and connectedness to it. A professor stated, "Studies indicate that when people go camping less than one percent will go more than one mile on a trail". They use the natural environment functionally. Many participants believe that people are fundamentally not in touch with nature which indicates the reason for so little care or concern for it. The criminal justice participant asked, "How can we get people excited about protecting the
environment when they are afraid to leave their own house?" On the same note, most participants maintained that people prioritize, and they believe that primary safety outweighs environmental protection. Furthermore, they emphasized an idea that people fear nature because they don't know how to participate in nature.

Participation within the environment offers a unique education in its ability to open people up to a different dimension and a different perspective. Participants expressed a belief that nature offers a universal language that adults and children from many cultures can understand. Several participants relayed personal experiences within nature of enriching or spiritual significance as they felt a connection to the earth. Environmental issues became obvious and important as they experienced a positive transformation within the self. They claimed that getting people outside becomes an education in itself.

Courses Related to the Environment

CSUSB currently offers an MBA course specifically addressing environmental issues and management. In addition, The Department of Management and the Economics Department are currently in the beginning stages of creating a general education course which will focus on
environmental issues. This course will pay particular attention to natural resource issues, such as the depletion of energy sources and will consider alternative technologies. Furthermore, an elective entitled, "Economics of the Environment" is currently being offered twice per year. Also being offered at CSUSB is "Chemicals in our Environment", a General Education course taught by The Chemistry Department. The professor's vision is for students to have "the big picture". An introduction to geology course was described by the instructor as a course in becoming a better citizen. It teaches people to have a well constructed, well informed understanding of the environment. The Department of Social Work offers a seminar on "Social Work in the 21st Century" wherein major interconnected threats to our global survival and social welfare, including poverty and environmental degradation are analyzed and discussed.

CSUSB also offers a Masters of Environmental Education. Apparently there is some controversy over the appropriateness of the curriculum. Environmental education is often a course in environmentalism, which is becoming propaganda doctrinaire or a buzz word for activism. Environmental issues become politicized and
have become a code word for feelings of responsibility. Some participants feel that environmentalism as with other 'isms' should be viewed as human problems, and taken out of politics and left in education where they belong.

A number of participants implied that their discipline emphasizes the present and proximate environments, political, economic, social and physical. They agreed that undergraduate education offers society people who have a different thought process and an ability to make informed decisions using critical analysis. However, they were concerned about their ability to expand their ideas in space and in time, rather than focusing on the immediate because of its imminent importance temporarily. They expressed dissatisfaction in that a holistic view was often lost in overspecialized courses.

The danger in specialization lies in its discord with holistic solutions. Arrogance and ethnocentrism are the results of overspecialization. The people who have historically exploited the environment including other people have been people without a holistic picture. The main objective of a liberal arts education is to raise awareness of the broad picture through science, art,
literature, music and theater. Education can make small incremental changes by modeling and stressing the interrelatedness of every discipline. With more interaction between people in hard sciences and social sciences students and faculty would at least feel that they could digest some of the complex issues at a level of comfort. In turn they could try to deal with the issues and help make important decisions. Again, it is the belief of the participants that the answer to environmental problems is not necessarily environmental education but a body of people with critical thought processes.

Discussion

Summary

The findings of the study reflect the perceptions of participants at only one location and after only one round of exploration. The interviews and round table discussion were relatively simple, yet they addressed empirically one of the major conceptualizations of the social work profession—systems perspective. The study methodology was appropriate for its purpose: to call
together an influential group of people to better understand the type and extent of environmental problems in an arena that can facilitate exploring the interrelatedness of disciplines.

Participants reported a broad spectrum of political, cultural, and personal obligations. Not surprisingly, the most frequently reported solution involved education. The results express the positive effect of higher education on the global environment.

As was predicted the researchers found awareness of persistent environmental injustice against people with little economic and political power. Participants focused on the need to educate those people so that they could ascend from the position of victim of predation by the powerful. Another common theme was overpopulation of the world. Although one participant did not believe that population pressures are problematic the majority were less optimistic. Several participants asserted the need to educate women particularly poor women. Many poor couples have children as part of a strategy for economic security. With a higher education they could secure other forms of income. In addition international education projects in child health care and fertility control were among the most frequently mentioned
solutions.

Not surprisingly- but unfortunately- participants confirmed the notion that the present culture will only act when faced with crises. The majority held a belief that this is not true for educated people. Educated people have the ability to conceptualize things before a crises and create solutions. However, the problem remains that the 'educated' have done unprecedented damage to the earth over the past 100 years. Although participants were hard pressed to identify specific alliances responsible to change that, education to the masses seemed to be the preferred solution.

Participants identified education of voters and legislators in particular and children in general. Some participants responded to the perceived audacity of human beings to abuse the earth. There was unanimous agreement that the natural includes humans and we have a right to use nature to sustainruth'. The researchers interviewed 21 participants and came up with 21 interpretations of the environment. This doesn't mean that the perceptions of participants on either end of the continuum are wrong, these are simply their perceptions.

