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Teacher preparation in sustainable development content

Williams, William Cody, Ph.D.
State University of New York Col. of Environmental Science & Forestry, 1994
TEACHER PREPARATION IN
SUSTAINABLE DEVELOPMENT CONTENT

By
William C. Williams

A dissertation
submitted in partial fulfillment
of the requirements for the
Doctor of Philosophy Degree

August, 1994

Approved:
Faculty of Environmental Studies

Major Professor

Faculty Chair

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ABSTRACT

Williams, William C.
Teacher Preparation In Sustainable Development Content

This study examined the preparation of U.S. preservice teachers in sustainable development content. Data was gathered from a survey of education department administrators at institutions providing undergraduate teacher education. Findings suggested that although sustainable development content was included in the course work of preservice teachers, there was little emphasis upon this content. Neither the ethical aspects of sustainable development, nor teaching receive emphasis in the preservice teacher curriculum. In addition, institutions place little emphasis upon integrating content and pedagogy in regard to sustainable development content.

In addition to the survey of educational administrators, educational reform literature and state teacher certification requirements were reviewed. Little was found in this literature or these requirements which would focus teachers toward sustainable development.

The information gathered suggested that there was little in the education of teachers which would allow them to instruct in anything but an anthropocentric, pro-growth, mechanistic worldview. If education is to play a role in any societal change which stresses sustainability, a departure is required from the present content, process, and organization of preservice teacher preparation.

Appendix chapters provide a description of the philosophical basis of education for sustainable development. A description of schooling oriented toward life in a sustainable society was presented to allow educators the opportunity to review possible changes from our present educational system. Also included was a description of the content, process, and organization of teacher preparation which would match education for sustainable development. These changes in the education of teachers were presented to expand the educational debate by depicting a broader conception of community, need fulfillment, and moral obligation.

Key words: sustainable development, teacher preparation, equity, sustainable society, obligation to life

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VITA

NAME: William C. Williams

DATE AND PLACE OF BIRTH: September 13, 1947 in Mankato, Minnesota

EDUCATION:

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Prologue

During the course of writing this dissertation the need for education for sustainable development has become no less critical. The consideration of relationships at four equity levels used to frame sustainable development seem even more appropriate now than when the study began. We must address the unbalanced relationships among nations, within nations, between humans and other species, and between present and future generations. The logic used to continue domination and subordination in these relationships must be examined and changed. Without directing social and economic change toward the development of sustainable societies, we will continue to live in ever increasing pathological relationships.

The symptoms of our pathologies surround us. As I sit to write this prologue the symptoms of unsustainable societies fill the newspaper at my side. Here are some of the topics covered by this newspaper organized by categories of equity.

Equity Among Nations

* Trade talks between Japan and the U.S. suggest protectionism and the importance of economic growth and economic advantage to both countries.

* The international embargo of goods to Haiti continues because of instability and human rights violations found in that nation. The poverty in Haiti continues, however.

* The peace in the Middle East is shaken by the massacre of Arabs at worship by a Jewish fanatic. Arabs and Jews struggle to find an equitable way of dividing territory and living in peace.
NATO planes enforce no-fly rulings over Bosnia. The ethnic battles over the division of land in that part of the world continues.

**Equity Within Nations**

* Minister Farrakhan spreads a mixed message of love and hate as the Nation of Islam rebels against the inequity between white and black races both in the U.S. and around the world.

* The government of Mexico seeks to appease the Indian rebels in southern Mexico who seek justice for their people.

* The closing of military bases in the U.S. causes great economic turmoil within the communities where these bases are located. This topic also involves security issues. How much of our production should be appropriated for military protection?

* The Three Strike Bill for U.S. repeat offenders is described and discussed. Issues of race and class are an important part of this consideration of retribution, security, and societal control.

* Gender issues are described in further developments in the Navy's Tailhook scandal.

**Equity Between Humans and Other Species**

* The use of other species for testing products that humans consume has declined.

**Equity Between Present and Future Generations**

* The U.S. Federal budget issues. Who benefits and who pays because of the budget deficit?

It is difficult for most North Americans to accept their meritocratic and anthropocentric conceptions of justice as a causative factor in the pathologies which impact our lives. However, the assumptions of these conceptions of justice dominate the norms and values of American institutions and citizens. The headlines of our daily newspapers describe symptoms of an inequitable justice system. These headlines also illustrate a
worldview and economic system which is out of balance with the land community upon which those systems depend.

During the writing of this study the Earth Summit was held in Rio in June of 1992. This Summit marked the international recognition of the connections between development and the environment. The Agenda 21 document produced at this conference was signed by more than 178 governments and represents a blueprint of global action for sustainable development. This conference recognized the strong relationship between equity issues, the earth’s natural systems, and the sustainability of human life. There seemed a global consensus coming from this conference that humans must address environmental, population, development, resource, and pollution issues in a holistic and integrated fashion.

On the down side, however, Agenda 21 provides a plan for action which fails to question neoclassical economic assumptions concerning human nature and modernity. Agenda 21 also fails to adequately address the difficult issue of reducing human population growth. The devastation of absolute poverty was a focus of this conference, but the representatives failed to renounce the equally devastating impacts of absolute affluence. Those attending the Earth Summit appeared to reach a consensus of action dependent upon continued economic growth. They skirted the troubling questions of justice which sustainable development would require.

Sustainable development is defined by this study as a
mixture of ecology and ethics. At first glance these two academic orientations may seem strange bedfellows, but both are strongly related to limits and relationships. Morality involves the imposition of limits upon our behaviors. These limits extend from the inter-relationship of community and individual. Similarly, ecology involves the physical limits of life and the interaction of relationships inherent to the land community. Both ethical and ecological relationships must be combined if we are to direct our economic, social, and political institutions toward human sustainability.

Regardless of definition, sustainable development uses the language of justice and equity to frame the changes in our relationships. However, many questions must be resolved concerning sustainable development. Who benefits from a proposed change? Who must bare the burden of change? Who is included in the consideration? Who evaluates these benefits and burdens? What criteria or principles do they follow in the evaluation? How are considerations of time and space included? How might change toward a sustainable society be accomplished?

These questions reflect the political nature of sustainable development. Although theoretically sustainable development combines ethics and ecology, in practice sustainable development is a study of power relationships. The lack of influence of basic needs oriented plans for sustainable development belie the importance of power relationships at all levels of societal relationships.
The Evolution Of This Study

The writing of this document occurred in varying intensity for about three years. In the summer of 1991 the introduction and the literature review was begun after a planning meeting with my academic advisors. The original plan included a survey of institutions to ascertain the general coverage of sustainable development content for K-12 preservice teachers and a scheme for describing institutions with exemplary coverage of this type of content for their preservice teachers. During the Summer of 1992 I conducted a survey instrument pretest using the administrators of SUNY Colleges with preservice teacher education programs.

That summer I also wrote to authors and researchers in the areas of environmental education, multicultural education, human rights education, global education, and moral education. This letter expressed my interest in identifying colleges with exemplary programs for K-12 preservice teachers in sustainable development content. The results obtained from this letter were discouraging. Most of the writers and researchers in these academic areas were sympathetic to this type of teacher preparation and nearly 90% of these individuals responded. There were no institutions of higher learning that stood out as preparing K-12 preservice teachers in sustainable development content, however. Often the colleges that were suggested by some authors were dismissed by the people working at those institutions as not having this type of preparation for their
preservice teachers. The reputations of many institutions seemed to exceed the programs found there. Additionally, I reviewed the curricular organization and course descriptions found in the college catalogues of these institutions. This review reinforced the lack of attention to sustainable development content in preservice teacher preparation and indicated that the plan for the dissertation required revision.

The writing continued into the Fall of 1992, but was halted in late October as preparations were made for a teaching assignment in the spring semester. It was in the Fall of 1992 that a first draft of the introduction, review of literature, and methodology chapters of this dissertation were submitted to the members of my academic advisory committee. The Methodology chapter remains as originally planned as it was hoped that through the general survey instrument several exemplary institutions might be volunteered by respondents.

Late in the spring semester of 1993 the survey instrument was mailed, with a second mailing occurring as the summer began. Survey results were completed by the end of that summer with a response rate of just over 50 per cent. The survey results generally indicate that there is little preparation of preservice teachers in sustainable development content areas. Unfortunately, no exemplary institutions were identified by the respondents of this survey.

Several administrators stated that they found the survey instrument difficult because of its holistic approach to teacher
preparation. The questions asked were not discipline specific, but lumped K - 12 teachers.

To look for the inclusion of sustainable development content in U.S. education, several other investigations were undertaken. State requirements for certification were reviewed for the inclusion of sustainable development content in the certification of teachers. A book by Goddard (1993) entitled Teacher Certification Requirements was reviewed. Attention was paid to any course requirement or tested competency which might include sustainable development content. To verify the certification standards provided by this author a letter was sent to each of the certification officers in all fifty states. The results demonstrate a general lack of inclusion of sustainable development content in the teacher certification process.

The review of educational reform literature was included as an indicator of what direction teacher preparation might be headed. The results of this review were similar to the findings of all of the other investigations. Little was being done or called for which would indicate that preservice teachers would graduate with an understanding of sustainable development content.

The study’s plan required adjustment to allow for a more basic description of teacher preparation in sustainable development content. The problems encountered by some of the administrators suggested the need to clearly identify the philosophical orientation and practical implementation of
education for sustainable development. This orientation coincided with my interests in both the education process and environmental ethics.

All of the information gathered suggested that there was little in teacher education which might prepare teachers to instruct in anything but an anthropocentric, pro-growth, mechanistic world view. If education is to play a role in any change in our society which features sustainability, a departure is required from the present content, process, and organization of preservice teacher preparation. An option is needed that will expand the debate over education. We require an ecocentric orientation to replace our troubled anthropocentric conceptions of education. We require a holistic orientation for schooling and teacher preparation to replace our fragmented, mechanistic, and specialized indoctrination. The education process must openly investigate power relationships and our conceptions of justice. The teachers of our children require an education into the formal language of ecocentrism.

We need a description of the philosophical basis of education for sustainable development. Changes in the education process should be initiated by debate over the philosophical orientation of that process.

We need a description of schooling oriented toward life in a sustainable society. This description would allow educators, parents, and students the opportunity to review possible changes from our present educational system.
The content, process, and organization of teacher preparation matching education for sustainable development should be provided.

Appendices three through eight demonstrate that I have begun to address the conclusions reached from this study of preservice teachers in sustainable development content. These appendix chapters are an outcome of the investigations concerning teacher preparation and sustainable development content, but are beyond the scope of the dissertation. Appendices three, four, five, and six provide a philosophical basis for education for sustainable development. Appendix seven describes some of the changes in content, process, and organization consistent with schooling in a sustainable society. Appendix eight describes the organization and content included in preservice teacher preparation consistent with sustainable development. An implementation chapter will eventually conclude this writing. Portions of the first chapter and literature review of this dissertation along with the chapters found in the appendix will be edited and reorganized for publication.

Colleges don’t concentrate their preparation of preservice teacher education programs on sustainable development content. This may, on the surface, seem a very predictable and undisturbing conclusion. However, this study frames sustainable development in terms of equity and justice. As I have suggested, our newspapers are filled with these issues. Does this mean that colleges are graduating teachers with little or no preparation in
the relationships which dominate the front pages of our newspapers? I believe the answer to that question is a resounding yes. Even further, I believe the education of preservice teachers is generally irrelevant to the needs of our society and the land community upon which we depend. It is hoped that this study and the description of education for sustainable development will expand the educational debate by depicting a broader conception of community, need fulfillment, and moral obligation.
Introduction

Education plays an important role in both the reproduction and transformation of societal relationships. With an emphasis upon economic growth, American leaders chart a course which will dramatically impact both the American and global environment (Henning, Mangun, 1989). American education has followed the lead of its economically orientated, pro-growth leaders by providing children with the mindset required of an industrialized society (Bowles, Gintis, 1976; Harman, 1988; Nasaw, 1979; Peterson, 1990). This type of orientation lacks understanding of basic ecological relationships, however, and fails to prepare future American decision makers with an understanding of the consequences of overemphasis upon economic growth and the use of military spending to stabilize the economy (Albelda, et al, 1988; Crowell, 1989; Daly, 1981; Kennedy, P., 1987).

Education concerning the relationship between the environment and development, including socio/political factors, becomes critical to citizenship in the 21st century (Schoenfeld, 1981). Sustainable development focuses upon this type of content and aims to change human values and behaviors toward a more ecologically harmonious relationship with the earth (Callicott, 1986; Global Tommorow Coalition, 1990a; Harman, 1988; Taylor, 1986).
Institutions involved with teacher education find themselves torn between the demands and restrictions of college culture and the reality of producing teachers who will fill the needs of U.S. schools (Goodlad, 1990b; Tierney, 1988). College professors must research, write, serve on committees, teach classes, and protect their disciplinary turf from the intrusions of other disciplines. Many professors are insulated from the practical implementation which takes place in schools as many years have passed since they attended or taught in school. The technological rationality characterizing our education system also encourages this split between the research and theory of the institution and the practical application taking place in schools (Hart, 1990; Robottom, 1991). This split is characteristic of the rationality which separates humans from the environment that sustains them.

The financial realities of operating a college business finds teacher education low on the list of priorities for most college administrators. Typically, administrators concentrate on curricular areas involving the most research, grant money, prestige, and where the alumni will donate the most revenue (Goodlad, 1990a; Johnston, et al, 1989). As a general rule, when the research agenda for an institution increases, the status of teacher education at that institution decreases (Goodlad, 1990b). Rarely on the college level do instructors receive tenure or merit pay raises because of their teaching prowess. In fact, in many institutions education courses are handled by adjunct staff while educational research is done by doctoral level students.
This practice along with the image of teacher education as a dumping ground for students with lower academic averages suggests a lack of importance placed on teacher education (Carnegie Corporation, 1986; Holmes Group, 1986).

Much of the research concerning education in sustainable development concepts pertains to pre-collegiate education and comes from investigation of sustainable development through either environmental education or global education disciplines. Little has been done, however, to investigate the inclusion of sustainable development content in preservice teacher education programs. This is not surprising, as educators have done little to investigate teacher education programs in general (Damerell, 1985; Goodlad, 1990b). Regardless of the paucity of research concerning teacher education and teaching in general, the past forty years does not lack for calls to reform teacher education (Klausmeier, 1990).

Change in curriculum and teaching practices is a complicated and slow process (Barney and Jensen, 1989; Fullan, 1982). Much evidence exists demonstrating that calls for educational change is motivated by economic and cultural forces found outside the school (Ginsburg, et al, 1989; Nasaw, 1979). Although educational change often reflects the changes occurring in society, the struggle over the structure, process, and content of education can also be seen as an attempt to diffuse criticism from those in power. Concern over education deflects attention from problems with the economy, thereby maintaining the status
quo (Bowles and Gintis, 1976; Foucault, 1979; Giroux, 1981).

Beyond these considerations, however, schools are also autonomous, have a life and structure of their own, and play an important role in not only the reproduction of society, but the production of societal goals, ways of thinking, and justification of societal norms and actions (Giroux, 1981; Nasaw, 1979).

Sustainable development education represents a holistic type of study which doesn't fit with present popular neoconservative or liberal conceptions of educational reform, the organizational structure of either schools or colleges, or the ethical systems which justify the organization or processes found in educational institutions (Bowers, 1993; Callicott, 1986; Crowell, 1989; Giroux, Freire, 1989; Su, 1992; Taylor 1986). As a result, education in sustainable development content faces an uphill battle to gain acceptance and be part of the school curricula in the U.S. All U.S. citizens and especially U.S. educators need to reassess the characteristics of the society our children will enter, and the outcomes expected from the children who will shape the future (Glasser, 1990; Vickery, 1990). Education in sustainable development content will require changes in content, pedagogy, and institutional structure for both schools and preservice teacher education. Changes in schooling and teacher preparation must be closely linked for successful reform to occur (Goodlad, 1990a).
Organization Of The Study

The descriptions provided by this study were divided into five sections: Introduction, Literature Review, Methodology, Results, and Analysis/Discussion. Chapters One and Two introduce the study. Chapter One, entitled Statement of the Problem, begins with a statement of the purpose of the study along with primary research questions which correspond to those purposes. A problem statement follows this statement of purpose. This statement is divided into sections involving development and environmental issues facing U.S. citizens, and the issues teacher preparation institutions must overcome in preparing future teachers to instruct their students regarding sustainable development. The first part of the problem statement defines the issues with which future citizens of the U.S. will have to cope and also the outcomes expected of students relative to those issues. The second part of the problem statement identifies issues involving current practices in teacher education. Current practices lead to teacher qualities, knowledge, and behaviors not suited to enhance student actions which would lead to the creation of a sustainable society. In conjunction with the problem statement, the introduction includes an explanation of the positional nature of the study and describes how the ethical basis of both teaching and sustainable development content leads to positional assumptions.

Chapter One continues with a description of the limitations of the study and the positional nature of this study. Chapter
One concludes with a discussion of the significance of the study. In this portion of the study, I explained the four levels of equity inherent to the sustainable development decision making process, and emphasize the importance of teacher education which will prepare teachers to help students live in a sustainable fashion.

The Conceptual Background of the Study is the title of Chapter Two. I described the conceptual history of sustainable development in this chapter. Historical background and definitions are included from academic areas through which sustainable development content has evolved. Definitions of development, a sustainable society, and sustainable development are provided. The definition of sustainable development was explained through the moral decisions which must be made at four levels of equity. A theoretical model provides an extension of the definition.

Because this study crosses several disciplines, the literature review making up the second section of the study was divided into five chapters. The literature review begins in Chapter Three with a review of the sustainable development literature classified into four levels of equity: among nations, between humans and other species, within nations, and between the present and future generations. A matrix approach was used combining these four levels of equity with various theories of justice to describe our ethically diverse society. The conceptions of justice include the following theories: Virtue,

The educational reform literature was reviewed in Chapter Four. This chapter focuses upon recent educational reforms with an emphasis upon those reforms which include teacher preparation. This review includes: Tommorrow's Teachers, Educating America, Paideia Proposal, Education For a Democratic Future, Moral Education in the Life of the School, U.S. Prepares For Its Future, Time For Results, Those Who Can, A Nation Prepared, A Nation at Risk, and America 2000. This chapter of the literature review concluded with a description of the reform literature's impact upon the classroom.

In Chapter Five, state teacher certification requirements were analyzed for the inclusion of sustainable development content. Both course requirements and tested competency were included as part of this review. A state by state review of teacher certification requirements regarding sustainable development content can be found in Appendix One.

Chapter Six provides a review of teacher preparation in sustainable development content. In this chapter I emphasized the moral orientation of teaching and teacher preparation. Included in this chapter is a review of the literature pertaining to teacher preparation in related areas such as environmental education, sustainable development content, global education, and human rights education.
Chapter Seven concludes the review of literature and summarizes the implications drawn from the review of literature. Conclusions were drawn from the matrix of theories of justice and the four levels of equity. Conclusions were also drawn from the review of reform literature and teacher preparation for sustainable development. These conclusions form the basis of the investigations into teacher preparation in sustainable development content and the philosophy upon which education for sustainable development was founded.

The third section of the study, concerning methodology, was described in Chapter Eight. This chapter includes study objectives along with procedures and questions used to conduct this study.

In Chapter Nine, I described the results of the survey of administrators at preservice teacher institutions regarding sustainable development content. Because this is an initial exploration of teacher preparation regarding sustainable development content, simple descriptive statistics were used to frame the results. Brief discussions of the survey's results were included with the statistical representations to expand these numerical descriptions.

In the final section of the study, Chapter Ten, I discussed and analyzed the findings. This chapter brought together the conclusions drawn from the survey of administrators of institutions providing preservice teacher education, the review of state certification requirements, and the review of recent
There are six additional chapters found in the appendix which extends the analysis and discussion of this study. These chapters were written to widen the educational debate to include ecocentric considerations of community. Because there was so little evidence of preservice teacher preparation which might help teachers educate in an ecocentric manner, the appendix chapters represent a description of education for the purpose of living in a sustainable society.

In the Appendix Three, I introduced a philosophical basis of education for sustainable development founded upon an obligation to life theory. Our obligations to life and the primacy of quality are described. An epistemology for sustainability is then discussed. Economic assumptions along with conceptions of justice and time conclude this introduction to the philosophical basis for a sustainable society. The norms and values required of life in a sustainable society extend from these obligations.

The Philosophical Basis for a Sustainable Society: Norms and Values is the title of Appendix Four. In this chapter I defined norms and values. The norms which presently dominate U.S. society were then described. These norms include: anthropocentrism, liberty/autonomy, patriarchy, merit, paternalism, and rationality. This examination of present U.S. norms was followed by a description of norms which a sustainable society might feature. These norms include: ecocentrism, appropriate technology, power assessment, collaborative decision
making, integrated ways of knowing, ethical accountability for organizations, equality, and liberty. The chapter concludes with a description of values and beliefs which individual members of a sustainable society might hold.

In Appendix Five, entitled The Philosophical Basis For a Sustainable Society: Rules and Principles, I described the formal rules and principles which apply to our obligations to life. This chapter begins with a discussion of the knowledge and wisdom required of life in a sustainable society. A rationale was included which combines the fulfillment of essential needs with our moral obligations. I then described the four principles which combine to form the philosophical basis for sustainable development: the principle of sustainability, the principle of need, the principle of balance, and the principle of democratic inclusion. The chapter concludes with a discussion of retributive justice and our obligations.

The philosophical basis of education for sustainable development was concluded in Appendix Six, Philosophical Basis For A Sustainable Society: Response To Challenges To Education For Sustainable Development. In this chapter I sought to expand the explanation of the obligation to life theory as applied to education for sustainable development by discussing some arguments against this type of philosophy and this conception of education. First, sustainable development's problem with definition was examined. Second, I responded to liberal and conservative educational philosophy from the standpoint of
education for sustainable development based upon an obligation to life theory. Next, the questions pertaining to ethical monism and the pluralism of sustainable development were addressed. A discussion of sustainable development as an extension of Western ideology concludes the chapter.

In Appendix Seven, I provided a model of what schools might look like in a sustainable society. Included were changes in the organization of schools, teaching process, and curricular content. If teachers are to receive preparation in teaching for sustainable development, the schooling process must be described. It is important to recognize that we will not become a sustainable society without changes in the formal language and values which schools impart. Education for sustainable development is not simply a matter of tinkering with our present models of schooling. This chapter provides a description of what schooling in a sustainable society might look like.

The description of education for sustainable development was concluded in Appendix Eight with a model of preservice teacher education for sustainable development. In this chapter I described course content and provided an integration of content and pedagogy consistent with teacher preparation for sustainable development.
Chapter One

Statement Of The Problem

This chapter explains the direction taken by this study of preservice teacher preparation in sustainable development content. I began the chapter with an explanation of the purpose of the study and the research questions which guided the investigations. These sections were followed by a statement of the problem and the expected results. The limitations and positional nature of the study were also explained. The chapter concludes by describing the significance of the study including the relevance of both sustainable development content and teacher preparation which would match that type of content.

Purpose Of The Study

This study was designed to fulfill three purposes. In the first part of the study I described current institutional practices concerning the inclusion of sustainable development content in preservice teacher education. These practices include the description of specific content, teaching processes, and curricular/institutional organization.

The second part of the study provides a philosophical foundation for education for sustainable development. An ecocentric theory of obligation to life was described. This community oriented theory suggests the norms, values, rules, and principles required of life in a sustainable society.

The third part of the study provides a description of a
model of preservice teacher education in the sustainable
development content area. This model followed a description of
what schools might look like in a sustainable society. I
described specific content, teaching processes, and
curricular/institutional organization. These models of teacher
preparation and schooling combined ecocentric philosophy with
educational practice to prescribe a reform agenda for preservice
teacher education to match the needs of U.S. citizens of the 21st
century.

In summary, the first part of this study described what change in preservice teacher education has to build upon regarding sustainable development content. The second and third parts described models of teacher education programs in sustainable development content which institutions might want to build toward.

**Research Questions**

1. What is the status of teacher education in sustainable development content in U.S. institutions?
2. What philosophical orientation should teacher education for sustainable development follow?
3. What characteristics would a teacher education program in sustainable development content area possess?
   a. What characteristics of the schooling process must change if we are to become a sustainable society?
   b. What might a program for teachers in sustainable development content look like?
Statement Of The Problem

Many U.S. citizens lack an understanding of the interrelationship between development and the environment regardless of development's definition. This lack of understanding occurs even though there are thousands of non-governmental organizations in the U.S. with environmental and development objectives and concerns (Arcury, Johnson, 1986; Clark, 1989; Joy, 1986). In addition, U.S. citizens often fail to recognize the impact their actions and actions of their government have upon both the environment and development (Hancock, 1989; Lappe, et al, 1987; Robbins 1987; Van Matre, 1990; Zmolek, 1988). These interrelationships are critical to Americans, the people of the world, and the future of the biosphere (Global Tommorow Coalition, 1990a; World Commission on Environment and Development, 1987).

Americans are well acquainted with the symptoms of an unsustainable society, even if they do not understand the root causes. As Berry, W. (1989) states, these symptoms signify a disintegrating society.

"Mostly, we do not speak of our society as disintegrating. We would prefer not to call what we are experiencing social disintegration. But we are endlessly preoccupied with the symptoms: divorce, venereal disease, murder, rape, debt, bankruptcy, pornography, soil loss, teenage pregnancy, fatherless children, motherless children, child suicide, public child-care, retirement homes, nursing homes, toxic waste, soil and water, and air pollution, government secrecy, government lying, government crime, civil violence, drug abuse, sexual promiscuity, abortion as birth control, the explosion of garbage, hopeless poverty, unemployment, unearned wealth. We know the symptoms well enough. All the plagues of our time are symptoms of general disintegration." (1989, p. 131)
U.S. schools lack programs that might enhance an understanding of sustainable development content and behaviors which would lead toward a sustainable society (Disinger, 1989; Global Tommorrow Coalition, 1990b; Joy, 1987; Raffan, 1990; Ramsey and Hungerford, 1989). Few states require the inclusion of environmental education or global education in pre-service teacher education either through course work or competency standards (Disinger, 1987; Greene, 1984; Mitchell, 1985; Wilke, 1985) In addition, teacher education or college level instruction in the area of sustainable development content is often ineffective or non-existent (Berberet, 1989; Dziubek, 1984; Ham and Sewing, 1987; Merryfield, 1991; Volk, et al, 1984). Teacher education must be closely coupled with the goals and objectives of schooling to facilitate effective instruction (Goodlad, 1990a).

Solutions to environmental problems are often presented as technical problems for which science must find the answer (Ehrenfeld, 1981). This scientific orientation hides the political and social nature of environmental problems and the fact that these problems represent conflicts of interests at individual and societal levels (Athanasiou, 1991; Epstein, 1991; Falkenmark, 1993; Lee, 1989; Robottom, 1991; Shrybman, 1990). Our "environmental professionals" are often a product of this myopic technocratic orientation resulting in an institutionalized system of expertise lacking holistic perspective. Individuals
are provided with simple solutions for environmental problems which suggest that if they make simple changes in the way they consume, environmental problems will lessen (Cohen, 1990; Earth-Works Group, 1989). These simple formulas lack analysis of problems associated with social and political institutions that create our environmental symptoms (Athanasiou, 1991; Global Tommorow Coalition, 1990a; Hancock, 1989; Najafizadeh, Mennerick, 1989).

Without a background in sustainable development content, teachers will be unable to instruct their students regarding the ethical conflicts and issues inherent to the development - environment relationship (Penick, 1989; Porter, 1988; Ramsey, Hungerford, 1989). Changes in school presentation of sustainable development content must be closely coupled with changes in teacher education. The research and theory found in colleges must be combined with practical applications taking place in schools (Hart, 1990).

Teacher education in sustainable development content would be a part of a vision of economic and socio/political change which would lead to a sustainable type of society (Crowel, 1989; Gardner, Rosland, 1989; Harman, 1988; Robinson, et al, 1990). Because this vision represents a significant change in American society, teacher education in this content area becomes even more politically charged and controversial (Berman, 1990; Carbone, 1990; Goldsworthy, 1988; Wilke, 1985).
Infusion of environmental content in American schools has not shown itself as a successful strategy (Gigliotti, 1990; Ham, Sewing, 1987; Raffan, 1990; Simmons, D.A., 1989; Van Matre, 1990). Unfortunately, teachers that do provide environmental content to their students typically offer messages from an anthropocentric and mechanistic orientation (Bowers, 1993). Similarly, global education has also faced problems gaining acceptance in the school curriculum (Kobus, 1983; Metzger, 1988; Otera, 1983). All too often, the content of environmental education and global education is simply added to the other curricular demands placed upon teachers resulting in an intensification of their workload (Apple, Jungck, 1990). Beyond this overload, without the education of teachers in the sustainable development content area, the failure of infusion is understandable (Harvard Education Letter, 1989; Porter, 1988).

If infusion is to remain the principle strategy for including environmental and development content, teacher preparation institutions and American schools must closely collaborate to create a sequenced program in sustainable development content (Goodlad, 1990c; McKenna, 1991; Merryfield, 1991; Wilke, 1985). Most important may be the infusion of these concepts into the grade levels associated with the middle school (Kobus, 1983). It is through these years of school that students appear to be the most open to forming new conceptions concerning the relationships regarding community and social groups (Kobus, 1983). Unfortunately, the teachers at this grade level are often
the poorest prepared to infuse this content (Brown, M.A., 1988, 
Bueth and Smallwood, 1986). If separate course work in 
sustainable development content becomes the strategy, more 
extensive education of teachers will be required.

**Expected Results**

The following is a list of the expected outcomes of the 
proposed study:

* The coordination of sustainable development content will 
  be poorly organized even though it is present in most 
  teacher preparation institutions.

* Administrative support will be an essential component for 
  the purposeful inclusion of sustainable development content 
  into teacher education.

* The demands of liberal studies and professional development 
  segments of the education curriculum will allow little 
  flexibility for including sustainable development content.

* The sustainable development content area will be most often 
  found as a part of teacher education in the secondary 
  science or history concentrations, but will be lacking in 
  other secondary curricular areas, and especially lacking in 
  elementary teacher education programs.

**Positional Nature Of This Study**

The premise of this study is positional in nature. The 
study suggests that present teacher education programs are 
inadequate to meet the needs of preservice teachers, or the needs 
of the students these teachers will attempt to educate. 
Certainly this hypothesis doesn't fit the neutrality and 
objectivity standards characteristic of studies in the physical 
sciences. However, it should be recognized that there are 
different types of explanations and different methods for
understanding life's relationships (Harman, 1988; Hart, 1990). The ethical emphasis of both teaching and sustainable development content does not make this investigation conducive to the empirical and reductive nature characteristic of inquiry in the physical sciences. Ethical analysis emphasizes prescription rather than description (Strike and Soltis, 1985). Appendices seven and eight of this study demonstrate an emphasis upon ethical prescription by presenting a model for schooling and teacher preparation to meet the needs and objectives of preservice teachers and students entering a sustainable society.

Ethical inquiry includes facts, but concentrates upon obligations which can't be totally founded on factual scientific knowledge. Continuing on this theme, all ethics begin with an unprovable assumption (Strike and Soltis, 1985). Because of the characteristics of ethical inquiry, a reflection-in-action model for teacher education fits much better with sustainable development content and the demands of both learning and teaching (Hart, 1990).

Sustainable development content represents different societal goals, ways of knowing, and moral justification than the present technocratic, neo-classical economic, and meritocratic models presently followed in the United States (Korten, 1993). Sustainable development content is holistic and ethical by nature. It is typical of environmental educators to concentrate on the value changes required of sustainability and
environmentally conscious behaviors (Caudto, 1985). It is important to make the distinction between values and ethical decisions, however (Strike, Soltis, 1985). Value judgements are the way by which we decide our preference or taste. These judgements can be part of an ethical decision making process, but ethical decisions are best described as statements concerning obligation. Values are often thought of as subjective in nature; they have no right or wrong. We like, or prefer, a certain behavior. But, ethics are neither subjective or relativistic as they point us toward what we ought to do, our duties, our obligations. They represent more than just preference.

Although the advancement of scientific knowledge about the environment is part of sustainable development, the decisions which must be made concerning development and the environment are not primarily scientific or technical, but political and ethical (Athanasiou, 1991; Barbour, 1980; Carpenter, Kennedy, 1988; Paehlke, 1989). This political and ethical orientation is probably good since one of the most promenent features of the current scientific research concerning biophysical systems is the lack of knowledge concerning how the pieces of environmental knowledge fit together (Clark, 1986; Hall, et al, 1986). It is critical that citizens of the U.S. become more actively involved in the political and moral decision making that occurs in environmental and development issues. With its emphasis upon ethical analysis, sustainable development offers educational content which will allow for more prudent participation and
decision making in societal goals and provisioning. This participation represents the grassroots controls of a society based upon the fusion of socialistic and capitalistic goals with a long term time frame (Halal, 1989; Harvat, 1980; Milbrath, 1989).

Technocratic and scientifically oriented rationality characterized the environmental education movement of the 1970's and 1980's (Harman, 1988; Robottom, 1991). This orientation stresses value-free education in the environmental and development area by separating the problems facing science and the problems created by human activity. Both environmental education and global education have stayed within the realm of consensual/equilibrium based reform agendas (Ginsburg, et al, 1989). These educational movements hinted at a different way of knowing and different conceptions of ethical norms and justification. Unfortunately, the environmental and global education movements have become forces inhibiting change for environmental and social justice (Hofrichter, 1993). The movements stopped short of criticizing the U.S. socio-political system, or educational system. This lack of criticism results in the maintenance of the status quo. These reform agendas have typically rejected the conflict and non-compromise characteristic of groups representing radical environmentalism (Manes, 1990; Scarce, 1990).

The concept of a sustainable society changes the orientation of problem identification by viewing environmental problems as
symptoms of human institutions and practices (Berry, W., 1989; Robottom, 1991). Sustainable development, as defined by this study, lead to a way of knowing which conflicts with scientific and technocratic understanding of the earth and its inhabitants, and the present ideology of growth championed by U.S. leaders (Harman, 1988; Korten, 1993). Radical environmentalism represents a part of the conflict that sustainable development requires. Without an analysis of power, subordination, and domination inherent to radical positions we will continue our present focus upon economic growth and accumulation with only minimal concern for distribution and sustainability. Radical environmentalism can help provide the motivation for change by pointing out the relevance of sustainable development and by gaining attention for issues concerning sustainability.

In the U.S., moral education has been thought of as content suitable for instruction by the church or family. Although the course charted by U.S. educational leaders through the past 150 years contains strong religious overtones, the mixing of strong moral or religious content and public schooling has been frowned upon (Tyack and Hansot, 1982). Teaching ethics in public schools has been seen as a violation of the religious freedoms granted by the Constitution. Religion does not influence all citizens of the U.S., however, and family structure in the U.S. appears to be deteriorating (Edelman, 1987). The way around this problem involves the emphasis of the intellectual bases of ethics while stressing the importance of ethical decision making to life in a
democracy (Association for Supervision and Curriculum Development, 1988; Leming, 1993).

The separation of ethics and schooling along with the neutrality of scientific analysis has lead to the "neutral" presentations of all subject matter in the public schools (Davis, 1990; Leming, 1993). Neutrality is, however, a slippery subject. Even if neutrality were possible, it still represents a position. In other words, there is no such thing as value free content or instruction because values and ethical decisions are embedded in the instructional process (Barcena, et al, 1993; Davis, M., 1990; Furlong, Carroll, 1990; Hunt, 1986).

Recently, education has been viewed as a moral activity through which societal concepts of morality are imparted to students (Barcena, et al, 1993; Goodlad, 1990c; Strike and Soltis, 1985). The thousands of decisions which teachers make each day involve moral choices and provide students with indocration to the ethical systems U.S. citizens use to justify their behaviors (Bowles and Gintis, 1976; Fenstermacher, 1990; Goodlad, 1990d; Strike and Soltis, 1985). Educators refer to this as the hidden curriculum in educational writing (Goodlad, 1984), but educators don’t often include the hidden curriculum as part of an ethical system (Kutnick, 1988). In addition, teachers are models for student behavior and problem solving (Association for Supervision and Curriculum Development, 1988; Fenstermacher, 1990).

The position taken by this study is similar to Barcena, et
al, (1993), Berman (1990), and Strike and Soltis (1985) in the belief that education is essentially a moral activity involving social responsibility and obligation. The study also recognizes Caudto’s (1985) and Kutnick’s (1988) point that teachers are typically unprepared to meet the challenge demanded of them when their profession is exposed as a value ladden and moral entity. Both the ethical nature of sustainable development content and the teaching process itself makes the focus of this study problematic. The empirical study of ethical relationships is at best difficult. It seems appropriate to state from the outset that I have strong feelings and beliefs about the need and importance of educating teachers in sustainable development concepts even though many educators choose not to include sustainable development content in their reform agendas (Su, 1992). Although I have these feelings and beliefs, the goals and objectives of this study will be filled as objectively as possible. As Marx stated concerning critical analysis, "...criticism must not be afraid of its own conclusions, nor of conflict with the powers that be." (1843,p.1)

**Limitations Of The Study**

There are several factors limiting the effectiveness of this study:

* Chairpersons and instructors may be prone to answer questions concerning their programs and actions in the classroom differently from what actually occurs. Because of academic freedom and issues concerning evaluation the answers may represent opinions rather than documented facts.

* Investigations into the effectiveness of programs for preservice teachers should include a poll of recent
graduates who are presently teaching. The inclusion of recent graduates into a case study of teacher preparation is beyond the scope of this study.

* Even though definitions were provided, there is much individualistic interpretation concerning the nature of sustainable development. In addition, controversies over development are not resolved as many different agendas come into play when development is discussed. The various definitions and interests concerning development and sustainable development could impact the survey even though careful attention to definitions are provided by the survey.

* The requirements for teacher education varies between states. These differences can influence the content included in teacher preparation curriculum.

* The study implies that strengthening teacher preparation in sustainable development content will improve its delivery to school children. Teacher preparation is certainly not the only factor involved. For instance, much of what happens in U.S. schools is determined by supervisory administrative support and enthusiasm.

Significance Of The Study

The significance of this study comes from two areas. First, the nature of sustainable development content is by itself significant to the future of global systems. The second source of significance comes from the need for teacher preparation to match the changes required of citizens of a sustainable society.

Sustainable Development Content

Sustainable development concepts represent a transformation in the way we understand and relate to the earth and others (Daly and Cobb, 1989; Gardner, Roseland, 1989; Harman, 1988; Rees, 1990). With no ecosystem on earth eluding the impact of human existence, equity decisions involving development and the environment are the most important moral issue facing the future

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of human beings.

Even though human population numbers are important (Catton, 1982), there is even reason to rethink demographic transition theory by including a social justice component (Bradford, 1989; Hartmann, 1987; Ratcliffe, 1983). In this theory the demographic transition includes three stages of declining fertility: (1) HIGH MORTALITY/HIGH FERTILITY - This condition is caused by a lack of resource sharing with health and education provided for only the ruling class. The family represents the unit for survival in the lower classes. (2) FALLING MORTALITY/HIGH FERTILITY - This stage results from the extension of government services to more people even though there is still great inequity with the ruling class adopting old colonial practices. Low mortality and high fertility represents the gap between those with access to resources and those with no access. (3) LOW MORTALITY/LOW FERTILITY - This stage occurs when governments implement social reforms which more equitably distribute income, land, education and health care, while raising the status of women. The family is no longer the primary unit of survival as the government or government supported private institutions provide security, employment, and services more equitably.

The Ottawa conference on strategies for sustainable development suggested themes for development which include social justice and equity in relation to both human needs, social determinism, and ecological maintenance (Jacobs, Gardner, Munro, 1986) As Khosla (1986) suggests:
"The threats to rational management of the resource base come from consumerism of the affluent and... basic requirements of the poor, demonstrating the importance of the equity criterion not simply on ethical or ideological grounds but as a matter of straight planetary survival." (1986, p. 22)

Issues of equity present some of the most vexing and persistent problems facing humans. Americans tend to want to look the other way, or simply blame the victim for somehow being morally inferior (Ryan, W. 1981). Those living in poverty are thought to be lazy, ignorant, and lack the character and initiative that success in an economically oriented world demands (Mellor, 1993) The Western trust in the technological fix - the big project to save some endangered beings or throwing money at a problem won't make equity problems go away. (Korton, 1980)

Unfortunately, inequity around the world is pronounced and universal, has persisted indefinitely, and affects all biophysical, economic, and political systems (Hill, 1989). The fact that inequity is pronounced and universal does not mean that inequity is inevitable, however. Inequity is a product of the choices made by humans. Presently these choices involve an institutionalized, systemitized meritocracy justified by social Darwinism. The meritocracy is an irrational, inconsistent theory of justice, and not appropriate for the fulfillment of human needs. Social Darwinism is also irrational, and is antievolutionary in that it decreases the fulfillment of our obligations to life (Ruffie, 1986; Wynne-Edwards, 1991).

Arizpe (1989) suggests three reasons why global inequities will cause political instability in the future. First, better
education worldwide will make economic polarization more problematic. Second, the media and especially television will depict the disparities in quality of life and add to the frustration and bitterness of those with less. Third, the Catholic and Islamic religions, popular in the South, are opposed by doctrine to the inequities found around the globe. Inequity would fuel religious strife between fundamentalists and splinter religious factions which will exacerbate political power struggles. Similarly, Windsor (1989) suggests that world peace is an impossibility without some system establishing the priority of world wide economic justice.

In regard to education, sustainable development concepts translate to moral education involving equity issues at four levels: 1. among nations, 2. within nations, 3. between present and future generations, and 4. between humans and other species. Decisions at these four levels will shape the future of the earth.

**Equity among nations**

Development literature using dependency analysis describes equity between nations and the geographically oriented disparities that exist between industrialized countries of the North and the non-industrial countries of the South (Frank, 1978). Frank’s static dependence theory has been extended by a dynamic theory of world systems political economy developed by Wallerstein (1984). The world systems theory may be characterized by several features which involve capitalism’s
impact upon global relationships. These relationships build upon the mercantile system of exchange in existence prior to 19th century European industrialization. The characteristics of this system include (Knox, Agnew, 1989):

* A single world market demonstrating the impact of global communications and control techniques, with the attempt to undercut competition and create a global monopoly.

* Territorial divisions between states providing a political state orientation to the global market, eliminating the possibility of one world empire, but making resolution of environmental and development equity issues difficult.

* Three levels of the global political economy: core, periphery, and semi-periphery.

* Cycles of economic growth and recession.

* Resistance to domination by the players in the world system while competing and adapting to achieve the best economic and political position available to them.

* Every geographical region and state having a specific relationship and history relative to the world system.

The characteristics of the world system extend the theories of dependency, imperialism, and the concept of bourgeois evolution into a historical and geographical explanation of a three-tiered state oriented global economic and political system (Knox, Agnew, 1989; Roxborough, 1979)

Stages of growth types of development theories such as Rostow's (1960) The Stages of Economic Growth serves as a justification of the social Darwinism so much a part of neo-colonial relationships. This theory of development has dominated the policy of most Western nations, and perpetuates the growing inequity between nations. The stages of growth model
either suggests that the first priority of development is to expand the savings and investment rate, or suggest a priority of increased efficiency in existing production (Hunt, D., 1989).

Because the core and semi-periphery countries require the resources and markets of the non-industrialized South, the countries of the periphery are kept in a type of neocolonial arrangement by means of economic, military, and political arrangements (Weaver, et al, 1989). Although these geographical relationships are dynamic; current arrangements between nations result in great affluence, resource depletion, and waste production in the North. These arrangements encourage great poverty, resource depletion, and environmental degradation in the South (Brady, 1993; Durning, 1991; MacNeil, 1988; Redclift, 1984). The following three examples illustrate some of the equity problems these institutions perpetuate, create, or encourage.

1. GENERAL AGREEMENT ON TRADE AND TARIFF (GATT) - GATT was established after World War II to avoid the economic conditions found in the pre-war depression. The agreement functioned to lower trade barriers and maintain the core’s industrial advantage by negotiated rules governing the trade between over one hundred member nations (Raghavan, 1990). GATT regulations presently control over 90 per cent of the world’s $3 trillion annual trade. There have been eight rounds of GATT negotiations since 1947. All rounds have been held in an air of secrecy with participation essentially limited to government representatives and individuals.
representing the interests of big business (Shrybman, 1990).

In the most recent round, occurring in Uruguay, the U.S. government sought the inclusion of agricultural trade and services under the terms of GATT. If these proposals were accepted, the Third World would lose control over things like banking, insurance, advertising, and legal methods. These proposals wouldn’t allow a country to restrict the agricultural and raw materials which they import and wouldn’t allow any country to set stricter pesticide and food safety regulations than set by the UN Agency Codex Alimentarium (Ritchie, 1990). This UN agency’s standards are set by members of multinational pesticide and food processing corporations. In addition, the U.S. proposal would impose Western patent law and intellectual property rights law upon the Third World.

The proposal’s impact is important to the four levels of equity as these proposals would: (1) run counter to recent efforts to control the export of hazardous waste, (2) cost the Third World as much as $60 billion in copyright royalties, (3) raise the cost of medicine in Third World countries as much as 5 times (Peng, 1990), (4) remove restrictions of the import of beef by U.S. fast food chains bringing further damage to tropical forests, (5) stimulate export crop production in Third World countries, encouraging large scale plantations, absentee owners, and agribusiness with its use of manufactured pesticides and fertilizers (Ritchie, 1990), and (6) compromise environmental regulations of state governments in the U.S. to meet lower Codex
policies.

Trade agreements like GATT limit national control over economic issues by shifting power to multinational corporations. This shift of control eventually results in a decrease in a citizen's power to legally protect themselves (Hofrichter, 1993).

2. THE ROLE OF MULTINATIONAL CORPORATIONS - Export of pesticides provides an example of the role of multinational corporations in perpetuating global inequity. Although these pesticides are restricted in the U.S. and other core countries, multinational corporations produce and export these banned chemicals to Third World countries (Goodman, 1987). The pesticides represent a major health problem to the people in Third World countries and the consumers in core countries since many of the imported foods contain unacceptable levels of chemicals (Weir, Schapiro, 1986). The impact of the pesticide problem intensifies as Third World countries have doubled their use in the last ten years (Global Tomorrow Coalition, 1990a).

Often the use of these pesticides is dictated by multinational food corporations who require local owners to sign contracts ensuring pesticide use for the sake of increased production and aesthetically pleasing food (Goodman, 1987). The pesticide problem is not a rich vs poor country problem because the health of people in all countries is involved as well as the well being of the world's ecosystems (Global Tomorrow Coalition, 1990a). Worldwide pesticide use demonstrates the gravitation of power toward the multinational corporations with their extensive
capital holdings and lack of specific national accountability (Korten, 1993).

3. **THIRD WORLD DEBT** - Debt has increased as much as ten times in some Third World countries in the past 20 years (Global Tomorrow Coalition 1990a). Much of this money has been used to pay for large projects easily organized and controlled from outside these Third World countries. In addition, military spending represents about 20% of the total debt (Global Tomorrow Coalition, 1990a). Often the Third World loans include structural adjustment clauses which institutionalize change favoring the interests of multinational corporations or the donating nation. The people in most need of financial assistance often don’t receive any help. For example, most of the bilateral aid appropriated by the U.S. never leaves the U.S. (Clark, L.E., 1989). Because of its structural adjustment clauses, this aid results in primary sector export which increases revenue for the elites in Third World nations, but removes local control over land use. This process concludes with environmental degradation. Essentially, the benefits of Third World "aid" go to the elite of the core and periphery, while the costs are picked up by the middle class and poor of the core. The big losers are the poor in Third World countries, however (Hancock, 1989; Lappe, et al, 1987).

The symptoms of these and other examples of institutionalized inequity can be seen in the statistics of affluence and poverty. Industrialized countries of the world
include about 25% of the world’s population, yet consume over 80% of the non-renewable resources (Rees, 1990). These countries also garner over 80% of the world’s income (Sommer, 1989). On the other side of this affluence lies the poverty of people in non-industrialized countries.

Hunger in non-industrialized countries remains the most prominent realization of the statistics of inequality. Every day 35,000 people in the world die of hunger and the average caloric intake in the least industrialized countries of the world is less than the daily requirements to sustain life (Sommer, 1989). The poor are caught in a four way trap which perpetuates and increases their poverty (Durning, 1990). First, the poor not only have little income, they own very little. They don’t own land, homes, or implements with which they might work to increase their income. Second, the poor are often physically weak because of poor health and poor nutrition. Third, population growth among the poor drives wages down as poor families grow in size for security and survival reasons. Fourth, the trap of poverty also finds the poor powerless. Poor people often lack education, can’t read, and are disdained or ignored by legal systems.

The geographic inequity in accumulation of wealth expresses itself locally as rural people are removed from access to the food and profit capabilities of the land (Bodley, 1985; Paddock, et al, 1986). Barbier (1989) suggests that the impact of rural poverty, unemployment, and population growth have grave environmental consequences which result in cross-sectional or
horizontal economic costs. He also suggests that development efforts must take into account economic, biological, and social factors, but most ministries of development aren't organized to handle a horizontal, holistic agenda. Figure 1 illustrates Barbier's conception of the downward spiral of poverty and the impact of inequity on the environment.