The advantage of this methodology is the admission
of multiple perceptions which allow for continuous input. There is a real need to develop an arena where multiple perceptions from divergent disciplines can converge. There is also a need for holistic research and dissemination of that knowledge. Good teaching comes from good research which creates good leaders.

Recommendations for Further Research

An important step in establishing a knowledge base about the environment is to conduct a holistic all encompassing exploration of the established research, perceptions and commitments to action. Objectives for such a study should include experts from different disciplines; identifying attributes from professions that influence the environment; determining aspects of proficient preparation and training that are most useful in preventing further environmental destruction; exploring the emotional, physical, and professional connections to environmental issues; and determining how the issue is currently addressed in all curricula.

Findings from such an investigation could have significance in two areas. First, data about sustainable technology could guide individual's daily living styles, business approaches and policies of professional practice
in all disciplines. Such information could provide a basis for the design and delivery of information and would be valuable in assessing the safety of the structure and organization of our global environment; political, social, and economic. Secondly, findings could guide higher education programs in the development of interdisciplinary teaching and learning to enhance students' awareness of the interrelationship and connectedness of the universe. Bridging personal actions with global consequences would further foster the theoretical and applied knowledge of environmental issues.

This project has selectively focused on the use of the constructivist research paradigm. However due to limitations in time, the large number of potential stakeholders, and the broad scope of the research topic; sources were not exhausted and themes were not saturated. This particular project therefore has potential to continue until such criteria are met. The researcher's recommend a more "focused exploration" for future interviews. Future rounds could focus on an aspect of the environment i.e. overpopulation or local air quality. Findings from the second or third round of investigation could aid in developing a model for connecting
disciplines. The findings could be more discipline specific; shedding light on the interconnections with detail to delineate the different disciplines foci.

Limitations of Study

The study population was limited to CSUSB faculty and administration. Information is not available, therefore, to compare the characteristics of CSUSB with the larger population or the student population. Thus, any generalizations to the totality of environmental perceptions and solutions must be made with caution.

An additional limitation concerns the panel of CSUSB faculty and administration. Although participants were contacted on the basis of their position as chair of a department or referral from a department chair, not all key participants identified were interviewed. Therefore, there is a relatively large proportion of missing data. A related problem is that when a participant was interviewed information from the original interview was obtained and time did not permit for respondents to revise their statements after the influence of the process. Thus, for example, a participant may have altered their viewpoint slightly after interacting within the round table discussion. They may have been presented
with new information which they had not previously considered subsequently assimilating it into their own worldview. Therefore the old viewpoint appears as part of the results and may not be a true representation of their thoughts currently.

Furthermore the round-table discussion was not as concise and fully informed as it might have been if time had permitted a more complete exploration of themes with individual stakeholders prior to the meeting. In addition the researchers' failed to elicit a formal commitment from participants to continue the process. However, it was likely necessary to provide a non-threatening setting in order to have ample participation during the first round of the project. If participants had perceived that they would be expected to commit more they may not have shown up in the first place.

Implications for Social Work

The Research Process

The researcher's original intention of the group process for exploration purposes was based upon the concept of "the group as a social microcosm of society" (Yalom, 1995). By choosing members from different
disciplines the researchers expected that group members would interact with other group members as disciplines interact with other disciplines in the practice sphere, creating a macrocosm similar to one outside the university setting. Furthermore, throughout the process, the researcher's had a unique opportunity to understand and assess the dynamics of divergent and often conflicting world views based upon the theories and philosophies of their disciplines. This miniaturized representation of the social, political and economic universe was ideal for assessing potential solutions while concurrently spreading vital information.

Social Work involvement in interdisciplinary dialogue has been limited. This study illustrates the richness of the integrative framework utilized. Social microcosms which represent the political, social, and economic universe could be effectively utilized to explore solutions to other dilemmas which threaten global social welfare. These include but are not limited to national mal-nutrition, global starvation, urban and domestic violence, as well as war.

Linking Social Work and the Environment

One of the major roles or functions of a social
worker is to enhance interactions between individuals and their environments. Despite the intimacy of these interactions, some environmental issues extend far beyond this familiar level and require concurrent efforts of several disciplines on several levels. In the first instance, a social worker may enhance an individual's personal environment by assuming a mediating role offering explorations that use wilderness experiences as therapeutic tools in understanding the self. In addition psychosocial assessments of individuals and families could include aspects of the natural environmental, i.e. lead paint in the home, flight patterns, the availability of fresh fruit etc.. In addition, as one participant suggested, participation within the natural environment often indicates a sense of spiritual strength as well as some sense of connectedness to others. Social workers can draw from these individual strengths.

In the second instance, a social worker may join with other professionals in a holistic approach to improve social welfare through community-based environmental movements. NASW could provide useful recommendations for community organization, planning, development and change around environmental issues. NASW could also serve communities threatened by toxic waste
and other environmental hazards by helping citizens determine strategy for dealing with the problems.