A major portion of Barbier's (1989) model of rural poverty was not appropriately considered at the 1992 United Nations Conference on the Environment and Development in Rio. Population growth in non-industrial nations was not emphasized at this conference because of tensions between Northern and Southern nations (Falkenmark, 1993). The Southern nations don't want leaders from the North telling them how to manage their growing population. Similarly, the scarcity of potable water represents a major component of Barbier's model. The participants of the conference in Rio failed to adequately address how sustainable development might occur in the face of escalating shortages of water (Falkenmark, 1993).

Priorities are given in industrialized societies to increasingly higher physiological and psychological needs (Argyle, 1987; Easterling, 1973; Redclift, 1984). The increasing needs and consumption patterns often occur simply from the application of marketing techniques; but result in lost control over production, increasing marginalization, and poverty in the South (Redclift, 1984).
Population Growth
Rural Unemployment
Poverty
Loss of Traditional Sustainability Practices

Low productivity
low incomes

Cultivation of steep slopes, inappropriate cropping patterns

Lack of investment in conservation measures

Loss of agricultural output in uplands

Soil fertility loss/erosion

Irregular flow of irrigation

River/reservoir sedimentation

Losses to navigation hydropower

Loss of agricultural output, fishing in lowlands and coastal regions

Drought/flood cycles

Water supply and potability

Disaster magnification

Morbidity, Mortality, Standard of Living

Figure 1. Impact of population growth, rural unemployment, poverty, and Loss of traditional sustainability practices on ecosystems and quality of life (Barbier, 1989, p. 450).
The other side of this downward cycle of poverty is the culture of consumption prevalent in industrialized nations (Bodley, 1985). The U.N. reports concerning sustainable development of the 1980's invariably stressed the need for continued economic growth in both industrialized and non-industrialized countries (Brundtland, 1990). The writers of Our Common Future suggest that economic growth rates of 3-4% are necessary (WCED, 1987). This report calls for the importance of a reorientation of economic growth. The report fails to ask the question, how much consumption is needed? U.S. consumerism has lead to the attempt to fill psychological and spiritual needs with material things (Durning, 1991; Fromm, 1976; Gorz, 1980; Wachtel, 1983). The relationship between happiness and income is very small once basic biological needs are fulfilled (Wachtel, 1983). As Durning suggests, "The ability of the earth to support billions of human beings depends on whether we continue to equate consumption with fulfillment." (1990, p. 157) In effect, we have become prisoners of our assumptions concerning progress and economic growth. These flawed assumptions result in Western overdevelopment and the imposition of flawed solutions in both industrialized and non-industrialized nations (Brady, 1993).

The U.S. record on international agreements reflects the interests of corporate America concerning human rights, environmental and development issues. As Brady (1993) suggests, "How can we talk of democratizing Africa when we have yet to talk about democratizing the Bretton Woods institutions? When we have yet to address not only GATT, but the more troublesome and ingrown functioning of the G-7." (p. 24)
Similarly, the U.S. has failed to ratify the International Covenant on Civil and Political Rights, or the International Covenant on Economic and Social Rights (Tarrow, 1990). The U.S. has blocked attempts to speed up bans on the production to CFC's which cause ozone depletion (Guy, 1991). The U.S. has also failed to fully endorse a Law of the Sea Treaty which would protect oceans from dumping and exploitive sea bed mining (GTC, 1990a). The U.S. has failed to sign an international agreement to limit sulfur and nitrogen oxide emissions which cause acid deposition (GTC, 1990a). These failures signify the influence of corporate leaders upon the choices made by leaders in the U.S. government.

In summary, the signs of global inequity are found in the hunger, human population growth, environmental degradation, and poverty found in non-industrialized countries; and the culture of consumption and poverty of affluence found in the industrialized countries. These signs are symptoms of the deeply embedded equity problems which face the nations of the globe (Brady, 1993). Equity problems which exist between nations are longstanding and maintained by agreements and institutions between industrialized and non-industrialized countries (Brown, J.W. 1990; Gladwin, 1987; Hamilton, 1990). As Durning (1991) suggest,

"Unless nations address the twin problems of growing Third World poverty and increasing international inequity, global economic and environmental decline are certain to accelerate." (p. 177).
Equity within nations

All nations require development if they are to move toward becoming a sustainable society. Equity issues vary within each nation depending upon the specific culture and the circumstances of that nation's industrial development and ideological orientation. This section will begin with the significance of equity to sustainable development within nations, being followed by equity issues concerning the U.S.

Inequity within nations is an issue in all countries, and can be measured in many ways. The most common method of measurement is economic disparity. Using economic comparisons of the poorest 20% and the richest 20% of the most populated countries of the world suggests that the most inequitable distribution of wealth occurs in Brazil, Mexico, Turkey, France, and the United States (Durning, 1990). This ratio of inequity is rising in the U.S. as we are going through a cycle of increasing disparity in the distribution of wealth (Phillips, 1990). Table 1 illustrates the equity ratio for several countries. This ratio reflects the distribution of wealth occurring in these countries by expressing the economic share of the richest to poorest people in each country (Durning, 1990).

These statistics should be reviewed critically as they may actually avoid issues of inequity and may be inaccurate and incomplete (Hill, 1989). GNP measures the flow of wealth through the economy and only partially deals with meeting human needs (C. Hall, 1990). It says nothing about distribution of happiness,
well being, or wealth. It also fails to measure the work done by women and and doesn't adequately express the flow of the economy

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Poorest 20%</th>
<th>Richest 20%</th>
<th>Equity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1984</td>
<td>12</td>
<td>31</td>
<td>3</td>
</tr>
<tr>
<td>Soviet Union</td>
<td>1980</td>
<td>9</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>Japan</td>
<td>1979</td>
<td>9</td>
<td>37</td>
<td>4</td>
</tr>
<tr>
<td>West Germany</td>
<td>1978</td>
<td>8</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>United States</td>
<td>1986</td>
<td>4</td>
<td>46</td>
<td>12</td>
</tr>
<tr>
<td>France</td>
<td>1975</td>
<td>4</td>
<td>50</td>
<td>13</td>
</tr>
<tr>
<td>Turkey</td>
<td>1973</td>
<td>4</td>
<td>57</td>
<td>16</td>
</tr>
<tr>
<td>Mexico</td>
<td>1977</td>
<td>3</td>
<td>54</td>
<td>18</td>
</tr>
<tr>
<td>Brazil</td>
<td>1982</td>
<td>2</td>
<td>64</td>
<td>28</td>
</tr>
<tr>
<td>World</td>
<td>1985</td>
<td>4</td>
<td>58</td>
<td>15</td>
</tr>
</tbody>
</table>

These figures are approximations taken from the most recent available statistics (Durning, 1990).

Table 1. Income distribution in representative countries

through rural areas (Hartmann, 1987; Hill, 1989). As Harrington (1984) states,

"...the control of statistics is one of the critical functions of power in a democracy. The numbers define the limits of the possible; they confer the awesome mathematical legitimacy of 'fact' upon some parts of reality and deny it to others. (p. 71)

It should be pointed out that statistics describing the disparities in distribution of U.S. production are not typical of government or media presentations. Government and media statistics associate economic growth in GNP with wellbeing. Accumulation, not distribution, is stressed with inequity explained away by conservatives as being inevitable.
Even though comparing the top and bottom 20% helps to expose problems in equity of distribution, the ratio fails to expose the even wider inequities existing between people. These inequities include depreciation of natural resources because the use of GNP discounts the future. The discount rate is essentially an economic phenomenon through which future generations are not considered (Hall, 1990; Spash, 1993). Control of land, political power, and social prestige are ignored by the use of GNP and other production criteria (Roemer, 1989). The use of GNP also fails to reflect the inequity between countries regarding the costs and benefits of production. This results from the fact that costs don't always reflect scarcity or environmental costs. For instance, the costs of mining diminishing mineral reserves, or the cleanup of an oil spill are typically paid by local residents and ecosystems while the price of the product remains unchanged (Hall, C., 1990).

Other expressions of this inequity involve access to resources and exposure to degraded environmental conditions. The poor are often exposed to hazardous conditions as the location of 3/4 of the hazardous waste landfills in the U.S. southeast illustrates (Bullard, 1993; Durning, 1990). Researchers found in a 1991 study of civil court cases great disparities in the penalties levied between white and black communities. The penalties for breaking the rules in white communities were 500 per cent higher than the penalties for the same type of offenses in black communities (National Law Journal, 1992). These
examples of inequity point out the need for a new means of economic accounting which would treat economic provisioning as a subset of biophysical systems (Daly, 1981; Holden, 1990). A system of this type would extend GNP measurements to include distributional equity in an index stressing sustainable welfare with adjustment for costs of pollution, loss of arable land, and loss of habitat. Military spending would not be added to the accounting of wealth (Daly, Cobb, 1989).

The problem with the Russian and Eastern European economies may also be traced to inequity and not the result of the failure of communism (Alexseev, 1991; Horvat, 1982). Alexseev (1991) suggests the lack of equity between the ruling and lower classes brought socio-economic disaster in Russia and not the ideology of authoritarian communism which U.S. leaders would have us believe. The exchanges between Russian and U.S. citizens demonstrate more similarities than differences between both the people and social systems of the two countries. In both systems inequity is perpetuated by political systems most concerned with the maintenance of the political, economic and manipulative power of elites (Alexseev, 1991; Edsall, 1984; Harrington, 1989; Horvat, 1982).

Look no further than U.S. cities to see the same inequities, socio-economic disaster, and environmental degradation found in Russia. Although the percentage breakdown of income in the U.S. between labor and capital has not changed in the past 30 years, the middle and lower classes are losing ground as more women must
work to keep family unit incomes constant (Tilly, 1990). In addition, the change from an industrial to a service economy has enlarged the gap between high and low paid workers which often expresses itself through race and gender inequities (Tilly, 1990). The off shoot from the economic insecurities faced by many in the U.S. is the decrease in the capacity for compassion for others (Harrington, 1984). A sense of survivalism has triggered individualistic and egoistic responses (Mellor, 1993).

Comparisons between countries often present problems, but Barkan’s (1991) comparison of Sweden and U.S. quality of life and economic distribution warrants mention. Barkan suggests that the inequitable distribution of production's benefits existing in the U.S. plays a role in many social problems facing the U.S. The Swede’s rate of families living in poverty is 5 per cent versus 17 per cent in the U.S. The Swedes also spend 30 per cent of their GNP on social services versus 14 per cent in the U.S. The balancing of income and social benefits in Sweden influences the following:

* A 90 per cent lower crime rate than the U.S.
* No difference between the overall health of Swedish children in the bottom and top 10 per cent income brackets
* The lowest child mortality in the world
* The second highest life expectancy in the world
* One of the highest living standards in the world
* One of the highest literacy rates and number of students continuing their education in the world
* Unemployment at 2 per cent
A lower suicide rate for youth in Sweden than in the United States.

In addition, Sweden meets the United Nation's target of 0.7 per cent of GNP in unrestricted non-military aid to poor countries. The U. S. gives 0.15 per cent of its GNP (Singer, 1993). This is not to suggest that problems don't exist in Sweden, but the comparison does justify reflection.

Discussion of the inequities existing within nations must stress the disparities between men and women. Women are universally the poorest of the poor all over the world as they are paid less and work more than men (Charlton, 1984; Hartmann, 1987; Jeffery, et al, 1989). As Charlton (1984) suggests,

"A successful development policy must be built on an understanding of what has happened to women in the past, how their lives are determined by both their productive and their reproductive roles, and how politics and bureaucracy from the local to the international levels inhibit the equitable participation of women in development decision making." (p. 3)

Inequity between men and women exists in education, income generation, ability to receive credit, control of family planning, representation at all levels of governance, representation in development agency bureaucracy, access to health care, and both as a subject of and creator of research on development and environmental issues (Charlton, 1984; Hartmann, 1987; Lappe, et al, 1987; United Nations Children's Fund, 1989). Warren, K. (1993) makes a strong argument for combining environmental and feminism issues on the basis of the historical, theoretical, and pragmatic domination of nature and women.

The U.S. desperately requires development because of two types of poverty resulting from the overemphasis upon individual freedom in the marketplace. The first type involves the poverty trap facing the poor all over the world (Durning, 1990). Lack of access, empowerment, physical strength, with excessive population growth characterize this type of poverty. The second type of poverty found in the U.S. results in the poverty of affluence. This poverty reflects the poverty of the spirit as material well being can't replace the psychological needs required for happiness and fulfillment (Fromm, 1976; Max-Neef, et al, 1990; Wachtel, 1983).

Equity between present and future generations

The environmental movement of the 1970's brought a great deal of attention to the issue of equity between generations. In the 1980's the concept of sustainability grew from this movement. Sustainability is defined by this study as "the persistence over an apparently indefinite future" (Robinson, et al, 1990, p. 39).
The WCED report *Our Common future* defined sustainable development as the process of change designed to meet today's needs without compromising the ability of future generations to meet their needs (1987, p. 9). Both definitions stress the importance of meeting the needs of future generations. Unfortunately, little consideration is given to those not yet born for many reasons:

First, people living at the poverty level concern themselves with meeting their own requirements for survival and security. Without a more equitable distribution of land access, income, and political power, the poor of the world will have no basis to consider the fate of future generations.

Second, the present conception of rights doesn't allow for the consideration of future generations. Unconceived living entities have no legal rights within the Western conception of rights. Many rights which presently exist between right holders are based upon an exchange agreement extending from properties rules. Obviously no exchange can exist between present and unborn generations. Because of the primacy of property rights in most industrial societies' conception of rights, the present relationship between living and future generations involves privilege (Bromley, 1991). Present generations are generally acting in regard to the environment in such a way that they have rights without correletive duty. This relationship defines privilege. The conception of rights of future generations are only possible through the imposition of duties on the present
generation relative to the rights of future generations. This imposition might involve mandatory abatement, compensation for future damages, or annuity to cover future costs (Bromley, 1991; Spash, 1993).

The ethic of care and relationship needed for consideration of future generations, and so often found as a part of women's moral development, lacks impact in the male dominated ethic of rights (Gilligan, 1982; Noddings, 1984; Plumwood, 1993). In addition, the present egocentric and anthropocentric values which dominate U.S. and international decision making concerning development and the environment fail to account for the interconnections between the maintenance of ecosystem equilibrium and the well being of future generations (Merchant, 1990; Plumwood, 1993; Postel, Flavin, 1991).

Third, government policies presently give incentives to resource depletion and environmentally devastating actions greatly impacting the ability of future generations to meet their needs. The government subsidy of the automobile and oil industries through the building of roads and bridges exemplifies this type of short range thinking (Fairlie, 1993; Whitelegg, 1993). Change to fuel efficient, non-polluting mass transit would be costly, but would be of great benefit to future generations. Similarly, government subsidy and policy concerning the pesticide industry greatly endangers all future life (Postel, Flavin, 1991).
Fourth, the growth of military budgets and military technology with the creation of devastating nuclear, chemical, and biological weapons greatly jeopardizes future generations (Finger, 1991). Defense spending represents a tragic waste of resources which could be used to benefit both present and future generations of human beings (Albelda, et al, 1988; GTC, 1990a).

Fifth, government incentives to develop soft energy paths would lead to great non-renewable energy savings, and greater overall resource efficiency (Lovins, 1971). However, soft energy paths could also involve great changes in societal structure and power relations. As a result, soft energy paths, favoring future generations, are generally neglected by present political leadership in all countries.

Sixth, little consideration is given to future generations because of the belief in human technological capabilities. This arrogant viewpoint suggests that humans are the ultimate resource capable of solving all problems (Ehrenfeld, 1981; Simon, J., 1981). As a result of this arrogant attitude, there is no need to consider future generations, because they will produce the technology needed to solve their problems.

Seventh, the discount rate results in a devaluation of the future through the dramatic undervaluing of environmental functions and services (Goodland, Ledec, 1987). The discount rate is used by neoclassical economists to estimate the time value of money (Hall, C., 1990). The time preference concept the discount rate represents creates an accounting system which
stimulates the flow of resources through present generations of human beings (Spash, 1993).

Eighth, advertising controls much of the perceived needs in industrialized countries (Deets, 1993; Paranti, 1986). Advertising is meant to stimulate production by maintaining a consumptive life style and stressing the importance of material possessions as social prestige. Because the perception of needs beyond basic survival requirements are socially controlled, the advertising bombarding people in core countries serves to stimulate consumption, increase resource use and pollution, and dramatically affect the possibility of future generations fulfilling their needs (Arglye, 1987; Durning, 1991; Wachtel, 1983).

With present resource use and consumption patterns, industrialized societies can’t sustain either their environmental or socio/political characteristics (Brown, J.W., 1990; WCED, 1987). The concept of sustainability need not bring with it the gloom and doom projections of the early environmental movement, however (Lovins, 1971; Paehlke, 1989). But, sustainability does require change concerning belief in and the value of unrestricted economic growth (Kroten, 1993). At the heart of these changes rests the notion of justice between generations, and a morality which includes future generations in its conceptualization of fairness (Hendry, 1990; Spash, 1993). Using the present conceptualization of fairness found in the West, future generations must be deemed unmeritorious of a high quality of
life. The subordination of women and nature found in our present patriarchal mechanistic society is simply extended to future generations (Plumwood, 1993).

**Equity between humans and other species**

The issue of equity between living entities provides two major ethical directions justifying human action which would provide a more equitable treatment of other species and the land. The first involves the extension of moral standing beyond human beings to other species. This type of thinking would even extend legal rights to natural objects (Stone, C., 1974).

The extension of moral standing beyond human beings involves the perceptions of fairness and rights characteristic of meritocratic, hierarchial ethical justification and suggests an epistemology invoking Cartesian dichotomies and Enlightenment thought (Dryzek, 1990). Most people endorsing the extension of rights to other species stress sentience as the essential criteria for moral standing (Callicott, 1986). This position follows the utilitarian tradition of the overall maximization of good and minimization of evil. In this scheme, pain is evil while pleasure and avoidance of pain is good. Therefore, animals which feel pain should be granted moral and legal standing because the overall good would be increased.

The extension of moral standing to another living species and the land may not be as radical as it first may seem. Roderick Nash (1989) suggests that animal rights is the next logical stage in the evolution of ethics. He suggests that
environmentalism represents a historical extension of American struggles for freedom and liberty.

"...the contemporary environmental movement can be understood not so much as a revolt against traditional American ideals as an extension and new application of them. The alleged subversiveness of environmental ethics should be tempered with the recognition that its goal is the implementation of liberal values as old as the republic." (1989, p. 12).

The second ethical direction which would allow for equity between living entities, involves ethical holism in which the good of the whole ecological community serves as the guiding principle. The summum bonum in this system is the equilibrium, interrelationships, and beauty of the earth, not the extension of atomistic rights to individual species (Callicott, 1986). Although conflicts arise in species competing for their niche, the overriding principle used to judge an action involves the assessment of that action upon the whole biotic community.

Ecocentric ethics or ethical holism finds its foundation in a holistic epistemology following basic assumptions (Merchant, 1990; Taylor, 1986):

1. everything is connected,
2. the whole exceeds the sum of the parts,
3. the natural world is an organic system,
4. meaning depends upon context,
5. process has primacy over parts,
6. humans and nature are one,
7. individual organisms are teleological centers of life,
8. humans are not superior to other forms of life.

The combination of ecocentric ethics and a holistic cosmology represents a shift from the mechanistic and fragmented paradigm to an ecological paradigm which is consistent with the concept of sustainable development (Merchant, 1989).
The basis for an ecological paradigm was suggested by Aldo Leopold as he described a land ethic.

"All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in the community, but his ethics prompt him also to co-operate (perhaps in order that there may be a place to compete for). The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land." (1966, p. 239)

There has been much debate between the animal rights (atomistic) and ecocentric (holistic) conception of equity between species. Without the recognition of other species’s need for habitat, human beings are making choices which will destroy the habitat required by other species. This loss of habitat and corresponding loss of genetic diversity only serves to weaken human life potential. The debate between biocentric and ecocentric ethical positions has served to clarify the ethical relationships which are required between humans, other species, and the environment. Both of these positions are founded upon the obligations humans have to preserve life. Although conflicts may occur between individual and holistic conceptions of ethics as related to other species and the environment, the obligations to diversity, the preservation of life, the protection of the environment, and the fulfillment of human needs are complementary. Sustainable development is only possible through the fulfillment of our obligations to life.

**Summary**

Equity between nations, within nations, between generations, and between species involve the conceptualization of ethics in
global education. The traditional morality often found in Western societies suggests that there is a natural hierarchy of beings (VanDeVeer and Pierce, 1986). The result of this natural law/Judeo-Christian conception of morality is a system of justice which rewards the meritorious (Ryan, W., 1981; White, L., 1967).

The division of production’s shares is at the heart of this issue with merit used in the U.S. to justify the share and standing one receives. The issues of shares grows in importance as the U.S. economy moves in the direction of meritocracy (Phillips, 1990). It becomes more and more obvious that our present system of economic management is based upon accumulation and only minimally concerned with the distribution of the benefits and burdens of production (Mellor, 1993). Equity issues concerning the environment and development call into question the notion of meritocracy and places ethical considerations on center stage. North/South, man/woman, white/black, rich/poor, and Christian-Islamic tensions exemplify the intricate and deeply ethical questions raised by equity issues.

**Teacher Preparation For The 21st Century**

The second source significance of this study comes from the need for teacher preparation to match the changes required of schools dealing with changing societal needs. The changes in societal needs directly relate to the significance of equity issues and transformation toward a sustainable society. The
study recognizes the importance of coupling what is required of school teachers and preservice training teachers receive.

Infusion of sustainable development content into the school curriculum will not take place unless teachers are prepared in sustainable development relationships and issues (Gigliotti, 1990; VanMatre, 1990). The nature of teaching and the goals of education also need reconsideration. The projections which indicate that 200,000 new teachers will be required each year within the next decade adds importance to the reconsideration of the teacher education curriculum (Association of American Colleges, 1989).

Both teaching in the public schools and the efforts to educate teachers are part of a political process involving power and control (Apple and Jungck, 1990; Barnett, 1993; Goldsworthy, 1988; Horvat, 1982). This political struggle reveals the tension between educating citizens in democratic principles while maintaining the inegalitarian realities of a class society (Nasaw, 1979). Once again, a moral perspective becomes important as teaching is essentially a moral act (Goodlad, 1990d). Sustainable development content becomes a part of the morally orientated curriculum extending from the recognition of teaching as a morally oriented activity.

Education in sustainable development content requires a major reform in educational goals and fostering a revision of citizenship requirements for the 21st century. As the U.S. changes from an industrialized to a service economy,
relationships change both within the U.S. and between the U.S. and the global economy. Ecosystem and human rights issues abound because of these changing relationships. Sustainable development content would force teachers to recognize the ethical implications of these changing relationships and the moral implications of their profession.

This study's second source of significance also stems from the paucity of information available regarding sustainable development content in American institutions. Because environmental education and global education must fight for their disciplinary lives, their proponents often don't recognize the similarity of their messages. The fact that educators representing these disciplines come to the concept of sustainable development from different disciplinary backgrounds leads to a lack of communication.

The most recent wave of reform demanding a conservative agenda of efficiency and accountability has affected the reality of teaching by moving the control over what happens in the classroom away from the student and teacher (Apple, 1993; Apple and Jungck, 1990; Barnett, 1993). Through text book control, competency exams, and teacher proof curricular materials the control of education shifts toward those people at the top of the social hierarchy and those in power (Apple, 1993; Tanner, 1989). This agenda often lacks the perspective of global realities, recognition that the American economic system is in trouble, an understanding of appropriate technology, and the recognition of
the important distinction between being and having. In other words, this control agenda fails to cover controversial issues in any depth by focussing upon symptoms rather than causes of problems in both education and society (Tanner, 1989). These issues gain in significance as studies reveal that many teachers depend upon a textbook for as much as 95% of their presentation (Hamm and Adams, 1988).

As James Peck, the editor of *The Chomsky Reader*, states,

"In every society groups will emerge to disguise the obvious, to obfuscate the workings of power, to spin a web of mystification through transcendent goals and purposes, totally benign, that allegedly guide national policy. Quite understandable such people will not see themselves as a caste of propagandists or as indoctrinators. They prefer to think of themselves as educators, religious leaders, often as fervent apostles of truths which place them in conflict with the state. Yet to see just what the shared consensus is in a society, Chomsky suggests, look at what the 'influential' critics do not challenge. There the extent to which they are submissive and obedient to the state can be expected to reveal itself (Chomsky, 1987, p. xi).

Teachers need education regarding sustainable development content and the possibilities for curriculum and program development in this area. Understanding sustainable development content is essential to educational reform which would match educational goals with the requirements of not just American citizenship, but also global citizenship for the next century.
Chapter Two

Conceptual Background Of The Study

One of the biggest problems facing any new field of inquiry involves forming a consensus of definition and conceptualization (Kobus, 1983). This definitional problem still plagues both environmental education and global education although this problem seems to be moving in the direction of resolution. Sustainable development and the concept of a sustainable society certainly doesn’t lack for advocates, but the definition of development’s meaning and how that development might be sustained creates a great deal of controversy. This section covers the historical background and definitions of academic areas through which sustainable development has evolved. This historical overview is intended to lend perspective to the direction sustainable development should take, or as Goodlad suggests, allow "history to inform the present." (1990b, p. 5) In addition to the historical background, I define how the study will use the terms "development," "sustainable society," and "sustainable development" in this section.

History of Sustainable Development - Related Areas

Historical perspective allows the view of sustainable development as an extension of environmental education or global education which emphasizes political and ethical issues involving the environment. Environmental education was preceded by nature study, conservation education, and outdoor education. Global
education is associated with multicultural education, human rights education, and peace education.

**Nature study**

Liberty Hyde Bailey was one of the prominent leaders in the nature study movement popular during the late 1800’s and the early 1900’s (Disinger, 1983). Bailey, a teacher, author, naturalist, scientist, and philosopher wrote extensively on the value of nature study (Dorf, 1956).

"Nature-study will endure, because it is natural and of universal application. Methods will change and will all fall into disrepute; its name will be dropped from courses of study; here and there it will be incased in the school-master’s ‘method’ and its life will be smothered; now and then it will be over-exploited; with some persons it will be a fad: but its spirit will live." (Bailey, 1903, p. 6).

Many of L.H. Bailey’s philosophies parallel today’s ecocentric writings. Although the nature study movement was overwhelmed by the anthropocentric, industrial oriented attitudes of the day; many of the statements concerning nature and the rights of animals could pass for statements from current environmental activists. This quote from Ernest Thompson Seton’s Redruff written in 1898 illustrates this point:

"Have wild things no moral or legal rights? What right has man to inflict such long and fearful agony on a fellow creature, simply because that creature does not speak his language?" (Seton, 1898, p. 357)

Nature study education as conceived by L.H. Bailey and others would have involved the restructuring of U.S. schools (Disinger, 1983). It’s concepts simply did not fit with the industrial model adopted by most schools during this period (Tyack, Hansot, 1982).
Conservation education

The nature study movement was followed by conservation education which grew from the conservation movement of the early 1900's particularly stressing wise use in the Gifford Pinchot tradition (Disinger, 1983; Hays, 1959). These educational efforts were generally the outgrowth of federal and state governmental agency's attempts to educate the public to the governments' utilitarian philosophy. Conservation content appeared in science and social studies textbooks, but received little formal backing as an academic discipline (Disinger, 1983).

Outdoor education

The outdoor education movement began in the 1920's in Michigan with what L.B. Sharp called camping education. It was not until the 1940's, however, that the outdoor education movement gained popularity with the opening of many resident outdoor schools. Julian Smith, considered the father of outdoor education, viewed camping education as a laboratory for expanding the role of the school to educate the "whole" child in the philosophical tradition of John Dewey (Smith, J., 1955). Outdoor education originally consisted of the teaching traditional core subjects in the outdoors and school camping.

Presently, these two divisions of outdoor education could be described as environmental education and adventure education (Disinger, 1983). Educators currently define outdoor education as experiential learning which takes place primarily through
exposure to the out-of-doors in which the relationships between people and natural resources is stressed (Priest, 1986).

Environmental education

The first formal use of the term environmental education took place around 1969 with the term gaining acceptance and recognition as an educational entity in the 1970's (Disinger, 1983). The academic literature during this decade suggested many definitions without consensus. Often the definitions and explanatory statements were so general that they allowed for little focus and great confusion (Van Matre, 1990). Typical of this general type of definition is exemplified by defining environmental education as education in, about, and for the environment (Disinger, 1983).

Van Matre (1990) suggests that environmental education involves three sets of interests: 1. study of the structure and function of ecological systems, 2. the study of how each individual relates to ecological systems, and 3. the study of changes that individuals and society can make to lighten human impact upon ecological systems. Van Matre (1990) also stresses the different agenda of environmental education and outdoor education and the danger of combining the two. It is important to note that environmental education has not replaced nature study, conservation education, or outdoor education (Hanselman, 1986). These predecessors of environmental education still exist, but have different and often overlapping educational goals and curricular structure. The recognition of these different
agendas, especially the agenda of conservation education, are critical to the disciplinary success of environmental education (Mayer, 1990; Siegenthaler, 1987).

The environmental education of teachers has been a recurring theme of many international conferences concerning the environment (Connect, 1990). The United Nations suggests that teachers need competencies in environmental education content at four levels: 1. ecological foundations, 2. conceptual awareness, 3. investigation and evaluation, and 4. environmental action skills. This theme follows the objectives put forward by Stapp (1969, 1970) which stressed knowledge, awareness, and motivation with the caution that skills and knowledge don’t necessarily result in change toward more ecologically responsible behaviors.

Global Education

The issues involved with global education have been with U.S. educators for many years. The primary concern from the 1860’s to 1921 was how to "Americanize" the millions of immigrants who entered the U.S. from all over the globe (Fain, 1988). Many of the immigrants sought the opportunities they thought were available in the U.S., but wished to retain their ethnic identity. As a result, the melting pot image was probably a myth. U.S. schools were viewed as a way to "Americanize" the children of immigrants, and were used to inculcate the values and moral systems required of U.S. citizenship (Fain, 1988; Nasaw, 1979; Tyack, Hansot, 1982).
The emphasis upon immigrant assimilation and the isolationism found in U.S. international politics in the early 20th century lead to cultural ignorance and intolerance in spite of the U.S. being comprised of so many ethnic groups (Fain, 1988). The educational goal of the educational system was to build loyalty to U.S. social institutions and values (Lamy, 1983). This goal remains today, but was probably taken to extreme because of the stress on the "Americanizing" process taking place prior to the stiffening of immigration laws in 1921.

After World War II the U.S. was thrust into a position of economic and political superiority and global education was more oriented toward international education, where college could train individuals to represent U.S. interests internationally (Otero, 1983). Schools made little effort to incorporate a global, multi-cultural perspective as U.S. hegemonic thinking provided a justification for requiring other cultures to adjust to the U.S. way of life and the American Dream.

During the 1970's many events lead to the need for a global perspective in U.S. schools. These events included: the oil crisis, the U.S. withdrawal from the Olympic Games because of the Soviet invasion of Afganistan, Japanese economic growth and superiority in production techniques and research and development projects (Magaziner, Patinkin, 1989), the growth of international media coverage (Czitrom, 1982), and the growth of environmental consciousness with its emphasis on global ecological systems. The images of the 1970's included (Tucker, Cistone, 1991): The
Population Bomb (Ehrlich, 1968), "spaceship earth" (Fuller, 1970), "think globally act locally (Ward, Dubos, 1972), "the global village" (McLuhan, 1964), and Silent Spring (Carson, 1962). Added to these images was the dwindling U.S. hegemony in international affairs (Agnew, 1987). These images helped U.S. citizens become more globally focused and increased the interest in both global education and environmental education.

The fierce concern for loyalty to the American dream remained, but the political and economic circumstances of the U.S. both internationally and domestically had changed (White, J.K., 1988). The need to enter the global village as a partner and not as the coercive boss had arrived. This perception of global partnership is resisted, however, as the U.S. political, economic, and educational leaders cling to the vision of a new world order in which the U.S. calls the shots (Ritchie, 1990; Weissman, 1991; White, J.K., 1988).

Educators typically associate global education with liberal curricular movements involving issues of equity and pluralism and with multicultural, peace, and human rights education. Global education could be defined in a conservative fashion, however, as a state centered world view which emphasizes American interests (Lamy, 1983). Becker (1988) provides a general definition of global education which demonstrates the holistic and relational nature of its content.

"Global education views the Earth and its inhabitants as interacting and interdependent. It recognizes that nations and peoples are closely linked in a variety of ways, including through religion, science, ethnic heritage, trade
communication systems, and transnational organizations... It is concerned with global dynamics - the relationships between individuals, humankind, and the planet, and how these dynamics are changing our lives." (1988, p. 4).

This definition demonstrates the anthropocentric language often used in defining global education, and typifies the definitions provided by educators concerned with global issues.

Global education typically includes five curricular themes fostering a global centered orientation. These five themes are drawn from the writings of Boulding (1985), Goodlad (1986), Kniep (1986), and the Study Commission of Global Education (1987).

**Values**
The study of values provides background into the commonality and diversity in human values and forms the bases of global education. This study of values entails an investigation into human nature and the distinction between wants and needs within a cultural context (Barbour, 1980, Max-Neef, et al, 1989).

**History**
The study of history provides students with a conception of the changes that have taken place over time in ecologies and economies. Global education stresses the perspective of history from more than just the spread of Western civilization and includes the perspective of other peoples (Stavrianos, 1981; Wolf, 1982).

**Systems**
The study of systems gives students a conception of the interdependence of biophysical, economic, political, and technological systems. Global education shows students how an action in one part of a system produces consequences for the parts of another as the whole seeks to find balance or equilibrium (Forrester, 1971; Hall and Day, 1990; Lovelock, 1979; Odum, H. 1971).

**Issues**
Global education also includes the study of global issues which express themselves through international conflicts involving multilateral problem solving. Global issues generally fall into peace, environmental, development, and human rights education (Kniep, 1986).
Policy

Public policy provides the fifth component of global education's curricular structure. Global Education provides students with a knowledge of action strategies which will allow them to take part in the policy making process. The conception of global education is strongly related to development and the assumptions made by development efforts. Often the theories behind global relationships remain unquestioned. Global education attempts to uncover these relationships and make sense of the connection between theory and practice.

Development theory

Development literature typically debates the concepts of development and underdevelopment by explaining the impact of capitalism on nations or social groups. Founded in the social sciences, these theories concentrate on geographic and economic factors in their analysis. Although the catagorization of development theories will lead to oversimplification, three major divisions of theories have been represented over the years.

Linear Notions of Development

The first stresses linear notions of time in societal development and emphasizes economic growth and recognition of national tastes as the unit of inquiry, as opposed to the people of a region. This set of theories covers a diverse range of political orientation from Marx (1919) in the mid 19th century to Rostow (1960) in the 20th century, but emphasize the stages of development required for societal development (Agnew and Moudood, 1985). These theories are similar in their temporal orientation as societies progress through stages from primitive to advanced forms of organization.
* Spatial Orientations

The second group of theories also take an economic emphasis, but analyze development from a spatial orientation. Dependence theory of Frank (1978), for instance, stresses the relationship of North and South, core and periphery, in a framework of world politics based upon domination and neo-colonialism. Theories of economic imperialism proposed by Lenin and Trotsky in the first half of the 20th century also fit in this category. Wallerstein’s World Systems theory proposed in the 1970’s uses historical analysis to propose a world system as the primary unit of organization.

* Development Based on Ecological Relationships

The third group of development theories evolved from the environmental movement beginning in the 1970’s. This group of theories stress ecological relationships involving both time and space, but is typically weaker than the first two categories in economic analysis of development. The environmental impact of production and consumption are stressed with less emphasis upon the economic and social development. Appropriate technology and the importance of the individual are stressed while materialism is de-emphasized. As Schumacher suggests, "Development does not start with goods; it starts with people and their education, organization, and discipline." (1973, p. 168) Changes in social production and reproduction are seen as part of an ecological revolution through which humans adapt to the changing status of their surroundings (Merchant, 1989; Wilkinson, 1973). Development in this group of theories often takes a more individual, psychological, and needs orientation as found in "Human Scale Development" (Max-Neef, et al, 1989). Sustainable development theory finds its roots in this ecologically affiliated group of theories, but is only recently articulated, beginning in the mid 1980’s.

Summary of Historical Trends

Several historical trends concerning sustainable development content, through global education and environmental education deserve mention:

1. Although sustainable development as an academic entity has only existed for a decade; nature study, conservation education, outdoor education, global education, and environmental

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education have persisted for close to one hundred years. This suggests, as L.H. Bailey stated, "Nature Study will endure because it is natural and of universal application" (1903, p.6).

2. The problem of definition and naming which plagues sustainable development also plagues environmental education and global education.

3. Schools in the past century found it difficult to cope with environmental issues resulting from economic growth and technological exuberence (Disinger, 1983). The typical response has been to cover the symptoms of environmental degradation in a hit or miss fashion and to avoid underlying causes.

4. Government agencies maintained an educational purpose concerning the environment since the days of Gifford Pinchot. These educational objectives have remained utilitarian concerning the environment and have continued a strong anthropocentric orientation (Hays, 1959) The Environmental Education Act of 1990 exemplifies this same orientation (Marcinkowski 1991).

5. Attempts to legislate sustainable development content through environmental education and global education both at the Federal and State level have been generally ineffective. However, a great deal of variation exists at the state level, with more states adopting environmental education and global education programs (Disinger, 1987).

6. The values of the individuals writing about sustainable development issues have changed very little over the past one hundred years. Although many individuals acted politically in
the past, the current writers are more politically and legally astute (Nash, Rod., 1982).

7. The Caucasian upper-middle-class makeup of the environmental movements has historical roots. The conservation movement of the late 19th century was the extension of a technologically orientated group of elites who sought to control public attitudes toward the wise use of natural resources as determined by scientific management technologies (Hays, 1959). The upper-middle-class makeup of environmental movements results from this class of people having the most to lose from environmental degradation (Thurow, 1980).

8. Although economic and environmental issues are inseparable, few economists have taken sustainable development seriously. For over a hundred years neoclassical economic theory has dominated the decision making process concerning the environment and the relationships between nations. Unfortunately, education in the discipline of economics includes little concern for sustainable development concepts (Simon, J., 1981; Thurow, 1980).

9. Educational change over the course of U.S. history has generally been a response to attention gaining events occurring in the mainstream of U.S. life, and to broader trends such as urbanization, industrialization, or population growth (Walker, 1990).
Evolution of sustainable development theory

The concept of sustainable management has been used since the turn of the century by foresters and biologists. In the utilitarian tradition, this concept meant to achieve maximum yield while not depleting replacement stock (Brown, et al, 1987; Nash, Rod., 1989). Writers through the 1970's brought the concept of sustainability into consideration concerning issues of agricultural practices and energy supply (Brown, et al, 1987). The energy panics of the 1970's helped invigorate the notions of sustainability suggesting the importance of scientific and technological considerations. More importantly, however, these "panics" demonstrate that the most important decisions concerning energy were neither scientific and economic, but social and ethical (Lovins, 1971).

Many reports concerning the environment and development were presented in the 1980's. These reports stressed the need for adopting sustainable development concepts in global issues. The reports also recognized the unsustainable policies and actions of nations and expressed a concern for controlled economic growth. Sustainable development concepts were stressed by such reports as: the publications from the Global Tomorrow Coalition, The Global 2000 Report of the CEQ, the World Conservation Strategy by the International Union for Conservation of Nature and Natural Resources, and the publications of the World Resources Institute and International Institute for Environment and Development. Perhaps the most influential report of the 1980's came from the
United Nations’ World Commission on Environment and Development (1987) entitled *Our Common Future*. This report emphasized the need for sustainable economic growth and called attention to the political nature of military, environmental, and development issues.

Most of these reports were reasonably well researched and written, but often represented the interests of the economic growth orientation inherent to the capitalistic interests of the North (Lohmann, 1990; Sachs, 1990). The reports suggested that solving global environmental problems and underdevelopment in the South required more economic growth globally. Only slight cut backs in Northern economic growth were suggested with better technology and efficiency applied all around. As a result of their technological and financial orientation, the reports typically implied that environmental and development concerns are not issues of equity, welfare, and power relations (Ekins, 1989; Lohmann, 1990; Sachs, 1990). The reports essentially call for more of the same, but in different degree, in response to environmental and development issues. These reports and their critiques bring the need for definition of sustainable development and a sustainable society to the fore. Definitions must include economic and technological considerations, but must redefine the concept of progress to include consideration of equity, the fulfillment of necessary and desired needs, and ecological equilibrium.
Definitions

Sustainable development content typically goes beyond the scope of environmental education and global education. The conception of sustainable development involves the ethical and political decisions individuals and societies must make regarding the distribution of the costs and benefits of their economies. What follows are definitions of development, a sustainable society, and sustainable development. These definitions are accompanied with explanations of the wording and the ethical orientation.

Development - Transformation fostering ecological equilibrium which equitably satisfies human needs and the necessary and desired improvements in the quality of existence.

Sustainable Society - The persistence over an indefinite future of certain necessary and desired characteristics of the socio/political system and the ecological systems which maintains that society (Robinson, et al, 1990).

Sustainable Development - Transformation which fosters social, political, and ecological equilibrium over an indefinite future which equitably satisfies human needs and allows for the necessary and desired improvements in the quality of existence. Or, equitable changes which result in a sustainable society.

These three definitions are offered because their concepts and assumptions interrelate and support each other. The definitions contain several concepts which require explanation:
1. The concept of "quality of existence" involves a subjective judgement of each society, but doesn't exclude the quality of all life on earth. These words temper the anthropocentric orientation of the definitions by including all existence. The definitions also imply that development need not require human intervention by not qualifying the word "transformation."

2. The use of the word "equitably" brings with it the recognition of fairness and the importance of relationships to the development process. It represents the attempt to balance the concepts of liberty, equality, and solidarity (Adler, 1981; Copeland, 1988). Much more will be presented on the importance of equity to sustainable development in clarifying the definition and in the significance of the study.

3. The words "needs" and "desired" suggest that there is a difference between desires (wants) and needs, but often the distinction between necessary and wanted improvements is cloudy.

4. "Ecological equilibrium" is used to bring in the ecological limits facing human economies. Equilibrium suggests a dynamic yet steady state in which the natural environment is sustained. These words have global, regional, and local implications.

5. The phrase "ecological systems which maintain that society" is used in place of "socio-political system and its natural environment" (Robinson, et al, 1990). This change represents a switch from the possessive and anthropocentric
orientation of the Robinson definition. The change implies that humans are a part of and dependent upon ecosystems rather than separated from the "natural environment."

6. The definitions do not restrict the types of society which might be sustainable. Societies might move toward sustainability from either an individual or social orientation, but a non-coersive balance between individual and societal freedoms and the environment are implied by the use of the word equitably. Individual liberties require the balance of equality and the obligation to community.

7. "Social, political and ecological equilibrium" are included in reference to a sustainable society. The implication is that continual major changes in human societies will have unsustainable environmental consequences. Wars and civil revolutions have devastating impacts upon both societies and the environment. Societies and leaders who feel threatened often choose to increase their military capabilities. This militarization wastes lives and resources and threatens human existence on the earth.

8. The definitions include stability and change for both socio-political and ecological systems. They also stress persistence of both over a long yet not indefinite time frame (Robinson, et al, 1990).

9. The definitions suggest that there can be no improvement in the quality of existence (human or other) that doesn't include the maintenance of present ecological systems. Although these
systems are in dynamic equilibrium, the long term sustainability of all ecological systems must be included in human societal changes.

10. The definition also suggests is made that each society must decide which characteristics are needed and desired. No conditions are placed upon who should make those decisions, or how they should be made in the definition. However, the word equitably suggests that decisions should be made fairly with a sense of caring for societal members, other societies, future generations, and ecological systems. Although every society must decide what it determines to be equitable, some form of the democratic process seems the only way to allow for the non-repression of ideas and the non-discrimination of individuals. The democratic process also is consistent with the freedom needed by all.

**Equity and the defining of Sustainable Development**

Sustainable development content translates to education involving equity issues at four levels: between nations, within a nation, between generations, and between species. Funk and Wagnalls dictionary defines equity as "fairness or impartiality, and involving a sense of justice, the principle by which we distinguish right and wrong." By framing sustainable development content in terms of equity, this study stresses the obligations or moral decision we must make at each of the four levels. This is not an easy task because there are many ways to justify the decisions we make concerning fairness and relationships. This
does not mean, however, that there is no right or wrong concerning matters of our obligation regarding equity issues. This is why sustainable development and education that might match those changes must be based upon well explained philosophical theory. Because of the complexity of the issues the analysis may result in some ambiguity concerning our obligations, but the justification of our actions should at least be clarified. Ethical analysis is important in sustainable development because the decisions concerning these issues will shape the future of the earth. By using equity as a definitional tool, this study brings the ethical system by which we justify environmental and development decisions before critical scrutiny.

Gilligan (1982) describes two models of moral development taking place in children in the U.S. The first is a male model of morality based upon rights and focused upon the justification of fairness. Kohlberg’s (1981) and Piaget’s (1932) models exemplify this type of rights model of moral development by describing the progression of moral thinking based upon the conceptualization of justice. The second is a typically female model based upon responsibility and relationship. This second model suggests a need to develop understanding, compassion and care (Noddings, 1984). Sympathy is justified in relationships between humans and between humans and animals and is not simply an expression of sentimentality. Sympathy is explained by common biological life characteristics and is a very complex perception.
which increases with enlightenment (Fisher, 1992).

By stressing equity, sustainable development focuses on the need to analyze and act upon relationships between people, living entities, and ecosystems (Gardner, Roseland, 1989; Pearce, 1988). Although sustainable development would move us toward more of an ethic of caring, the relationships which now exist between people and the environment are justified by the ethic of rights (Nash, Roderick 1989). This justification is conceived primarily by white males who fill positions of power in our political and economic system (Tilly, 1990; Gilligan, 1982). The ethical analysis required of sustainable development must therefore concern itself primarily with the norms and justification of thinking, feelings, and behaviors characteristic of rights concerning development and environmental issues.

The four levels of equity concerning sustainable development are:

1. **Equity among nations** - The suitability of the earth for human life is greatly impacted by the relationship between the industrialized nations of the North and the non-industrialized nations typically found in the Southern Hemisphere. Although geo-political relationships are dynamic; current arrangements between nations result in great affluence, resource depletion, and waste production in the North; with great poverty, resource depletion, and environmental degradation in the South (MacNeil, 1988; Redclift, 1984). In addition, equity among nations is strongly impacted by the power of multinational corporations.
The impact of transnational capital serves to weaken the influence of national democratic institutions, decrease the strength of community voice, and increase the importance of economic norms (Korten, 1993).

2. **Equity within nations** - Inequity within nations is an issue in all countries. The poorest people in every country face the danger of living in environmentally degraded conditions (Durning, 1990). Women all over the world are typically the poorest of the poor (Charlton, 1984; Hartmann, 1987; Jeffery, et al, 1989). The poor face many problems associated with the quality of their lives.

3. **Equity between generations** - Sustainable development involves changes in life styles based upon the notion of justice between generations and a conception of morality which includes future generations in its evaluation of fairness (Hendry, 1990).

4. **Equity between species** - This notion of equity suggests the extension of moral standing beyond human beings to other species. This type of deep ecological thinking also suggests that natural diversity has intrinsic value, and equating value with only value for humans is a form of racial prejudice (Devall, 1988; Taylor, 1986).
In this chapter literature pertinent to teacher preparation in sustainable development content will be reviewed. Because teaching and sustainable development have been defined as ethical processes, the ethical foundations of both are reviewed. It is essential that teacher preparation in sustainable development be built upon a strong philosophical foundation. Although there is a great deal of literature describing sustainable development, little has been written that provides analysis of the various theories of equity which underlie the assumptions of sustainable development, present development efforts, and education.

In this first chapter of the literature review, I review literature pertaining to the philosophical basis of sustainable development. This literature concerns equity among nations, within nations, between humans and other species, and between present and future generations. I review utilitarian, libertarian, human rights, economic efficiency, virtue, biocentric, pluralistic, and ecocentric theories as applied to the four areas of sustainable development.

The review of literature on sustainable development is organized by the levels of equity used to help define sustainable development. In this review I concentrate upon the philosophical foundations of both sustainable development and present
conceptions of development. Various theories of justice and ethics are reviewed as they apply to development and the environment. A brief explanation of the principles and assumptions involved with these theories is provided prior to the review. In this chapter of the literature review I don’t focus on the problems relating to sustainable development, as these problems are briefly covered in the study significance portion of the first chapter. Similarly, I do not include literature that describes sustainable development policies or institutions in industrialized nations because at present, industrial nations are not models of sustainable societies. Theories of justice pertaining to development and the environment are reviewed because of the distributional and interrelated nature of all development and environmental issues. Because this literature is extensive, representative examples have been chosen.