Social workers may also work with public officials developing policy to deal with the full range of interconnectedness among all systems within Earth's biosphere. Social workers can promote equality, establishing economic and social policies that dismantle a system where a minority of people consume a disproportionate share of global resources. Perhaps the role of macro practice social work is to advocate for future generations, which means advocating for the environment. The future of mediation between individual and environment depends in large part on the commitment of social workers to acknowledge "the impact of environmental abuse on the physical and mental health of our clients and ourselves" (NASW, 1994, p.104).
INFORMED CONSENT

The study in which you are about to participate is designed to bring together the primary view points related to environmental sustainability as addressed by five major schools and administrators of this university. This study is being conducted by Gary McMane and Jane Ross under the supervision of Dr. Morris and Dr. Mary, professors of Social Work. This study has been approved by the Institutional Review Board of California State University San Bernardino.

In this study you will be asked to share your personal opinions about environmental sustainability and the responsibility of CSUSB in this endeavor. Within two weeks after an initial interview, you will be asked to make corrections on a write up of the contents of the interview. This process will occur twice. Once you and the researcher have agreed upon the accuracy of the final write up of your construction, a copy of each construction will be delivered to each stakeholder. After reviewing all of the constructions, you will be asked to participate in a round table informed discussion with other stakeholders. Only opinions pertaining to the central theme: responsibility of CSUSB to
environmental sustainability will be explored. This study requires one hour and thirty minutes for the initial individual interview and about thirty minutes for the subsequent interview, as well as two hours for the round table discussion.

Please be aware that your opinions will be shared with other stakeholders; your professional colleagues. At no time will your name be reported along with your responses. All data will be reported in group form only. However, you may be easily identified by your construction based upon your academic discipline. At the conclusion of this study, you will receive a report of the results of the final discussion.

Please understand that your participation in this research is totally voluntary and you are free to withdraw at any time during this study without penalty.

I acknowledge that I have been informed of, and understand, the nature and purpose of this study, and I freely consent to participate. I acknowledge that I am at least 18 years of age.

_________________________    _______________________
Participant's Signature       Date
(Note: this informed consent is adopted from K. Bordens and B. Abbott's book "Research Design and Methods: A Process Approach (2nd Ed.) page 121." Only slight modification has been made.)
Appendix B

PROJECT DESCRIPTION.

The present study will attempt to bring together the primary viewpoints related to environmental sustainability as addressed by the five major schools and administration of this university. The goal is to create an arena to address one of the most pressing issues at this time in human history. In order for human life to continue on this planet into the next millennium serious steps must be taken to produce responsible, environmentally aware, leaders in all academic fields. It is the researchers aim that this university be held responsible for providing an educational foundation for future leaders that will address the need for sound environmental practices in all professions.

The researchers will employ a constructivist research design. One that does not assume a single objective reality but multiple realities. Constructivist research attempts to hear, understand, and learn the continuum of realities from stakeholders in order to have increased awareness of divergent realities. Through the involvement of people in the research process the researcher can identify conflicting views from which to derive further participation in collective sharing, analyzing and negotiating between selected stakeholders. The intention of the present research is to make connections between academic disciplines. To present data from the production of knowledge, and to reshape the worldviews of each stakeholder.

The following is an outline compiled by Ned Cooney and Steve Steinberg (1995) for the logistics of activities following field excursions, closure and termination.

1. Analysis and write up of each interview will take place within 24hrs. of the interview.
2. The write up will be delivered to the stakeholder either in person or via E-mail. They will be requested to read and make any necessary changes, if they feel their ideas have not been accurately represented. This process should take no more than two weeks and the changes will be delivered through E-mail or picked up in person by the researchers.
3. A second interview with each stakeholder is warranted in order to clarify any details of the first interview and write-up.
4. A version of the stakeholder's construction from the second interview will be written up and delivered to the
stakeholder. The same procedure as #2 will be followed.
5. Once the stakeholder and the researcher have agreed upon the accuracy of the write up, each individual analysis will be compared and contrasted with other constructs. A rudimentary list of common themes will be compiled.
6. This list will then be delivered to each stakeholder for perusal and to inform the third interview. The same procedure as #2 will be followed.
7. A final version of the stakeholder's construction will be written up and delivered to the stakeholder. The same procedure as #2 will be followed.
8. Once the stakeholder and the researchers have agreed upon the accuracy of the write up, a copy of each construction will be delivered to each individual stakeholder. At which time a date will be set for the previously agreed upon round table discussion. The informed discussion will be the first of hopefully a series of interdisciplinary discussions about solutions for creating a sustainable society.
9. A write up of this discussion will be completed within 48 hours of the meeting. A list of long term and short term solutions will be compiled.
DEBRIEFING STATEMENT.

The reason for conducting this research is to provide an arena to address the primary viewpoints related to environmental sustainability as addressed by the five major schools and administration of this university. It is the researchers' aim that this university be held responsible for providing an educational foundation for future leaders that will address the need for sound environmental practices in all professions. Each stakeholder will participate in a round table discussion, the written results of this final analysis will be dispersed to all stakeholders involved. Dr. Mary can be contacted at telephone number (909)880-5560 if the stakeholders have any questions or concerns as a result of their participation.
REFERENCES