**Theories of Justice**

Theories of justice provide the principles and rationale for determining how social and ecological relationships should proceed. Although one theory often dominates, all of the theories seem to come into use when complex social issues arise. Our morally pluralistic society has retained many of the principles from theories of justice which philosophers often consider inappropriate or obsolete. Understanding the ethical principles around which action is based helps to illuminate the assumptions involved with development efforts. This study is based on the fact that environmental and development issues are
distributional in nature. Understanding the principles and assumptions of the various distributional justice theories allows for a more complete understanding of the principles upon which sustainable development should be based.

**Virtue Theory**

Virtue theory of justice is based upon property rights in which everyone gets what they deserve (Wenz, 1988). The theory stresses competition to determine those who deserve more societal benefits and fewer burdens because of their superior ability and efficiency (Newman, 1988).

Virtue theory forms the basis of the meritocracy that is so present in industrialized societies and especially in the United States. Historically, societal rewards were based on merit as judged by societal position, aristocracy, and wealth (Stevens, Wood, 1987). As the aristocracy was replaced by the different forms of democracies found in Western industrialized nations, merit was transferred to those in privileged positions in society. Authors suggest several origins of meritocratic thinking. The first origin is the application of social Darwinism which justifies position and power by applying natural selection to human relationships (Ruffie, 1986). The second origin suggests the strong influence of Adam Smith’s theory of economics with its emphasis on the value of competition (Newman, 1988). A third source comes from a secular twist of Puritan doctrine. The Puritans stressed hard work, diligence, and thrift. These qualities were adapted to economic and social life as success in
military and social life became seen as a sign of virtue (Wenz, 1988). As Wenz suggests, "Those who work hard, are diligent, punctual, honest, and so forth are morally good people and will be successful." (1988, p. 47) This principle of merit suggests that individuals vary in their merit and that merit is a complex combination of characteristics internal to each individual (Ryan, W., 1981).

In addition to the principle of merit, virtue theory relies heavily upon the principle of equal opportunity. If all people are given equal opportunity for success and societal position, the most meritorious will reap their just rewards. The proponents of the meritocracy state that all individuals should be given equal opportunities to increase their well being. These proponents hold up examples of people who "made it" from the bottom rungs of society by means of their cunning and hard work. In the U.S. the "American Dream" finds its roots in the theory of virtue with its emphasis on merit (White, J.K., 1988).

**Efficiency Theory**

The foundation of efficiency theory of justice lies on the assumption that human wants are insatiable, and that property rights are created by law and are not natural rights (Wenz, 1988). This theory relies upon the market and the process of voluntary exchange to establish justice. The theory holds that the most efficient use of resources, human labor, and capital will lead to competitive success in the market.

Value is determined in efficiency theory through exchange.
Another assumption regarding value in the efficiency theory of justice is that value is determined by the interaction between the insatiable desire to consume and the unwillingness to work (Hall, et al, 1986). People don’t want to work, but will exchange their labor for goods and services because of their insatiable desires.

The state exists in efficiency theory to promote the exchange process because it is through exchange that human well being will be enhanced. Because of its emphasis on exchange, economic growth, and consumption; efficiency theory focuses on human needs "to have." The assumption is that the more a person has, the easier it becomes to fill other human needs.

**Libertarian Theory**

The Libertarian theory of justice is a theory based on property and individual freedom. Economic justice occurs when individuals are allowed to enter market relationships and trade what they have gained through their own efforts and their historical rights to property. The absence of force and fraud are essential to the application of libertarian economic theories of justice. Minimal state restrictions are also essential to libertarianism as the state is only required to protect private property and individual freedom (Wenz, 1988).

Although libertarians believe in restricting government not individuals, they often advocate enough government to maintain societal order and a strong military to dictate peace among nations (Limbaugh, 1992). Government should not use its power to
control information or values. Values are best left to the creation of the individual after family teaching. Governments should ensure equality of opportunity and should not use its power trying to create equality of result (Limbaugh, 1992)

**Utilitarian Theory**

Utilitarian theory states that everyone should act in such a way to bring about the greatest good over bad for the greatest number of people. This theory often frames good and bad in terms of consequences such as pleasure and pain. Utilitarians are not concerned with motives that result in action, the primary concern is the consequence of an action. Consequences determine the rightness or wrongness of an action. Utilitarianism is often used as a justification of consumption of goods and services as the maximization of consumption should make people happy and satisfy their needs. Benefit/cost analysis often accompanies utilitarian theory in an attempt to quantify the utility of one action as opposed to another.

**Human Rights Theory**

Human Rights theory is organized around the inherent value of human beings. Human rights theories are often referred to as deontological or theories of duty. In this theory a right involves a correlative duty, or obligation of others to recognize and submit to an individual’s claim, or right to a benefit. Consequences are not considered in this theory, as judgement of right and wrong involves decisions made regardless of consequence.
Proper motives lead to proper behavior in human rights theories of justice. Rightful human behavior is founded upon the obligation of individuals to universal moral codes. Human rights theories can appeal to religious tenets such as the Ten Commandments, natural law which relies on reason, or other social contracts (Beauchamp and Childress, 1979). Human rights theories suggests that people must not be considered means, but as ends in themselves.

**Animal Rights Theory**

Animal rights theorists argue that animals have inherent value. Because of this value, animals with inherent value should not be harmed or used instrumentally to serve the interests of others. Although different criteria are used to determine standing, animal rights theorists believe that animals with inherent value are ends in and of themselves. Respect and justice is due to animals with standing and harm should be avoided whenever possible (Wenz, 1988).

Animal rights arguments are similar to those coming from a human rights position. The criteria for moral standing have been expanded to include certain animals by the animal rights theorists, however. Consequential theories involving animals are not included under animal rights positions in this study.

**Biocentric Theory**

This theory of justice is closely related to both animal rights and ecocentric positions. Those believing in this theory hold that each living thing has inherent value and that humans
must consider this value when choosing actions. Biocentrism differs from animal rights positions in that it is much more encompassing. All life is included in biocentric positions regardless of specific individual characteristics such as sentience. Biocentrism differs from ecocentrism in that the focus of value is placed upon the interests of each individual member of a species. Ecocentric theorists often place value in individuals, species, or even ecosystems.

**Ecocentric or Pluralistic Theory**

Ecocentric theories of justice typically suggest that human beings should limit their impact upon the environment and other species. Energy and carrying capacity are used as a means of analysis for relating the needs of all species and the maintenance of biospheric integrity. Ecocentric theories use holistic concepts with the ultimate purpose of maintaining the stability, integrity, and beauty of the biotic community. There is great disagreement on how to include the environment into theories of justice. The use of traditional conceptions of justice concerning the biosphere involves a good measure of "ethical gymnastics." The holism inherent to ecocentrism doesn’t fit well with the atomistic, or individual orientation of traditional theories. It is obvious, however, that the ecocentric theories are far from representing a coherent theory of justice regarding relationships between nations.

Pluralistic theories are similar to the conception of ecocentrism in that there are a number of principles which cannot
be reduced to a single universal imperative. In effect, there is
an incommensurability between conflicting moral requirements
(Keekes, 1992). There is no summum bonum as absolutes are viewed
as impossible by pluralists.

**Equity Among Nations**

In this section of the literature review I review authors
who describe equity issues between nations. Much of this
literature pertains to economic concerns and the impact of
decisions made in the name of economic freedom or efficiency.
Virtue, libertarian, economic efficiency, utilitarian, human
rights, and ecocentric theories are described in this section.
Much of the literature in this section overlaps, using
combinations of principles from the various theories.

**Virtue Theory**

It is an easy conversion to apply a virtue theory of justice
to relationships between nations. Tribal people are not
industrialized because they are lazy and not "developed"
culturally. Tribal people laugh and are happy because they are
so ignorant that they don’t know what they are missing. As
Bodley (1982) suggests in *Victims of Progress* the ethnocentrism
of perceiving one culture as superior to another is often bound
to virtue principles. Industrial societies with emphasis on
materialism, progress, and consumption don’t coincide with tribal
society’s emphasis on filling basic needs. The result of
industrial "progress" has been the degradation of tribal lands,
cultural imperialism, and discrimination. Industrial nations
justify their exploitation of tribal resources by pointing out that they deserve the benefits from tribal resources because of their hard work and the cultural superiority of their industrial society.

In "The World Bank Tribal Policy: Criticisms and Recommendation," Bodley (1988) criticizes the application of virtue theory in the World Bank’s policy toward people in non-industrial nations. Bodley states that the basic assumptions of World Bank tribal policies are ill founded. These assumptions include: industrialization (development) is inevitable for tribal nations, development will benefit everyone, tribal peoples will be allowed to choose their own societal direction, and tribal people will become ethnic minorities (p.407). Bodley stresses that tribal societies never have the option to reject "development" projects. Bodley states,

"Implicit in this is the notion that industrial civilization is superior and has a moral right to incorporate what it considers to be obsolete cultural systems." (p. 408)

Chambers (1989) warns of the problems inherent to imposing Western values on other cultures in Applied Anthropology. Chambers suggests that virtue theory is often in operation when anthropologists work with other cultures. This author stresses that American cultural patterns and values are inconsistent with the values and needs of non-industrialized societies. Chambers indites action and advocacy based on virtue theories as being inappropriate and discriminatory.

Chombart de Lauwe (1986) describes the involvement of
technology and the application of virtue theory in "Technological domination and Cultural Dynamism." The latest technology allows industrialized societies a sense of superiority which inhibits the people in those cultures from understanding and appreciating the value of ideas and understandings from other cultures.

Agnew (1987) describes virtue theory as a national policy of exceptionalism in The United States In The World-Economy. Agnew states that U.S. policy leaders applied the principles of merit to justify expansionism as America was envisioned by Americans as a "land of exceptional virtue" (p. 12). The policy of frontier conquest and exploitation was transferred from the American West to the world. It became a matter of destiny that exploitation of foreign markets and the use of military power be justified in the name of liberty and the spread of freedom. Agnew states that the exceptionalism which is a part of social Darwinism and virtue rationales still inhibits the realization that the U.S. has lost its hegemonic relationship with the rest of the world.

Wattenberg (1987) presents an example of social Darwinism and virtue theory in The Birth Dearth. Wattenberg describes the people in Western, industrialized nations as the victims in world population growth. Because the total fertility rate in the industrialized West is much lower than in the rest of the world, there are fewer people being born with the right values and political orientation. Wattenberg states,

"Democratic values are contagious. They have spread remarkably in the last two centuries. The democratic ideal needs carriers. Who are the carriers? Powerful nations...primarily the U.S. If these national carriers are
weakened in the relative scheme of things - by diminishing population strength and its outward ripples - is it possible that the spread of democratic values may be slowed?" (p. 87)

Wattenberg suggests that industrialized countries need to adopt policies which increase their populations. Wattenberg uses demographic analysis to demonstrate that future generations will suffer since there will be fewer individuals to support them in their retirement.

Hardin (1985) describes the ecological problems facing nations in Filters Against Folley extending his explanation of the tragedy of the commons. He states that three methods of testing reality are needed: literate, numerate, and ecolate. These three tests require balance, as overemphasis upon one will lead to an inappropriate analysis of reality.

Hardin uses metaphor of the tragedy of the commons to suggest that there are very few truly global problems. He suggests potholes, hunger, and overpopulation are local not global problems. He stresses the danger of globalizing a local problem suggesting that solutions at the global level are virtually impossible to achieve. Hardin also stresses that the only answer to problems involving the commons involve privatization or governmental limitation to access of publically owned property.

Hardin's pessimism illustrates a misunderstanding of the global interconnections and the confusion of symptoms and problems. Hunger and overpopulation are local problems and should be dealt with locally, but are also symptoms of national
and international problems. Global economic policies, for instance, play a critical role in local hunger and overpopulation. These interrelationships should be exposed and changed to allow local control which would facilitate local problem resolution. To suggest that overpopulation and hunger don't have international causes supports the status quo of exploitation inherent to neo-colonialism and the inequities justified by virtue.

Said (1981) relates the problems of objectivity in how media in "the West" portrays people from the rest of the world in *Covering Islam*. Said demonstrates the dangers of characterizing a whole group of people with an image which inhibits understanding and promotes ethnocentrism and distrust. Said criticizes the use of power by media conglomerates to influence knowledge and judgements about other human societies. Said stresses the need of those in the communication industry to overcome the cultural barriers which inhibit understanding and wisdom. Limiting the influence of personal interest and values in the interpretation of societal relationships involves placing intellect in the service of morality and community rather than in the service of power.

**Efficiency Theory**

Many of the strategies for economic growth in non-industrialized nations is based upon the efficiency based theory of Rostow (1960) explained in *The Stages Of Economic Growth - A Non-Communist Manifesto*. In Rostow’s model of economic growth
nations follow a linear, inevitable, progression toward modernity. The model involves five stages: (1) traditional society, (2) the preconditions for take-off, (3) take-off, (4) the drive to maturity, and (5) high generalized consumption. In this model non-industrialized nations are depicted as less modern than other nations exist at the same time. As a result, Rostow makes modern synonymous with industrialized capitalism. Economic growth and efficiency are glorified by this model as appropriate and natural in societal evolution. Rostow uses historical analysis to combine virtue and efficiency theories into a model of economic growth which equates industrialism, capitalism, and materialism with development and human well-being.

Warren, B. (1980) provides a Marxist version of stages of growth development in Imperialism: Pioneer of Capitalism. Warren's premise is that imperialism and capitalism provide the momentum for progression toward communism. Warren minimizes the impact of the inequity promoted by efficiency and virtue theories of justice as a means to an egalitarian society.

Branco and Williamson (1988) studied the impact of economic growth on the poorest 40% of the population. Their study, entitled "Economic Development and Income Distribution: A Cross-National Analysis," suggests that the bottom 40% lose income both in real and relative terms early in the "development" process. The authors found that after the initial take-off stage, the lower income bracket does gain income but these gains become marginal at later stages of industrialization.
**Lords of Poverty** by Hancock (1989) is a well documented criticism of the official aid industry. The author demonstrates the political nature of the aid industry and illustrates the ineffectiveness of a neoclassical development model which follows meritocratic cultural assumptions.

Hancock argues that the suffering and poverty which takes place in Third World countries occurs because of aid rather than in spite of it. Aid is depicted by Hancock as a means to the ends of wealth maximization in industrialized countries. The author suggests that the real issue involved with aid centers upon human rights and states without reservation that aid doesn't work to enhance the human rights of the poor and starving people of the world. Rather he states aid functions to maintain the expansive aid bureaucracy and in the tradition of the meritocracy the political position of leaders who condone or facilitate human rights abuses.

Forest (1991) describes the use of efficiency and virtue theories of justice applied to foreign aid in "Japanese Aid and the Environment." Japan is the largest bilateral donor to Third World countries with the rate of Japan's foreign aid growing faster than any other country. The Japanese budget has become larger than the U.S. budget because the U.S. provides a great deal of aid to military projects in the oil rich Middle East while Japanese aid is primarily non-military in nature. The size of Japan's economic aid makes Japan a major player in the worldwide aid industry. This aid is distributed strictly as a means
of ensuring Japanese economic growth and is based primarily on efficiency theory. Strong doses of meritocratic assumptions are also inherent to the distribution of Japanese aid. The structural adjustment of loaning countries is typical of the cultural imperialism found in Japanese aid strategies.

In addition to its bilateral role, Japan is the second leading funding source for the World Bank, The International Monetary Fund, the African Development Bank, and the leading source of funding for the Asian Development Bank. In total, Japan presently supplies $22 billion to the Third World each year.

Forest suggest that Japanese aid fills the role of industrial production which is no longer economically profitable in Japan. Development aid supports Japanese economic goals as the distinction between government and business is even less well defined in Japan than in the United States. Forest also suggests that Japan's policies are not consistent with environmental protection. There are few environmental experts in the Japanese aid hierarchy and the Japanese hold a strong belief in the omnipotence of technology. Forest states that Japan's assistance orientated toward the environment involves highly sophisticated equipment providing large profits for Japanese industry. Foreign aid makes money for Japanese industry by supporting technological solutions to environmental problems. Forest views reform in Japanese policies to protect the environment unlikely.
Paranti (1986) describes the use of media to promote the interests of big business and efficiency theories of justice in *Inventing Reality*. Paranti analyzes advertising, media ownership, media personnel make up and values, and the media's treatment of global affairs to point out the role of the communication industry in perpetuating neo-classical economic policies. Inequitable societal relationships in industrialized Western nations and between the West and Third World nations are explained away by the use of virtue and neo-classical economic theories. Paranti exposes the mass media's own economic interests and the influence of those interests upon the interpretation of world events.

The report of the World Commission on Environment and Development (WCED - 1987) entitled *Our Common Future* directly addresses issues of equity between nations. The report defines sustainable development as a "process of change in which the exploitation of resources, the direction of investment, the orientation of technological development and institutional change are made consistent with future as well as present needs." (p.9)

The WCED report is a highly political document which stresses the importance of equitable relationships between nations. Its prescriptions to achieve a redistribution of wealth are based upon the same tenets of neoclassical economic development which brought about the need for thinking of sustainable development. The WCED suggests an economic growth rate of 5-6 per cent in non-industrialized countries with a
growth rate of 3 per cent in industrialized nations. These projected growth figures are essentially based upon increased efficiency and the development of new technology. As a result, the report grounds itself upon a platform of limitless resources and the arrogance of technological exuberence.

*Our Common Future* suggests a pro-growth, stages of growth approach endorsing trickle down philosophy. Because of this orientation, the WCED report represents more of the same economic exploitation which caused many environmental and social problems. The WCED makes a statement for the concern of human rights and the environment, but suggests that these concerns can be best addressed by more of the same economic exploitation.

The notable features of the WCED report are its criticism and recognition of global military spending, its call for a new international aid structure, and its suggestions concerning international legal procedures. Unfortunately, the document fails to critically assess the failings of such international institutions as GATT, The World Bank, or United Nations Food and Agriculture Organization. In addition, the importance of world debt problems is not given appropriate stature. The most prominent failing of the WCED report, however, is the lack of a plan for the implementation of its agenda.

Stavrianos (1981) suggests the importance of the Third World in global relationships through historical analysis in *Global Rift*. The author documents the economics, politics, and development of the Third World over four centuries. The analysis
demonstrates the need for a multicultural perspective in dealing with problems of the global commons. Equity between nations is of primary concern as the policies of industrialized nations are examined and criticized. Stavrianos' analysis demonstrates the lack of hegemonic control as global power relationships have changed. The U.S. policy promoting elite control and benefit are criticized while the need for self determination and equity between nations is stressed. Stavrianos suggests the need for industrialized nations to change their policies of Third World exploitation as the power and influence of the Third World becomes more apparent. The author finds the overdevelopment found in the industrialized North as problematic as the underdevelopment of the South in global interrelationships.

Stavrianos describes "trickle down" efficiency theories of development strategies as "trickle up" and exposes the inequity of present relationships between North and South. The relevance of inequities are demonstrated as the U.S. and Soviets can do little to control the changes demanded in the Third World despite the efforts of these world powers.

**Libertarian Theory**

technology. Simon believes that the more people on earth, the more people will be available to solve problems. Over the long run Simon believes that more people will result in lower costs and less scarcity. Simon also believes that government control and interference in the market inhibits individual imagination and responses that would alleviate social problems.

**Ecocentric Theory**

Redclift (1987) examines the contradictions of development and environmental practices found in *Sustainable Development*. The author suggests the problems of relying upon the market to solve environmental problems while pointing out the ineffectiveness of government in protecting and sustaining resources. The political struggle between the industrial North and non-industrial South are also exposed as a contradiction in goals concerning the environment.

A third contradiction involves the development of ecologically rational behavior patterns. Redclift suggests the need to recognize the strengths of different rationalities concerning development and the environment. The cosmological factors impacting peoples of different cultures exist as a barrier to sustainable development. Redclift represents technology as involving problems with time orientation, as human time reference changes with technological advances as compared with ecological time references. Finally, Redclift exposes contradictions in social theory which ignores the biological and ecological components of human behavior. The author describes,
through a holistically oriented analysis, the problems associated with applying a universal ethic for development.

Redclift fails to come even remotely close to an effective definition of sustainable development. He also fails to effectively deal with the psychological component of sustainable development. Although Redclift stresses the importance of pluralism and participatory decision making in environmental and development issues, suggestions for implementation of sustainable development concepts are lacking.

Redclift does provide insight into the political nature of development and the need for an economic accounting system that deals seriously with the environment. He suggests an accounting system which values stocks rather than flows of resources. The strength of *Sustainable Development* lies in its illustration of the social components of development and its description of the problems associated with sustainable development.

Cottrell (1955) provides an excellent analysis of the importance of energy to human life styles, as a predictor of the limits to human activity, and as a determinant of societal organization. His book, *Energy and Society*, with the subtitle, "The Relation Between Energy, Social Change, and Economic Development," is often overlooked in development literature. Cottrell suggests, "It is that the energy available to man limits what he can do and influences what we will do." (p. 2)

Cottrell uses historical review of societal transformations to demonstrate the importance of energy to the course of human
societal organization and behavior. He suggests through his analysis that typically "as the amount of energy increases, the variety of his activities increases." (p. 31). He also demonstrates that in low-energy use systems an equilibrium is struck between human population numbers, social control institutions, and energy use/production.

Cottrell emphasizes the importance of energy converters as an expression of power both within and between nations. The individuals or society with access to the most converted energy become the most powerful and dominant. Energy conversion relates to the transformation of energy potential into forms useful to humans. Because energy is a basic requirement needed to sustain life it can be used as a primary unit of analysis when investigating human societal changes. Human beings extend their conversion of energy beyond the food they eat with tools and technology that change other forms of energy that serve human purposes. Cottrell suggested that the values favored by humans correspond to energy forms and availability. Changes in form and availability of energy accompany changes in societal production and consciousness. If the technology used by a society doesn’t allow for the conversion of other energy forms, the possibilities open to humans regarding their activities, values, and social structure are limited.

Cottrell states that the energy conversion inherent to sailing allowed societal transformation from feudal organization to mercantile capitalism. The use of energy found in steam to
power transportation and manufacturing technology changed societal organization and values found in industrial capitalism. His analysis of industrial societies suggests that the increased specialization of production allowed by the extensive conversion of steam energy to mechanical energy created a separation of family, state, religious institutions, the military, and corporations. This separation created a complicated hierarchy of values and social organization. Cottrell maintains that the bureaucracy characteristic of industrial society results as an attempt to establish stability from the disequilibrium created by extensive energy conversion. The equilibrium inherent to low-energy societies takes much longer to establish in industrial societies because of the complicated and fragmented values and societal structure.

Cottrell stressed the importance of the value position of those individuals controlling energy decisions. In his analysis, decisions involving change toward a sustainable society would depend upon the control of energy conversion. The receptiveness of individuals in control of that conversion would be instrumental in the equitable distribution of embodied energy through the four levels defining sustainable development.

Although Cottrell wrote *Energy and Society* almost forty years ago, his analysis is perceptive as it stresses the importance of energy to ecologically sound development. Unfortunately, his analysis is overly singularly deterministic and lacks the holistic perspective an ecological perspective
requires. Cottrell's analysis does, however, provide excellent illustrations of the primacy of energy to societal values and change. The author's analysis also demonstrates the complexity of an ecologically orientated perspective.

Catton (1982) provides a more recent version of an ecological theory on development. In *Overshoot* Catton uses ecological analysis to explain the changes and events affecting humans and human society. The thesis depends primarily on energy analysis applied to the ecological concept of carrying capacity. Catton describes human behavior as an ecologist would describe any species' activity within their niche. The author's descriptions were not intended as a theory of justice, but the analysis describes the ecological principles needed to sustainably connect humans to the environment. Catton suggests that the mechanistic worldview which separates humans from nature by means of technology has dominated all ethical considerations.

Catton explains pre-industrial exploration as a take over process in which humans enlarged their carrying capacity. Just as with any species, humans win a larger share of the web of life by the process of adaptation. Catton calls the second method supplementing carrying capacity the draw down method. Starting around 1800 A.D. the use of fossil fuels enabled humans to further expand carrying capacity. The draw down method allows humans to sense the limitlessness of exploitable resources and the human potential. Through technology, humans convert stored energy from ancient photosynthesis into mechanical energy.
perpetuating the myth of human superiority.

Catton points out that more than 9/10 of industrial man's energy conversion involves combustion of ghost acreage. This acreage involves non-renewable carbon other than this year's crop of vegetation. The use of temporary, ancient sources of solar energy has supplemented carrying capacity allowing the material consumptive life styles found in Western industrialized societies.

Catton stresses the importance of invisible acreage affluent nations use to supplement their own local carrying capacity. Fish acreage and trade advantage expand the concept of invisible acreage demonstrating how the limits of local carrying capacity are clouded by industrialized societies. The author describes how the substitution of the word "development" for "oil extraction" by industrialized leaders disguises the reality of the use of fossil fuel for societal use.

**Utilitarian Theory**

Daly and Cobb (1989) suggest a redirecting of economic theory stressing community, the environment, and sustainability in *For The Common Good*. The authors apply an index of sustainable economic welfare which reflects a more complete version of well being than the typical GNP calculation. Daly and Cobb include many more factors than the typical benefit/cost analysis. The following list demonstrates the extensiveness of factors included in their index: personal consumption, distributional inequality, household labor, consumer durables,
highway and street service, public expenditures on health and education, expenditure on advertising, private expenditure on health and education, expenditure on consumer durables, costs of commuting, costs of urbanization, costs of auto accidents, costs of water, air, and noise pollution, costs of loss of wetlands, costs of loss of farm land, depletion of non-renewable resources, costs of long term environmental damage, net capital growth, and change in net international position.

Daly and Cobb’s calculations reflect a more humanistic and environmentally sensitive application of current economic theory. Unfortunately, their calculations also demonstrate the futility and bias inherent to the quantification of sustainable well being.

The Global Ecology Handbook produced by the Global Tomorrow Coalition (1990a) stresses the fact that the goals of many different groups - business executives, government officials, development experts and people concerned with global equity and environmental sustainability are problematic. These different goals and conceptions of utility provide great problems in assessing the greatest good, as much of what passes for utility depends upon who does the measuring.

The GTC stresses that most of the assistance that flows from industrial countries is tied to purchases in the donor nation. In addition, the gap between rich and poor countries is described with graphic statistics. The GTC suggests that these statistics often hide more than they illuminate, and stress that there is no
objective way to evaluate standards of living across the world.

GTC provides excellent coverage of global security. The authors describe the influence of the arms race on environmental degradation, population pressure, Third World debt, and poverty. Military expenditure is described as the primary drain upon resources that might better be used to create security through environmental protection and equitable distribution of those resources.

In a similar fashion, Kennedy, P. (1987) offers a historical analysis of economic change and military conflict over the past 500 years in *The Rise And Fall of the Great Powers*. The author’s contribution to sustainable development theory involves the significance of balancing the use of wealth for military security with the use of wealth to maintain an economic base of power. Because of the stress on balancing economic and military security and thereby maximizing human wellbeing, Kennedy’s analysis is essentially a utilitarian analysis. The well being of global human populations and the balance of power around the world rests upon the conceptualization of security. Kennedy suggests that the U.S. now faces the reality of imperial overstretch. His analysis points out the need to analyze military issues in conjunction with economic development and environmental issues when considering global security.

*Development Economics on Trial* by Hill (1986) provides a critical view of Western development policies from a holistic orientation. Her observations question the prevailing
assumptions found in neoclassical economic development plans. From the faulty assumptions concerning peasants, to the problems of unsound generalizations, to the nature of inequity, Hill demonstrates the need for a balanced pluralistic approach to development. Hill's also provides an excellent examination of the reliability of official statistics and the benefit cost analysis used to make development decisions. Hill emphasizes the limitations of those statistics and the need for extreme caution in their use. She suggests that the analysis of equity issues in Third World countries rarely involves a complete or balanced perspective and is therefore slanted toward a Western conceptualization of the relationship between poverty, population growth, and equity. Hill demonstrates that utilitarian justice is too complicated for humans, biased toward those who set the standards for assessment, and biased against those without power.

Hill stresses the historical fallacy of the stages of growth model of development and the importance of investigating all factors concerning rural poverty and population growth. Hill states her position concerning Third World development emphatically, but presents little in the way of prescription. Even though the author criticizes the attitude of doomsday economics prevalent in industrialized countries, nothing is offered to provide direction for future development efforts. Regardless of the lack of direction provided by Hill, Development Economics on Trial is a good analysis of the problems with utilitarianism and present conceptions of development.
A Third World perspective of sustainable development is provided by Pimenta (1987) in "Multinational corporations and industrial pollution control in Sao Paulo, Brazil." This author describes the web of relationships and the mixture of federal, state, and local governmental influence that make up environmental and development controversies. Pimenta suggests that the resistance to environmental protection often extends from the attitude that the blame for environmental pollution rests with industrialized nations. This attitude also includes the position that natural resources should be used for industrialization, not for fighting pollution. Because pollution in non-industrialized countries results more from the impact of poverty than industry, the priority should be to remove poverty, not pollution.

Pimenta points out that many multinational corporations don’t follow the pollution standards required of them in their home country, but that MNC’s have a better record regarding pollution control than Brazilian companies. Pimenta stresses that there is a widely held view among political and business leaders in Brazil that pollution abatement procedures will inhibit economic growth. Because economic growth is considered the priority to the leaders of both industrial and non-industrialized nations, the environmental future of Brazil is undoubtedly pollution bound. Pimenta’s description points out how utilitarian calculus is impacted by who does the calculation, what factors are included, and how long a time frame is used to
evaluate utility.

Argyle (1987) assesses the impact of money, class and culture on happiness in *The Psychology of Happiness*. This topic is important to sustainable development with the distinction between wants and needs gaining relevance. Because wants are tied with consumption, resource depletion and environmental pollution become tied with the psychology of fulfillment. Argyle describes evidence illustrating that the impact of money on happiness is decreasing in the U.S. The author found it difficult to find uniform differences in happiness between countries. Several studies identified by Argyle illustrate that internationally there is little difference in happiness, and that happiness is unrelated to economic productivity. Increased GNP per capita is not related to increased happiness. If the egoistic or utilitarian goal of increasing pleasure is the basis of stressing economic growth, national strategies meant to increase GNP are ill founded.

Wenz (1988) describes in *Environmental Justice* the problems of utilitarian ethics and of using benefit-cost analysis for computing efficiency or utility. Wenz describes five weaknesses of utilitarianism. (1) The satisfaction of preference and the maximization of happiness is suspect when many of these preferences are contrived and irrational. (2) Failure to provide direct inclusion of the requirements of non-sentient components of the biosphere. (3) The inability of utilitarianism to adequately handle the relationship between environmental policies
and human population issues. (4) The stress on consequences in utilitarianism conflicts with many conceptions of human rights leading to pronounced inequity. (5) The calculation required in utilitarian theories is well beyond human capability.

Wenz states that Utilitarian theories of justice are biased toward sentient beings. The BCA process is even more biased, according to Wenz, because this process involves an even more selective bias than utilitarianism. The BCA process favors human beings with money, and as a result reflects an effort to justify the inequitable distribution of power both in human societies and the biosphere.

**Human Rights Theory**

The views of Chomsky are provided in a text edited by Peck (1987). *The Chomsky Reader* demonstrates a much different perspective of international relations from those of Hardin (1985). In this volume Chomsky describes the relationship between the U.S. and other nations of the world. Chomsky states that the "meritocracy" is used to justify the racism and ethnocentrism existing in U.S. dealings with other nations. The author finds no basis for this argument, however, and rejects the notion of meritocracy.

Chomsky describes the inability of any theory of justice to encompass all the requisites of justice. These problems are intensified as no clear vision of human nature has been established. Chomsky articulates the problems of distinguishing between equality of rights and equality of condition, but
suggests that in a just society opportunities should correspond with individual needs. Chomsky suggests that it should be possible to align societal needs with the fulfillment of individual opportunity to follow their talents.

Chomsky criticizes U.S. foreign policy as a "crusade against independent development outside the structure of the global system of exploitation organized under the umbrella of U.S. power after World War II." (p. 214) He characterizes the crusade against communism as a smoke screen for U.S. exploitation. Chomsky documents the correlation between human rights abuses, U.S. economic sponsorship, and improved U.S. economic investment climate abroad. He criticizes the military industrial establishment as a threat to world peace and survival for short term economic gain.

Chomsky's documentation and critique of U.S. foreign policy provides insight into the power relations of international politics. Chomsky stresses the importance of trying to decipher questions of fact from judgments involving value and the importance of individual action. Chomsky states,

"We must never forget that what we do is tainted and distorted, inevitably, by the awe of expertise that is induced by social institutions as one device for enforcing passivity and obedience. What we do as scientist, as scholars, as advocates, has consequences. We cannot escape this condition in a society based on concentration of power and privilege. There is a heavy responsibility that the scientist or scholar would not have to bear in a decent society, in which individuals would not relegate to authorities decisions over their lives or their beliefs." (p. 202)
Betraying the National Interest by Lappe, Scherman, and Danaher (1987) is a balanced and well written description of the U.S. foreign aid policies. The authors explain the rhetoric of official aid policies and suggest why U.S. assistance fails to serve the U.S. National interests. Development is defined as a social rather than a technical process through which all people's opportunity to realize their potential is maximized. The authors also stress the need for change allowing all people access to the control of productive sources.

The authors suggest that U.S. citizens must reshape government's definition of the national interest so that the fear of change in Third World countries is alleviated. Unfortunately, the authors don't deliniate a plan for the implementation of this new definition. The book does focus upon hunger and suffering in Third World countries and assesses the U.S. role in maintaining that misery through economic policies focused upon efficiency.

The authors point out the U.S. military's role in selling the American public the importance of security. They suggest that change in foreign governments will promote U.S. security and that influence throughout the world is determined by economic rather than military strength. They also state that the most important contribution the U.S. might make to development efforts is to address the hunger, homelessness and equity issues existing in the U.S. itself. The authors also stress that development, freedom, and democracy can only extend from the people of each nation itself and cannot be imposed externally.
Max-Neef, et al, (1989) provides a description of "Human Scale Development" found in the journal, Development Dialogue. The authors base their theory of development on a theory of needs. They suggest that sociological and economic theories of development are incomplete because these theories don’t recognize the primacy of human needs in the development process. The Max-Neef, et al, theory of development stresses the importance of human dignity and recognizes that humans can’t be treated in development efforts as if they were objects. Their theory represents a needs oriented theory of development based on the intrinsic value of human beings.

The authors explain human needs as an interrelated and non-hierarchial (other than the need for subsistance and survival) system. These authors believe that needs are few, finite, and classifiable. Tradeoffs and variations characterize the nonhierarchial nature of need satisfaction. The authors provide an explanation of their theory with a matrix of needs and satisfiers divided into existential and axiological categories. The authors suggest the following axiological needs require satisfaction: subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom. The existential categories of needs include being, having, doing, and interacting.

Max Neef, et al, suggest the consistancy of needs across cultures and across human history. They suggest that the method used to satisfy those universal needs changes over time and
across cultures. They also state that failure to meet needs results in a poverty. Each poverty then begins to generate a pathology which require attention on a large scale collective basis. The Cold War, for instance, results from a poverty of understanding and identity, which in turn creates a pathology of fear. The arms race grew to satisfy the perceived need for protection. Unfortunately, the arms race negatively affects the satisfaction of subsistence, affection, participation, and freedom needs.

Critical to this needs theory of development is the analysis of need satisfiers. The authors offer five different types: need violators, pseudo satisfiers, inhibiting satisfiers, singual satisfiers, and synergic satisfiers. The authors illustrate these different catagories of satisfiers and suggest that synergic satisfiers most effectively meet human needs.

"Human Scale Development" fails to include appropriate treatment of social and ecological factors although the writers do stress the importance of meaningful work and the reconceptualization of resources. In addition, they fail to provide much in the way of prescription which might facilitate their psychologically based theory. Max-Neef, et al, do provide a sound basis for the explanation of need satisfaction which can be applied across cultures, however. This theory forms an excellent basis for filling the psychological component of sustainable development.
Maslow (1970) also provides a theory of human motivation based upon the satisfaction of human needs. Maslow's popular hierarchial model is described by the author as a "holistic-dynamic theory" (p. 35). The author begins the hierarchy with physiological needs. After people satisfy these basic physiological needs a group of safety needs emerges. Safety needs are followed by belongingness and love needs, which in turn are followed by the need for self-esteem. The hierarchy is completed by the need for self-actualization.

Maslow admits that these needs are often not fixed in the hierarchial structure and suggests possible exceptions. There seem to be more exceptions and complications than Maslow admits, however. The complexity of need satisfaction, the role of affect, and the nature of self, thought, and consciousness makes Maslow's hierarchial model highly suspect. In addition, Maslow's model represents a clear ethnocentric bias in favor of industrialized societies. Industrialized societies exploit their own ecosystems, draw extensively from ancient sources of energy, and maintain exploitive relationships with non-industrialized societies. Because of these factors, industrialized societies are more capable of filling their people's needs at the lower end of Maslow's hierarchy while those people in non-industrialized societies are kept in relationships which hinder the fulfillment of basic needs. These relationships allow more people in industrialized societies to eventually fill the need for self actualization. Therefore, industrialized societies are superior
to non-industrialized societies because more of their people are self actualized. This conception of motivation and need satisfaction is incomplete and incompatible with the conception of sustainable development.

Charlton (1984) stresses the intrinsic value of human beings and the relevance of the inequitable status of women at all levels of societal organization. Charlton describes in *Women in Third World Development* the historical patterns of inequality found in women's productive and reproductive roles. The author stresses that without recognition of an action regarding the inferior status of women around the world development efforts are doomed to fail. Charlton stresses the inherent value of all people and offers several guidelines for the development process suggesting that development must: be based upon human needs; grow internally from within the society by basing change on indigenous concepts as opposed to Western values; represent the priorities of men, women, and children; involve change in institutional structures to allow women a political voice; reverse militarization and authoritarian efforts to repress freedom; and be in harmony with the natural environment.

Weigel (1989) provides a theory of development based on human needs and the philosophical justification of those needs in *A Unified Theory of Global Development*. Weigel suggests that a the conception of development is justified by a universal moral principle which is founded upon genetic concepts of life. Weigel states that development is required because "all human beings
have the right to meet their basic needs." (p. 79) These rights to development are extended by Weigel to an imperative in which humans should "act in accord with the basic needs of other human beings as well as yourself." (p. 80)

Weigel's description of basic needs illuminates the problems of specifying a needs approach to development. Although these problems are solvable, the complexity of a needs approach demonstrates how little we know about human nature and how we ought to manage our existence. Weigel's model does represent an impressive attempt to ground development on a foundation of psychological, philosophical, and genetic knowledge. As Weigel states,

"Tragically man's technological achievements have far outstripped his meager accomplishments in moral and social progress. Morally speaking, humanity is just ahead of the discovery of fire. Not only is the world's current repertoire of institutional machinery ill-equipped to respond decisively and creatively to the planetary problems facing the human community, but also our extant stock of moral, economic, and political ideas is deficient in many respects." (p. 1)

Summary

This section of the literature review demonstrates the complexity of issues pertaining to equity between nations. Understanding the relationships between nations involves an assessment of power and control. The U.S. presently makes its policy concerning international sustainable development behind the veil of secrecy and mystification following libertarian, virtue, and efficiency theories and rhetoric.
The result of the mystification of policy is the promotion of elite control of existing institutions which dictate policy on economic matters to the benefit of multinational corporations and banking conglomerates. Policy makers in industrialized nations seek to maintain the hegemonic control of international development and environmental policy. This control is sought through the collaboration of business and government with the goal of minimizing the impact of environmental regulation on corporate profit and economic growth.

The detrimental impact of military spending and action is a reoccurring theme in this literature while many of the authors stress the coercion required to maintain dominance in global affairs. This coercion goes beyond the use of military power and includes the power relations inherent to economic arrangements between nations. These relationships suggest the coercion of structural adjustment often included in international aid and debt service, trade agreements, and technology transfer. Control of information plays a critical role in the coercion which occurs between nations. Understanding the factors which impact the distribution and maintainance of power is essential to understanding equity issues between nations.

Equity Within Nations

In this section authors concerned with equity within nations are reviewed. Although these authors focus on different social, economic, political, and environmental issues, they express a common thread by describing the complexity of development and
environmental problems and the importance of power relationships. For this reason the first portion of the review of equity within nations covers writers concentrating on power relationships. In the second portion of this section I review authors expressing the various theories of justice as they pertain to equity within nations. There could be a strong case made for the disintegration of national boundaries because of the influence of multinational corporations, global communication networks, and trade agreements. However, there is still a significant influence exerted upon local relationships by organization at national levels.

The Role of Power Relationships in Development

In "Thinking Politically About Development" found in the journal Development and Change, Goldsworthy (1988) suggests that a great deal of development theory is politically uninformed as it often lacks an understanding of the power relationships. He states that political analysis is rarely an integral part of development considerations. Consideration is rare in development concerning: who benefits? who pays? who decides? and who wins? As a result the privilege associated with position and power remain unchallenged.

Goldsworthy stresses that people who are concerned with development often lack political mindedness regarding the interests, values, and power relations of people. He states that no one could be against development but understanding interests, values, and power relationships changes the realities of
Goldsworthy explains development as a concept "which combines the moral with the material" (p. 507). He suggests that development in practice involves a zero-sum game in which focus upon one set of goals comes at the expense of the fulfillment of other goals. Goldsworthy stresses the importance of power in development as he describes the benefits of development efforts typically being distributed to those in power. Development is typically a matter of power relationships: force-persuasion, conflict-cooperation, stalemate-compromise, factionalism-class struggle. He states that the outcome of development is the result of how political power relationships are established and used. Goldsworthy describes development decisions as being orientated toward one of these power rationalities and a causitive factor in development failures. The author stresses that the importance of political mindedness in development is first to create a sense of hope and then to build power.

Goldsworthy's writing is important to this study of sustainable development in schools as the issues involved with both sustainable development and teaching may be ethical, but the realities are political. Without political mindedness, power relationships will not be used in plans to implement the changes toward equity at the different levels of sustainable development.

Burbules (1986) analyzes the web of power relations found in the U.S. education system in "A Theory of Power in Education." The author suggests that schools create and perpetuate power
relationships, but also have the potential for transforming these relationships. Power relations are described as beginning with a state of conflicting interests and are important as these relations "suppress, disguise, preserve, or deny conflicts of interests." (p. 98)

Burbules describes domination, compliance, resistance, and acquiescence as relevant factors in conflicts of interests. The author describes force as self-defeating action which often generates resistance and destroys even minimal compliance. Because power relations must result in compliance, relationships involving coercion, consent, and the territory between these two concepts must be understood. Burbules describes relationships involving conflicts of interests ranging from coercion to consent, but stresses that power relies upon compliance rather than either coercion or consent. The author also stresses that we not only use power, but power uses us.

Burbules goes from a general theoretical description of power relationships to the involvement of power in schools. The author describes the use of hierarchy and authority in schools, suggesting that teachers, as well as students, are victims of power struggles. Because power relations are often hidden in our culture behind veils of complexity and subtlety, schools serve as an instrument through which a hidden agenda of the meritocracy is imprinted upon our young.

Burbules concludes that schools are powerful actors in U.S. power relations. Although we may move toward more democratic and
power free educational processes, schools may play only a limited role in altering the conflict of interests that provide the underpinning of power, domination, and control permeating our world. Burbules believes that this limited role as an institution of change results from the extensive function schools play in sustaining power relationships within our society.

Foucault (1979) provides insight into the nature of power and discipline in *Discipline and Punish*. Foucault demonstrates how the penal system has evolved into a system of control used to perpetuate the locus of societal control. The control over people’s bodies found in industrial societies demonstrates the web of power relationships in a society. According to Foucault an individual is valuable in an industrial society only if they are productive and controlled. Present societies use the structure and discipline of prisons, hospitals, schools, and asylums to subject people to the ruling required of coercive power relationships. Foucault describes these institutions as instruments in the "technology of power." (p. 30)

Foucault stresses the importance of the knowledge - power relationship stating that power implies knowledge and that knowledge is only produced through power. Discipline is described as a means to control the ranking of individuals. Foucault further describes testing procedures in schools as rituals of discipline allowing for judgement and ranking in a "ceremony of power." (p. 184) Foucault states that the disciplinary system used by a society legitimizes the power to
punish and control. It is from this system that people are rendered productive and useful servants to the people found at the upper levels of the power hierarchy.

Beninger (1986) describes the role of controlling information as a means of maintaining societal cohesion in *The Control Revolution*. The author demonstrates through historical analysis the primacy of information processing and dissemination, in controlling all facets of human behavior. Beninger's writing illustrates that those controlling information are in the most effective position to control human social behavior.

Collard (1989) describes the impact of patriarchial societal organization on women, animals, and the environment in *Rape of the Wild*. Collard presents an argument which emphasizes the split between the realities and mentalities of men and women. Collard believes that man has separated himself from women, animals, and nature by means of a hierarchy of power. Man's ability to respond (responsibility) is shrouded in the web of power expressed through rights, privilege, and obligation. As a result, Collard believes that the communal needs of people to belong to nature is replaced by symbols of ownership and power. These patriarchial symbols serve to further alienate man and nature creating a lonely, isolated, and meaningless existence.

Collard believes that man must overcome the domination of rationalization and become receptive to the relationships which connect rather than separate the self with nature. Collard suggests that nature apart from human culture is meaningless, but
the union and responsibility of self to nature and community is constructive and meaningful.

Ellul's (1965) *Propaganda* with the subtitle "The Formation of Men's Attitudes" describes the importance of propaganda in focusing societal action. Ellul stresses that education is the preparation society affords its members to receive the facts needed to become "educated." Education is viewed by Ellul as indispensable to the propaganda which perpetuates the world view required of a technological society.

Ellul describes propaganda as the composite of all the forces that impact an individual. These forces include newspapers, magazines, radio, television, film, and posters. Forces also include most societal institutions: schools, hospitals, police, and most government agencies and organizations. Ellul states that this propaganda is not a single event, but a long steady flow of messages directed at specific action. Propaganda surrounds the individual until all needs, feelings, consciousness, and ideas are consistent with the message. Eventually, the message of propaganda is not challenged, but internalized and seeming natural to the affected people. This cultural submission into a technocratic mentality in consistent with the hidden and covert dimension of culture described by Hall, E. (1976) in *Beyond Culture*.

Weber (1946) provides a classical paper analyzing the power relationships inherent to bureaucratic organization in "Essay on Bureaucracy." In this essay Weber describes the technical
superiority of organization as a machine which aids the production process. The author then describes the persistence of the bureaucratic hierarchy as the organization seems to take on a life of its own. Weber stresses the control which bureaucratic structures maintain over communication, making structural change tough. The power inherent to the "official secret" illustrates the control which bureaucratic organizations have over change. Weber's analysis still holds today and provides an excellent picture of power of bureaucratic structures.

In *Who Rules America Now* Domhoff (1983) describes how a ruling class in the U.S. controls the economy and government. Domhoff believes that the social mobility that is part of the American Dream is possible, but less than probable. Domhoff suggests that the lower classes in the U.S. are not powerless, but that the top .5% of the U.S. upper class has the means to dominate the relationships through which lower class people must operate.

Domhoff describes indicators of elite power: Who benefits? Who governs? Who wins? This analysis suggests that politics in the U.S. at all levels of organization is essentially business. Property based theories of justice maintain the balance of power in which the elite benefit and win most issues.

Edsall (1984) describes the shift of U.S. power in *The New Politics of Inequity*. Edsall analyzes U.S. economic and political policies illustrating the increasing concentration of power in the hands of the affluent. The author describes the
organization of Republican and Democratic parties, the influence of business interests in politics, and changes in labor unions. He suggests that changes in U.S. democratic policies have resulted in policy changes benefiting the affluent.

Edsall states that even if the Democratic Party were to gain control of the presidency, change in distributional policies might not result. The Republican advantage results from clear definition of its agenda, skewed voting turnouts, and well organized and controlled campaign donations. Edsall believes that power is heavily skewed toward those with economic power with national policies favoring the affluent. Changes in the political party controlling the Federal Government will have no impact upon national economic policy unless there is a decoupling of economic and political power.

Lapham (1988) describes the poverty and pathology of wealth in American life in *Money and Class In America*. Lapham describes U.S. popular culture where heroes operate in a moral wilderness demonstrating their individualism, superior work ethic, and superior intelligence as they fight "the system." Freedom is characterized as the freedom to exploit while societal problems such as poverty and racism are view from a meritocratic "blame the victim" mentality. Lapham believes that faith in money inhibits any change in the U.S. system of justice which is described as being based upon power and privilege. Redistribution of wealth is limited, according to Lapham, because of a religious like devotion to wealth and position.
Milbrath (1989) describes societal power relationships as a part of *Envisioning a Sustainable Society*. This author examines problems with the belief that the market will solve societal problems, and problems with growth as the primary societal goal. Milbrath examines values and learning demonstrating the impact of the dominant social paradigm on social learning. The author also analyzes the relationship of societal power on the individual, society, and the environment. Milbrath suggests that the way to become an ecologically sustainable society is to learn new values and form new individual and societal goals. Understanding how power perpetuates itself and the role of societal institutions in those power relations is the first step toward learning the way to becoming a sustainable society.

Manes (1990) argues for the dismantling of industrial society in *Green Rage*. Manes describes the growth of the radical environmental movement and defends the civil disobedience encouraged by that movement. The author stresses that all of the assumptions of appropriate technology demand that human societies maintain the domination of nature. Manes criticizes our industrial technocratic society with the following paradox.

"The paradox of anthropocentrism is that a world conceived of only with human ends in mind seems destined to become inhospitable to any human ends in the long run." (p. 142)

Manes goes on to criticize mainstream environmentalism as collaborators in the military industrial organization's exploitation of the natural world. He suggests that if our present industrial society is unsustainable, the actions of
radical environmentalists offer the only appropriate direction for future human societal direction.

Fromm (1981) provides a similar message in an essay entitled, "Disobedience as a Psychological and Moral Problem." Fromm examines the dialectical nature of obedience and disobedience suggesting that saying "no" to the power structure that envelops us is the essence of freedom. Fromm closes the essay by stating,

"The organization man has lost the capacity to disobey, he is not even aware of the fact that he obeys. At this point in history the capacity to doubt, to criticize and to disobey may be all that stands between a future for mankind and the end of civilization." (p.23)

**Virtue Theory**

*Equality* written by Ryan, W. (1981) is an analysis of the inequality existing within the United States. Ryan states that the emphasis upon equality of opportunity in the U.S. serves to perpetuate the inequality found in this country. He describes how equality of opportunity and a fair play mentality is a method of sorting classes of people into various levels of superiority and inferiority. This system serves to justify and institutionalize the inequality found in our society.

Ryan uses many examples from schools to point out the differences between a fair play and a fair share system of sharing. He exposes the principle of merit as a method of power used to maintain the class system found in the United States. The extreme distributional inequities existing in the U.S. are justified by this meritocracy while the image of the U.S. as the
land of opportunity is perpetuated. Ryan provides evidence demonstrating the overall lack of social mobility in the U.S. and the maintenance of merit because of inherited position.

Ryan's fair play and fair shares analysis also explains the lack of equity which exists between nations and between species. He argues that although changes in equality are complex, these changes are not as foreign to the U.S. world view and ethical system as the proponents of equal opportunity would suggest.

Bell (1973) endorses the tenets of the meritocracy in The Coming of Post-Industrial Society. Bell calls for a "just meritocracy" in which different types of inequality are of critical importance. Bell characterizes criticism of merit as,

"not being for fairness, but against elitism; its impulse is not justice but resentment. The populists are for power (to the people) but against authority - the authority represented in the superior competence of individuals. Since they lack authority, they want power." (p. 453)

Bell states that the problems facing humans in the future concern standards of living. The author believes that the issues facing humans are no longer biological, but sociological; not subsistence related, but related to levels of consumption. Bell believes that information is the key to solving these sociological issues.

White, J.K. (1988) describes the importance of the values of the meritocracy to presidential politics. In The New Politics of Old Values White stresses the need for politicians to project themselves in terms of values that make the voters believe that the politician is one of us. White describes the stories told by
Reagan which created an ethos of supremacy of the American way of life. He communicated images of family, neighborhood, peace, and freedom yet directed government and the U.S. toward policies that benefited the rich. Middle and lower class families and neighborhoods were hurt by many of Reagan’s policies as funding was taken from social programs while military spending was greatly increased.

White stresses that Reagan’s political success was founded upon his ability to sell the U.S. public to the illusion of the meritocratic values inherent to the American Dream. The illusion of opportunity was expressed by Reagan as he perpetuated the meritocratic myth. Reagan often reminded the electorate that he was a product of the meritocracy as he started working as a lifeguard earning $15 per week. Reagan’s success as a communicator lay in his ability to inspire confidence in the greatness and correctness of the American way of life. White provides an account of the dominance of virtue conceptions of justice in the U.S. today.

Newman (1988) describes the impact of meritocratic values on the downward economic spiral affecting many middle class Americans in *Falling From Grace*. Newman presents another facet of a virtue theory of justice. Social Darwinism is used to justify the position of those at the top of the U.S. management system. Newman illustrates how Americans hold the belief that one’s occupation is a symbol of self worth, people get the rewards they deserve, and that an individual is the master of
their own destiny. Because virtue justice is so deeply ingrained in the American psyche, downwardly mobile middle class members believe they are deserving of their fate. Social identity is so embedded in the meritocracy that not only does virtue theory result in blaming the victim, but the victims often blame themselves.

In *Labour Pains and Labour Power* Jeffery, Jeffery, and Lyon (1989) describe the realities of women and child rearing in India. The authors depict a gloomy picture of women’s powerlessness in their reproductive and productive roles. Women in India are constrained by patterns of land holding, employment, access to property, kinship systems, education systems, and marriage and family traditions. Unfortunately, this systemized degradation exemplifies the power of virtue oriented justice. The Indian women described by the authors are ashamed of their position, work, and their sexuality. Feelings of shame are an unstable basis for action that would lead to development.

The realities of improving the position of women in India are described by the authors as bleak. Present government policies often are ineffective and often create more exploitation of the rural poor than the policies they replace. The authors offer little in the way of implementing strategies which might help create more equity at local and regional levels. They do offer evidence of some change, but are generally very pessimistic concerning the possibilities of women in rural India.
Libertarian Theory

Libertarian economic theory of justice is demonstrated by Friedman, M. and Friedman, R. (1979) in Free To Choose. The Friedmans stress the importance of the free market to the extension of prosperity and liberty. The authors believe that restrictions in economic freedom eventually will lead to less general freedom. The authors recognize that some restrictions on individual liberties must occur because of our interdependence, but they believe that the role of government must be limited. For the Friedmans government should provide security from the coercion of other nations, stabilize the rules and medium of exchange, and protect children and the mentally incapacitated as well as provide community services such as streets and sewers. User fees and compensation stipends should be applied, according to the authors, to those involved for the purpose of lessening government involvement.

The Friedmans believe that inequality of outcome is necessary in the name of liberty. The use of coercion to achieve equality will result in the concentration of power in the hands of a few who will use that power for their own ends. The authors state that more freedom will eventually lead to more equality as freedom also means diversity and mobility.

Albeldo, et al, (1988) attack the supply side and libertarian economic policies of the Reagan administration in Mink Coats Don’t Trickle Down. Although the authors attack the libertarian theory of justice, the assumptions and theory behind
libertarianism are simply and effectively explained. Albeldo, et al, describe the growing gap between the rich and poor in the U.S. and stress the declining social status of women and minorities. The intrinsic value of all U.S. citizens is stressed through the descriptions of the weaknesses of libertarian, meritocratic, and paternalistic conceptions of justice. The military establishment is described as draining resources from the lower and middle classes while the benefit from military production serve to maintain the social status of upperclass males. The authors parallel a libertarian position calling for the increased obligation by those in power to remove the privilege of position, and the lack of opportunity that plagues the underclasses. The authors move well away from libertarian doctrine in prescription, however:

"Without active government intervention in markets to combat discrimination, without the recognition of childraising as socially valued work worthy of social remuneration, and without the establishment of an adequate income floor, the freedom to choose will remain an illusion for most - and for many, an impoverished freedom." (p. 54)

**Efficiency Theory**

Thurow (1980) describes distributive issues concerning economic and environmental benefits and burdens in *The Zero Sum Society*. The author observes that environmentalists are typically members of the upper middle class because the poor are simply not interested. Thurow states that lower income groups are not concerned with environmental problems because they have far more immediate and pressing problems while people with high incomes can afford to avoid environmental problems.
Thurow incorrectly states,

"environmentalism is not ethical values pitted against
economic values. It is simply a case where a particular
segment of the income distribution wants some economic good
and services (a clean environment) that cannot be achieved
without collective action." (p. 105)

Both environmental and economic values have ethical orientation
and are inseparable in theories of justice. Thurow's statements
overemphasizes an anthropocentric conceptualization of the
environment and the dominance of efficiency/property rights
type of justice. The author errors in considering the
environment "simply" an economic good or service as the
environment defies quantification and simplification. The
assumption of insatiable human desires makes Thurow’s theories,
untenable for sustainable development, but attractive in a world
view dominated by technocratic and economic orientation.

Thurow criticizes "small is beautiful" philosophy and zero
economic growth because it does not fit the insatiable nature of
human beings. Thurow contradicts himself regarding the
insatiable nature of man, however, by suggesting that people with
less economically don’t want more, but parity.

**Human Rights Theory**

*In a Different Voice* by Gilligan (1982) is an important book
concerning the differences between men and women. Gilligan
analyzes moral development of men and women suggesting that great
differences exist within our culture concerning moral
development. These differences have great significance in how we
view relationships between people within the U.S., between
nations, species, and generations. She suggests that the universal acceptance of Kohlberg's moral development theory is based upon research with sexual bias, and therefore inapplicable and unacceptable to the moral development of women.

Gilligan's research is important to sustainable development because it raises the question of whether we should view moral development and environmental ethics from a male rights orientation, or a female orientation which focuses more upon relationships. Gilligan's research is also important because of the inequality women face in U.S. culture. She demonstrates the male bias in the ethical decision making process found in the U.S. concerning environmental and development decisions. Because of male dominance in the economic and political decision making processes within the U.S., Gilligan's research explains the rights orientation of equity decisions concerning development and the environment. Her research also suggests a reason why ecological relationships are placed in a secondary position when making moral decisions concerning the environment.

The politics of population control are discussed in Reproductive Rights and Wrongs, by Hartmann (1987). Hartman describes the real problems facing rural people in Third World countries as not being food scarcity, but land and income distribution. She states emphatically that: (1) Rapid population growth is not the cause of development problems in the Third World - it is a symptom of development problems, (2) Equitable economic and social improvements that lead to improving the
quality of life and the position of women will provide the motivation for people to desire fewer children. (3) Health and safety of women and children should be the primary concern of development efforts. Popular health care systems should develop and promote programs involving birth control which stress safety.

Hartmann describes the marginalization of women as a part of economic powerlessness which is rooted in patriarchal cultures and religious teachings. Children become the woman’s only source of power, pride, and self respect in the patriarchal family structure so prevalent throughout the world. Most cultures require the wife to have male consent before using and fertility control procedures, for instance. The male dominated church often outlaws abortion and frowns upon anything but “natural” fertility control. In addition, most religions place the ideal woman on a pedestal not available to real working women.

Hartmann uses case studies of attempts at population control. She attacks the population control establishment and criticizes the U.S. reproductive policies in the Third World as hypocritical and immoral. Hartman suggests including birth control into an expanding circle of health care which provides not only family planning programs, but infant wellness. She stresses the importance of improvements in the general well being of communities. She also suggests that movements for reproductive rights are generally in trouble if they operate in isolation form the general well being of women, families, and communities.
Hartmann's book is a well written criticism of the hypocrisy and immorality of reproductive control and the danger of Westernized conceptions of the "population bomb." Little is offered by Hartmann regarding the implementation of her ideas.

The United Nations Children's Fund (UNICEF, 1989) describes the burdens born by women and children because of debt and poverty in The State Of The World's Children. The authors provide statistics and interpretation which depict women and children as the poorest of the poor. The authors suggest a need to reorient development aid with the purpose of helping the world's poorest 40% of mankind. As the authors suggest,

"The persistence of poverty on this planet is ultimately inseparable from the issues of violence, instability, and environmental deterioration which affect us all and will increasingly as we move towards the opening of a new millenium." (p. 71)

The UNICEF Report states that meeting the essential needs of the world's children and the families which support them is the key to prosperity. The authors believe that political stability ultimately depends upon meeting these essential needs while maintaining the integrity of the environment will be impossible without meeting the needs of women and children.

Copeland (1988) compares and contrasts the theories of Lester Thurow, Milton Friedman, and Michael Harrington to create a description of humanistic ethics in Economic Justice. Copeland demonstrates through the analysis of liberty, equality, and solidarity the need for balance. Copeland believes that these three principles form the guiding principles from which justice
may be found. These principles are considered by Copeland as consistent with the experiences and needs of human beings.

Copeland believes that presently in the U.S. liberty dominates human relationships and the balance that would improve the human condition is lost. Copeland believes that through self-transcendence the three components of justice are mutually supportive. Copeland concludes,

"If liberty refers to my capacity to be creative, it requires other humans equally free who are able to receive and appreciate that creativity and a community which provides a place and the means for the expression of that creativity. Similarly, true pluralistic equality can occur only among people who are free to be unique, or equality becomes sameness. Such equality also requires a community where creativity can be shared. Finally, to be fully human solidarity must be built by free people working together not by smothering individuality and undermining honest interchange. (p. 116)

Harrington (1986) provides a view of economic justice from a social democratic perspective in *The Next Left The History of A Future*. Harrington states that the supplyside and libertarian economic policies of the Reagan Administration will provide the excesses in distribution that will trigger a demand for justice by the U.S. public. Harrington believes that present U.S. economic problems will provide the chance for the Left to create opportunities for equality by reorganizing the institutions and structures of society in a participatory democracy.

Harrington describes the success of Fordism in combining economic efficiency with equality and suggests that democracy is the next step toward justice. Harrington stresses full employment and a move beyond the meritocratic conception of
personal and social value being derived by occupation, position, and salary. Harrington believes that work requires redefinition and that employment, wages, production, and competitiveness can't be considered in isolation. Harrington believes the increased production and product quality requires worker and community involvement in the decision making process. Because of the ethical nature of technology, decisions concerning technology should require employee participation. The hierarchial and oppressive nature of bureaucracy should be challenged by government financial support and information afforded to all those who would challenge the system.

Harrington believes that a progressive tax structure is a requirement for justice. The author emphasizes that the democratization of the U.S. economy and progressive tax policies will shift the balance of power in the United States. Harrington stresses the solidarity of individuals sharing decisions and community through which equality will be enhanced. Harrington believes that the real issues concerning justice are not between individual and community, but concern who makes the decisions.

Ecocentric Theory

Wilkinson (1973) offers an ecological perspective on development by suggesting the ecological roots of development in Poverty and Progress. The author responded to the macro economic development theories which stress innovation as being in direct relation to the application of capital and growing income with an ecological model of development. The Wilkinson model suggests
that development comes from attempts to increase the output from the land in response to poverty and ecological disequilibrium and not from capital influx or plenty. The need to increase output results from the resource base and system of societal production being outgrown by human society.

When a society’s needs are not met the people will be motivated and receptive to changes in their production and organization. If the members of a society feel no strain in meeting their subsistence needs, the society will resist change regardless of capital input or available technology.

One of the most alluring features of Wilkinson’s theory of development involves its removal of the ethnocentrism and patronization typical of present efficiency and virtue orientated development theories and the programs extending from them. Also attractive is the recognition that progress doesn’t necessarily mean adopting an industrialized life style. Societal progress is essentially viewed as movement toward ecological equilibrium and stability. Why should a society change if their needs are being met? Wilkinson’s ecological model suggests that there is nothing inherently superior about industrialization. A change in the mode of production chosen by a society results from ecological disequilibrium which is no longer acceptable to that society. In other words, development is seen as an adaptive process caused by ecological circumstances, not a march of superior more efficient humans showing lesser beings the way to a superior way of life.
In Wilkinson's ecological model, the economy a society chooses evolves through a series of adaptations designed to meet the ecological relationships facing a society. All societies are similar in that they seek adaptations which will move them toward equilibrium, but differ in their responses to different environmental stimuli. The ultimate goal is control leading to ecological equilibrium, not increased GNP, material well being, or military prowess.

Wilkinson uses ecological concepts such as niche to explain cultural change, suggesting that cultural change provides a means of changing from one niche to another. Human societies will respond to ecological problems by limiting population or changing resource use patterns to achieve equilibrium. When disequilibrium becomes unacceptable because of ineffective population control or excessive resource exploitation, the society will find the motivation to change its organization to better exploit its ecological circumstances using an adaptation process to attempt to find an equilibrium within its niche. Carrying capacity is critical to this concept of ecological equilibrium. Human populations use such methods as bride price, abortion, migration control, extension of breast feeding for young, infanticide, and sterilization to inhibit population and limit pressure on the resources available to them. In addition, human populations often impose taboos in resource use and exploitation through cultural teaching or religion resulting in the conservation of valuable resources. These methods are part
of the adaptation process a society employs in an attempt to achieve an equilibrium state within its ecological niche.

One of the major points stressed by Wilkinson is that ecological equilibrium is a primary requirement of cultural stability. He also suggests that the accumulation of surplus stressed by many industrialized societies is a sign of scarcity, not plenty. From an ecological perspective, this emphasis upon accumulation and capital surplus suggests a societal system in disequilibrium, and a society which is not effectively meeting the subsistence needs of its members.

Wilkinson also states the importance of equity in the distribution of food and other necessities fulfilling basic needs when faced with ecological problems. He suggests that societies stressing equity in fulfilling basic needs are more stable and are closer to ecological equilibrium within the niche they inhabit. In addition, he states that the restrictions a society imposes to obtain equity are always moral in nature. These restrictions point out the need to consider ecological problems, social organization, and economic responses simultaneously.

Wilkinson offers empirical data to prove that disequilibrium provides the stimulus to develop and uses both British and U.S. case studies to explain his thesis. He then turns to the lumpy nature of technology and compares efficiency and exploitation from an ecological perspective.

A problem with Wilkinson's writing is his confusion of the terms underdeveloped and developed to mean something different
than his initial definition. As a result, his use of these words, critical to his analysis, are inconsistent and confusing. Wilkinson also fails to stress the importance of colonial exploitation and global ecological relationships so important to industrialization in Great Britain and the U.S. In addition, Wilkinson lacks analysis of the psychological factors affecting societal change with the psychological impact of poverty and affluence not well established.

Although Poverty and Progress was not widely accepted in development theory, Wilkinson’s analysis is consistent with an ecological perception forming the ethical foundation of sustainable development. Most people in the 1970’s concerned with development were following the stages of growth model with progress initiated through capital investment. Other theorists concentrated on the political economy approach involving geographic and neocolonial economic relationships. This political economy approach stresses the inequities inherent to colonial and neocolonial state relations and often follow a neo-Marxist analysis scheme. Ecological analysis of change in human societies was certainly not in vogue. However, Wilkinson’s model does provide a perceptive theoretical basis for sustainable development. This model avoids an overly ecological deterministic criticism by stressing cultural uniqueness in their moral responses to ecological problems. Societies differ in responses to environmental problems, but the ultimate cause is
constant, as is the ultimate goal of internal societal stability.

Sale (1985) presents a bioregional argument for a new paradigm in *Dwellers In The Land*. Sale states that ethical positions concerning the environment are not needed. The author believes environmental issues are not issues of morality, but issues of scale. Sale states that there is no way to teach a moral point of view, suggesting that people will act correctly only when they understand their direct connections to the problem. This connection, Sale believes, only occurs when scale is limited. The author states that people will take the correct environmental action when that action is practical not when they believe the action is the moral thing to do. Sale is correctly pointing out the importance of relevance and attention as motivational factors involved with action. To state that morality can't be taught, however, is to suggest that morality is simply a function of biological imprinting, or that morality is totally relativistic.

Sale accepts the different political forms a bioregional paradigm might bring. The author is inconsistent on this point, however. If humans will act correctly when it is practical to do so, the system of social organization should correspond to the practical needs of the people. It follows that if equality, liberty, and democracy are practical to humans; political and economic organization should extend those principles to the members of society. If the principles of economic cooperation,
political complementarity and diversity, and societal symbiosis are to be practical to humans living in a bioregional paradigm, balancing the principles of equality, liberty, and democracy will be of the greatest practical importance to humans.

In *Ecological Revolutions* Merchant (1989) describes the relationship between consciousness and nature. Her historical analysis investigates the changes in human associations with the land in New England. She explains the transformation process through the varying tension which exists within a society and between a society and the environment. She stresses the importance of both societal production and reproduction providing special attention to women's role in societal relations. Merchant states that ecological revolutions "are processes through with societies change their relationship to nature." (p. 23). She suggests that these changes arise because of problems between production and ecological systems and between production and reproduction.

Merchant emphasizes that consciousness weighs heavily in the power structure that sustains both culture and a society's relationship with the environment. Major changes in societal reproduction, production, ecology, and consciousness greatly affect each other causing profound impact upon human behavior and a changed relationship between human beings and the earth.

The author suggests that an ecological world view consistent with sustainable development concepts would involve profound changes in societal production and reproduction. These changes
involve a different orientation from the capitalistic, mechanistic, and patriarchal relationships which now exist. She views an ecological model of development as placing humans as active participators in the web of relationships which make up their existence. Through processes involving both culture and nature, human beings neither dominate nor are dominated in Merchant’s conceptualization of an ecological world view.

Merchant uses a historical description of changes which occurred in the New England landscape between 1600 and 1860 to explain ecological revolutions. She describes the changes in the human societies subsisting in this area to demonstrate the impact of production, reproduction, ecology, and consciousness. Merchant describes Native American, pre-industrial, and industrial society’s relationship with the New England landscape to provide insight into the direction of possible futures.

Merchant often leaves the ecological agenda to describe the role of women in the change process. Her treatment of women’s role adds strength to her analysis because the importance of women to societal production and reproduction is typically overlooked in the process of societal change.

Another positive concerning Merchant’s approach is a holistic orientation which includes sociological, economic, and ecological factors that determine societal choice. The stress on societal consciousness in a reciprocal relationship with ecological determinants represents an understanding of societal change which fits with the concept of sustainable development.
This approach represents a more appropriate analysis than strictly environmental or economic determinism. Merchant suggests that the global ecological crisis may provide the attention and relevance required to motivate societies to change toward sustainability. She stresses the importance of a switch to an ecocentric world view and ethic from the present mechanistic, atomistic consciousness. Merchant’s analysis of ecological changes illustrates the need for mutual obligation and recognition of holistic relationships.

Contrary to Merchant’s representation, mutual obligation and holistic relationships are already part of our system of morality. This part of our ethical system is not emphasized, however. Even if an ecocentric orientation became dominant in our system of ethics, ecocentrism will find itself layered in a system of ethics with the anthropocentric, egocentric, and meritocratic systems which now predominate. Merchant concludes with the hope for a global ecological revolution which would change societal production, reproduction and consciousness toward a sustainable relationship with the earth. She states that the signs of ecological change in that direction might be happening. Unfortunately, she fails to provide much direction for future change because present conditions in New England are ignored. The historical interpretation Merchant provides, however, is an excellent description of the social and ecological changes involving the New England landscape. Her descriptions give insight into the changes which will be required for an ecological
model for development to succeed.

Gardner and Roseland (1989) provide an outline for community strategies for equitable sustainable development in the second part of their article "Thinking Globally and Acting Locally Part II" found in the journal, Alternatives. The author's suggest that transformation in life styles and ethical decision making is required at four levels: (1) meeting human needs, (2) maintaining ecological integrity, (3) allowing social self-determination unrestricted by the militarism found in authoritarian nations or the covert media control promoting overconsumptive behaviors in industrialized nations, and (4) equity both between present and future generations.

Roseland and Gardner suggest that the institutional, top down interpretations of sustainable development often neglect fundamental elements of sustainable development. Most prominent of these neglected elements are the principles of equity and self determination.

Summary

The review of authors concerned with equity issues within nations suggests the importance of power relationships. Because western societies have an orientation of economic growth, the importance of dominance, societal coercion, and control can't be overstated. The implementation of sustainable development will involve overcoming the institutional resistance that maintains a culture of consumption. The bureaucratic nature of these institutions insulates them from different ways of knowing and
serves to maintain the status quo.

Change in societal organization is a difficult, but not insurmountable challenge. Understanding power relationships which underpin Western industrialized society represents a first step in the change process. The structure maintaining the subserviant role of women must be analyzed, growing inequality between upper and lower classes assessed, and the transfer of culture based upon consumption critiqued before change toward a sustainable society is possible.

Policy must play an important role in the change toward a sustainable society. Overemphasis upon one policy option will not provide the changes required. In addition, understanding the goals of policy and the political assumptions which form the foundation of those goals require careful analysis. Equity within nations through sustainable development will require changes in societal goals, ways of understanding our world, and our ethical decision making.

**Equity Between Humans And Other Species**

This section of the literature review describes the relationships between humans and other living entities. I begin with a review of several authors who document these relationships and are concerned with habitat destruction and species extinction or endangerment. In the second part of this section, I examine some of the philosophical arguments concerning the treatment of animals and the environment. Animal rights, utilitarian, biocentric individualism, ecocentric holism, and pluralistic
theories are included in the review. The literature concerning policy and equity between species is reviewed in the third portion of this section. The section ends with a summary of the implications of equity between species on the concept of sustainable development.

This portion of the literature review covers utilitarian, animal rights, biocentric individualism, ecocentric holism, and pluralistic theories as applied to equity issues between humans and other species.

**Human Rights Theory**

The authors endorsing a human rights position when considering the relationships between humans and other species typically view other species as having instrumental value. Authors in this category might be classified as ethical humanists as other species are not viewed as deserving moral consideration, yet must be treated in a humane fashion (Callicott, 1986). Kant believed that animals should not be treated as ends in themselves, but that inhumane treatment of animals would lessen the virtue of humans (Wenz, 1988). Authors in this category would typically stress stewardship as humane treatment is extended to the natural world.

Passmore (1974) was the first author to detail in book length detail the current debate over the rights of nature and other species. In *Man's Responsibility For Nature: Ecological Problems and Western Traditions*, Passmore stated that the principles expoused by animal rights ethicists and the followers
of Leopold's (1966) land ethic were inconsistent with Western ethical traditions and a Western world view. Passmore's book was the first to challenge the appropriateness of applied environmental ethics. Passmore states that any ethic must extend from existing attitudes found in human culture. The author stresses the primacy of man's dominion over nature in Western cultures and minimizes the importance of environmental ethics in Western philosophical debate.

Hargrove (1989) investigates the historical roots of environmental ethics in *Foundations of Environmental Ethics*. Hargrove stresses traditional Western conceptions of stewardship and nature aesthetics. Hargrove correctly points out the problems of a focus upon rules and principles when decisions and action seem to be determined by values. Hargrove believes that people typically make affective domain decisions from a list of selected favorite choices. The author also believes that values must be clarified without indoctrination, but unfortunately uses words like "value training" in the same description. Hargrove stresses that environmental values should be clarified regarding utilitarianism, pragmatism, and economic efficiency positions.

D. J. Hall (1985) makes an impassioned call for stewardship and the reformation of the Christian mission in *The Stewardship of Life in the Kingdom of Death*. Hall stresses the importance of faith in changing the death and injustices which pervade our present existence. The author suggests that life is both a mandate and a gift which must be chosen. Without change toward
stewardship, coexistence, and peace; Hall believes we will be choosing death rather than life.

**Utilitarian Theory**

*Animal Liberation* by Singer (1990) is a utilitarian statement of the need to extend rights to animals. Singer criticizes human treatment of animals in scientific research and in factory farming techniques. Singer believes only sentient non-humans possess interests and inherent value. The author stresses that humans and sentient animals have equal interests which should be considered when determining how humans should treat animals.

Singer makes the point that children are implicitly and explicitly schooled into the speciesism so prevalent in human treatment of animals. The author believes that television, nursery rhymes, and children's books mislead children by promoting speciesism and immoral treatment of animals.

Opotow (1993) describes findings from a study of human perceptions of justice and the inclusion of animals in "Animals and the Scope of Justice." The research indicated that the subjects' sense of justice was affected by the perception of an animal's utility to the subject. Justice was also impacted by the severity of conflict between the interests of animals and the human subjects. Opotow concluded that people will be more open and enthusiastic about conservation efforts when they perceive that the animals involved are of benefit to themselves and when the conflict of interests are minimized. The researcher also
concluded that conservation programs should focus efforts upon the utility of their program to the people involved.

**Animal Rights Theory**

In *All That Dwell Therein* Regan (1982) suggests that the utilitarian view of animal rights is unacceptable. Regan states that all that experience life have equal amounts of inherent value. Inherent value is independent of consciousness or appreciation of that value. Inherent value demands an attitude of admiring respect which gives rise to a preservation principle. The preservation principle takes precedence over strictly human interests.

Regan demonstrates that animal rights and human rights are not philosophically antagonistic. The author takes an uncompromising stand against hunting, trapping, commercial animal agriculture, and the use of animals in research.

Stone, C. (1974) considered the rights of species and nature in "Should Trees Have Standing? Toward Legal Rights for Natural Objects." Stone’s argument is similar to that of Nash (1989) in that Stone views the consideration of rights as an evolving concept and uses legal examples from corporate law, woman’s liberation, and the natural environment to illustrate this evolution. The author considers two aspects of providing rights for the environment: (1) legal-operational (2) psychic and socio-psychic. Stone explains the conditions which must be satisfied for a natural object to become a holder of rights. He states that the strongest case for legal rights to natural
objects can be made by stressing human utility of the environment. He suggests that the knowledge of ecology and changing cultural views concerning the environment help provide the climate needed for favorable court rulings concerning environmental rights.

One of the first authors to champion the animal rights position was Henry S. Salt (1980) whose book, Animal Rights, was first published in 1892. Salt believed that both animals and humans have restricted rights which extends from their "individuality, character, and reason." (p. 16). Salt states that the lower position of animals in Western societies generally is justified by Christian teachings concerning dominion, or from Cartesian theories which characterize animals as non-feeling and non-conscious machines. Salt recognizes the interaction of rights and obligations when stating,

"...animals have rights, and these rights consist in the 'restricted freedom' to live a natural life - a life, that is, which permits of the individual development - subject to the limitations imposed by the permanent needs and interests of the community.

Nash, Rod. (1989) gives a historical description of the extension of ethical consideration to nature in The Rights of Nature. Nash suggests that the environmental movement is an extension of U.S. ideals of liberty and freedom, and not a radical or subversive movement. The author documents the greening of religion and philosophy, and the growth in the knowledge of ecology. Nash views the extension of rights to
nature as part of an evolutionary process of involving freedom and liberty.

**Pluralistic Theory**

Stone, C. (1987) discusses the future of environmental ethics in *Earth and Other Ethics - The Case For Moral Pluralism*. Stone believes that to move forward, environmental ethics must question the assumptions that form the basis of ethical meta analysis. Stone states that environmental ethics demands more than the extension of monistic, anthropocentric theories. The author goes on to suggest the need for a distinctly different moral regime to manage environmental relationships. Stone defends moral pluralism from claims of moral relativism by suggesting that ethical decisions are not strictly driven by context in pluralistic systems. Pluralism provides a framework through which ethical consideration can be divided into distinct segments. Each segment is governed by appropriate, but very different principles. Stone’s, C. (1974) earlier paper, "Should Trees Have Standing? - Toward Legal Rights For Natural Objects", was influential in setting the agenda for environmental ethics in the 1970’s and 1980’s. Stone’s call for investigation of moral pluralism seems similar in that it appears that the concepts of sustainable development and ecological equilibrium require justification through a distinctly different moral regime.

ecological relationships and uses situational context to determine value and moral obligation. Brennan bases this assessment on the idea that human wants are always "relative to time, place, and context" (p. 195). He states that life and nature can't be separated and ultimately natural context can't be removed from the worth of life.

Brennan's conception of equity between species is based upon a holistic, pluralistic theory of environmental ethics which doesn't fit with present popular moral theory with its pursuit of a universal moral truth. Brennan suggests a contextual theory which recognizes the significance of ecological relationships.

Wenz (1988) provides an analysis of theories of justice and a description of a pluralistic theory of environmental ethics in *Environmental Justice*. Wenz believes that environmental ethics are an issue of distributional justice, and that the various justifications for distribution of life's benefits and burdens involve environmental issues. He reviews virtue, efficiency, and libertarian theories of property rights; human rights and animal rights theories; utilitarian theory; and biocentric and ecocentric theories of environmental justice.

Wenz could have shown more environmental relevance of the property rights, human rights and utilitarian theories. Although the environment is mentioned in descriptions of these theories, a much stronger case could have been made concerning the environmental impact of the various theories of distributional justice.
Wenz then moves on to analyze Animal rights, Biocentric and Ecocentric Theories. While reviewing these theories, Wenz identifies principles which are used in his description of the concentric circle theory of pluralistic environmental ethics. Wenz pictures moral obligation in terms of concentric circles. The closer our relationship to someone or something, the stronger the obligation we have to that relationship. A person’s position on the concentric circles can vary with time, context, and subject matter. Wenz’s theory provides a framework for working out conflicts between humans, animals, and the environment. Wenz suggests that all sentient animals be afforded negative rights. He also suggests that ecosystems provide a means to evolutionary ends and therefore demand a position on the concentric circles.

Wenz provides a viable pluralistic theory for determining our obligations to each other, other species, and the environment. This theory serves to justify our present relationships, however. Because ecosystems typically would occupy an outer circle in Wenz’s circle theory, fragmentation between humans and the environment would continue. Outer is essentially other, and would not lead to an integrated system of ethics required of an integrated cosmology.

Warren, M.A. (1992) presents a pluralistic view of environmental ethics in "The Rights of the Nonhuman World." The author suggests the complimentary fit of the animal liberation movement and Leopold’s land ethic. Warren states that it is not necessary to chose between atomistic and holistic conceptions of
biospheric obligation. Warren believes that only by combining these two positions can we handle the full range of moral issues which extend from the interaction of humans with the environment and other species.

Warren's writing is a part of a collection edited by Hargrove (1992) entitled Animal Rights/Environmental Ethics Debate. Hargrove uses a historical approach to illustrate the progression of debate on environmental ethics and the treatment of animals. Hargrove's selections chronicle the growing realization that the biocentric and ecocentric positions are complimentary. Although these two positions will not be without conflict, they are essentially describing layers of a socially based ethical framework which extends from a universal theoretical foundation.

**Biocentric Individualistic Theory**

Schweitzer wrote on the ethics of a reverence for life in The Philosophy of Civilization. Schweitzer describes a moral position suggesting that it is good to cherish life and evil to destroy life. Schweitzer's suggests that the will to live, or pleasure; and the repulsion of annihilation, or pain is morally equal for all life. This equality of life exists regardless of consciousness or ability to voice feelings. In this view, humans are morally obligated to reduce the pain and suffering of all animals in all situations. Schweitzer's view represents a foundation for an ecocentric ethic of human obligation to other species. In his autobiography, Out Of My Life and Thought: An
Autobiography, Schweitzer stated: "A man is ethical only when life, as such, is sacred to him, that of plants and animals as well as that of his fellow men." (1933, p. 156-159)

Wilson (1984) also describes a reverence for life in Biophilia. Wilson argues for a new ethic based upon the unrelenting human motivation to cherish and protect human life. Biophilia is defined by Wilson as the "innate tendency to focus on lifelike processes" (p.1). Wilson views this tendency in humans as an instinct closely associated with reason. The more we understand life and life processes in all organisms, the more we will value the lives of other organisms and our relationship with them.

Wilson stresses the biological bonds humans have with other animals. For instance, approximately 99% of human genes correspond directly with those found in chimpanzees. Wilson suggests that we are literally kin with other animal species.

The author states that the stewardship and altruism required of a conservation ethic should find its basis in selfish reasoning. The idea is that humans will "conserve land and other species fiercely if they foresee material gain for themselves, their kin, and their tribe" (p. 131).

Ehrenfeld (1981) criticizes the anthropocentric values associated with consumption and the persecution of other species in The Arrogance of Humanism. The author endorses the Noah Principle which applies non-humanistic values beyond the typically used economic justification for action.
"They (communities and species) should be conserved because they exist and because this existence is itself but the present expression of a continuing historical process of immense antiquity and majesty." (p. 207)

Ehrenfeld uses the Noah Principle to justify the preservation of human vectors as a resource because of existence value.

Devall (1988) calls for a new sense of obligation to the nonhuman world in *Simple In Means, Rich In Ends*. The author provides a description of the differences between reform ecology and deep ecology. Devall emphasizes that resources means resources for all living things. Plants should be preserved because of their intrinsic value. The suggestion that plants are only valuable because of their instrumental value to humans reveals human prejudice. Devall also believes that people in industrial societies must change the way they experience life. He stresses that humans live in mixed communities in which all living members are equal.

Devall stresses the need to bring emotion into our lives and to grow away from the alienation found in industrial societies. He also states that as members of mixed communities, humans are not just managers or stewards. As part of the community, Devall suggests that humans should experience their place within the community rather than imposing their place.

Van DeVeer (1979) provides a description of an inegalitarian animal rights theory which includes a weighting principle in "Interspecific Justice." This theory provides a weighted formula for dealing with human duties in regard to animal interests. Van DeVeer describes five possible methods in which we might resolve
conflicts concerning animal rights: radical speciesism, extreme speciesism, interest sensitive speciesism, two factor egalitarianism, and species egalitarianism. He suggests the importance of understanding basic and peripheral interests and stresses the need to use a weighting principle to provide more consideration to beings with more complex psychological capacities.

Attfield (1983) writes a chapter in The Ethics of Environmental Concern on the topic of moral standing of nonhumans. Attfield suggests the importance of distinguishing between moral standing and moral significance. He states that plants and bacteria may have moral standing, but at a minimal level of significance. Although all living entities have inherent worth, that worth is distributed in an inegalitarian manner. Therefore, Attfield suggests that the basic needs of a living being such as a plant or bacteria may be sacrificed to satisfy the non-basic needs of humans.

In Respect For Nature Taylor (1986) provides a theory of environmental ethics which removes itself from the anthropocentric orientation of traditional ethics. He adapts the non-consequential theories of Kant, but suggest that all living beings have inherent worth. Taylor’s position involves an egalitarian application of animal rights in which all living individual have equal inherent value. He provides five principles which provide priorities for the resolution of conflicting claims: (1) self defense, (2) proportionality, (3)
minimum wrong, (4) distributive justice, (5) restitutive justice. These normative ethical principles applied in a biocentric fashion create a different way of viewing obligations to other species, but also create problems. These problems result from applying an individualistic system of ethics to more holistically oriented concepts such as species, ecosystems, and environment.

Taylor’s theory also runs into trouble because it fails to deal with the ecological realities of human relationships with other species and the environment which cannot be considered in isolation. His principle of restitutive justice is essentially impossible to apply and would not be sufficient to compensate for the intentional or accidental loss of life. Equal consideration of all life would require too much of human existence. In addition, the principle of minimal wrong suggests that we must discriminate between cultures concerning intrinsic value. The significance of cultural values in determining minimal wrong will be problematic. The minimal wrong principle also allows humans to act in such a way that is opposed to egalitarian biocentric individualism. Treading lightly on species and the environment makes moral common sense, but if all species have equal rights, killing can’t be allowed.

**Ecocentric Theory**

Leopold (1966) described a land ethic in *A Sand County Almanac*. Leopold stated the need for humans to cooperate within their community, but sought to enlarge the concept of community to include the land. He believed that human relationships with
the land were dominated by economic criteria and decisions concerning the land were controlled by privilege. Leopold sought to untie this relationship of privilege to one of obligation. He believed that the sense of obligation to the land community was critical to conservation efforts. He also believed that government intervention was not the answer to land use problems suggesting ethical concern for the land by private land owners would solve many ecological problems. Leopold stated, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." (p. 262) Leopold's philosophy was a cornerstone of the environmental movement of the 1970s and of the wilderness preservation efforts of the last half of the 20th century.

Callicott (1986) extended Leopold's concept of a land ethic in "Animal Liberation: A Triangular Affair." Callicott finds traditional theories of ethics inadequate because of their individualistic and atomistic orientation. Callicott describes moral humanism, human moralism, and reverence-for-life ethical position as hierarchial in perspective. He argues that the land ethic establishes value distinctions based upon importance to the biotic community. Callicott describes the need to move away from the atomistic and distributive nature of traditional ethics to a holistic and collective theory of ethics. He states that this move would entail a revolution in ethics and world view, and would represent a total transformation of our present way of life.
Rifkin (1984) provides a critique of technocratic rationality and genetic engineering in *Algeny*. The author suggests the need to give up trying to recreate nature in our own image by engineering life on earth. He favors an ecological appraisal in which we choose to participate with the rest of life on earth. Rifkin strongly makes the case for moving from an "embarrassingly anthropocentric worldview" to a holistic view which sanctions ecological behaviors and recognizes the fragmented scope of human reality.

In *Gaia Connections*, Miller (1991) investigates the nature and direction of biotechnology. Miller provides a brief introduction to environmental ethics and theories of justice which pertain to the environment. The author then compares the green and gene revolutions stressing the ethical significance of biotechnology and genetic research. Miller stresses the limits of scientific inquiry and states the importance of self-criticism and ethical reflection concerning human applications of technology. The author stresses the political and economic bias of biological and ecological research.

Miller explores the military applications of biotechnology expressing great concern for the 60 fold spending increase on biological warfare research and development approved by the Reagan and Bush Administrations between 1981 and 1986. Miller raises many questions and concerns regarding the viability of biotechnological research. The author also raises issues involving the power and control of this research.
"What now seems to be certain is that the gene revolution will not benefit most sectors of the international agricultural community. As usual, science tends to be more interested in profits than in people." (p. 143)

Summary

This section of the literature review demonstrates the controversial and political nature of issues involving equity between humans and other species. It is apparent from this review that species and environmental protection are included in traditional ethical theory only with great difficulty. The traditional theories of environmental ethics involve a hierarchy of life and an atomistic approach that is not consistent with the holism required of harmonious ecological relationships. The ecocentric and pluralistic theories, with their emphasis upon a land ethic, involve a very different life style and system of ethics than presently found in the United States.

Just as preservationists and conservationists fought over the appropriate place of wilderness in society through the 20th century, the animal rights and land ethics movements have conflicted. Although both are concerned with equity between species, they approach the issues from very different positions. The holistic, ecocentric orientation begun by Leopold’s land ethic and the biocentric theories strain traditional ethical theories beyond their capacities. Environmental ethics, as applied to interspecies equity, would force a revolution in the way we think, feel, value, and act. The present individual orientation of the U.S. way of life does not fit the concept of ecocentrism or biocentrism where the focus is upon processes or
relationships, and not on a hierarchy of individual moral standing and accorded rights.

Warren, M.A. (1992), and Hargrove (1992) suggest that both the biocentric and ecocentric movements are required if we are to fully cover moral issues concerning humans, the environment, and other species. These authors suggest the complementary nature of biocentric and ecocentric philosophy and provide a future direction for inquiry in environmental ethics.

**Equity Between Present and Future Generations**

This section of the literature review describes the implications of sustainable development for future generations. Initially, I focus upon time orientations and the impact of world views on that orientation. In the second part of this section, authors addressing ethics and moral obligations concerning future generations are reviewed. Several positions concerning the impact of consumption patterns on future generations are then reviewed.

**Time Orientations**

Gould (1987) describes the need to understand the relationship between different conceptions of time in *Time's Arrow Time's Cycle*. Gould suggests that cyclical time can't "encompass the complex history that bears irreducible signs of time's arrow...Any adequate account of the earth requires both." (p. 97) Gould states that conceiving time as a cycle or an arrow involves human categories meant to lend meaning and understanding to time's relationship to humans. Gould also states that these
categories of time are both validated by nature and depending upon one's perspective or question pursued, both embody the nature of time.

In *Time The Familiar Stranger* Fraser (1987) describes man as "the measure and measurer of time." (p. 352) The issues of sustainability for Fraser will require change toward integrating the socially constituted present with the flow of history. Fraser answers the question, "whose history," with a warning that our interpretation of time and history are predicated upon our present creative conceptions of the nature of time.

In *Time Wars* Rifkin (1987) suggests that the separation between biological and modern industrial societies time frames leads to confrontations in priorities. The temporal alienation which humans now face results from a loss of contact with the biological and ecological rhythms that are the core of existence. Rifkin urges that humans must get in touch with their ultimate purpose, and stresses the wisdom of a reorientation toward a time frame grounded in the realities of nature's rhythms. The author suggests the importance of time orientation in our conceptualization of progress and production. He describes industrial society as a clock culture which accelerates our lives, synchronizing us with our wristwatches.

Economic and environmental issues are viewed as a temporal crisis in which future generations will pay the costs of our failure to recognize the dominance of ecological rhythms. Ripkin suggests that the future depends to a great extent upon how well
humans can reorient their time reference to the ecological rhythms upon which all life on earth is based.

In "Time Pollution" Whitelegg (1993) describes the connections between conceptions of time and the system of transportation chosen by a society. This author draws attention to the impacts of using faster modes of transportation. Often problems with access to faster modes of transportation and greater distances traveled result in more time allotted for travel each day. Whitelegg states that the rich in industrialized societies consider their time as being more valuable than others and are drawn to faster forms of transportation. As a result, our transportation systems become oriented toward service to the wealthy.

Whitelegg also stresses that a community orientation takes a good deal of time and effort. If we use our time to travel greater distances, we will be less able to fill community obligations. This author suggests that sustainability involves changing the time orientation of our society. The author also suggests that the monetization of time leads to a consumption of space. If we are to become a sustainable society, we must change our methods of time valuation.

In The Dance of Life E. Hall (1984) states the importance of primary cultural assumptions which determine human perceptions of reality and truth. He suggests that human perceptions of time play a critical role in the unconscious control of behavior. A change in human behaviors which might lead to a sustainable
society is improbable without an understanding of the different cultural orientations toward time.

Hall describes many types of time orientations to which people are exposed. The author believes that our failure to recognize the importance of internalized time and to understand the past as well as the future create problems for Western civilizations. These problems are stumbling blocks to peace, the quest for truth, acceptance of those different from ourselves, and our hope for the future.

In *The End of Nature* McKibben (1989) describes the breakdown of global climatic equilibrium by fossil fuel based economics. McKibben presents an extremely bleak view of the future due to ecological holocaust. The author suggests that the time for political action has past. McKibben states that the alteration in the earth's climatic processes brought about by humans and the impact of genetic engineering result in the end of nature. McKibben also states that this alteration results in a loss of memory and meaning.

McKibben stresses the importance of time and space upon humans perceptions of the limitlessness of possibilities. Because humans are deluded by the seemingly infinite past history of the earth, people sense a timeless future. In addition, the earth seems incredibly large to humans because our sense of place is typically limited to the locality, or at most, the region in which we live. McKibben suggests that human perceptions of both time and space distort a sense of the world and lead to decisions
which destroy the future for generations of humans not yet born.

Kealy (1990) analyzes the composition of our present worldview and suggests the need to move beyond the domination of rational thought processes in that worldview. Kealy’s book Revisioning Environmental Ethics follows a model produced by a Swiss philosopher, Jean Gebser, in the 1930’s. Kealy suggests that industrial societies deny alternate ways of knowing other than the presently accepted rational or mental worldview which turns away from the past. The future is viewed in the rational model as capable of providing redemption, and time is divided and spatialized. The division of time results in excessive atomization and a linear orientation.

Kealy provides descriptions of mythical, archaic, magical, mental, and integral ways of knowing, and suggests that each of these worldviews is present today although the mental worldview is most prominent in the mix. The temporal orientation of each of these worldviews is also described. The author stresses the importance to future generations of moving toward an integral ecological ethic in which our minds are opened to different ways of knowing. In this revised environmental ethic, our feelings combine with conceptual modes of contemplation. The author states that the transformation required of daily life to an ecocentric worldview from an egocentric worldview will be initiated by the heart rather than the intellect. Because our feelings actualize our values, Kealy suggests that feelings and reason are dependent upon each other. The author believes that
the recognition of the affective is critical to change from our solely rational perspective.

Harman (1988) makes a similar statement to Kealy (1990) regarding the need to expand our way of knowing and our conceptualization of mind, matter, and time in Global Mind Change. Harmon states that our society presently functions with an inadequate and incomplete knowledge base founded upon the assumptions of positivism and reductionism. The author suggests the need to expand our vision of the future by involving complementary models of knowing beyond our present belief system.

**Moral Obligations To Future Generations**

Sustainable development requires consideration of future generations. In this part of the review I will highlight authors representing virtue, utilitarian, ecocentric, pluralistic, and human rights theories of our moral obligations to future generations.

**Virtue theory**

The influence of patriarchy is described by Berry, T. (1988) in The Dream of the Earth. Berry interprets the historical influence of patriarchy and states the need to change our way of thinking and acting to match the larger processes which shape the rest of the biosphere. The author describes the historical impacts of the classical empires, the church establishment, the nation-state, and the corporation. Each of these institutions has dramatically influenced human interrelationships and the relationship of humans to the environment. The power and control
exuded by these institutions have placed women in minimal positions.

Berry suggests that future generations will not be served by any agenda of change which leaves dominant patriarchal institutions intact. Berry states that partial solutions are unacceptable and that to this point patriarchal institutions have made few attempts to stop their involvement in the processes which are degrading global ecosystems. The author stresses that future generations must become nature-centered, changing from the present human-centered norm. Berry also states that future generations must change from democracy to biocracy.

**Utilitarian Theory**

Attfield (1983) describes our obligations to future generations of humans in *The Ethics of Environmental Concern*. Attfield uses utilitarian reasoning to justify equal provisioning for future generations. He reviews total and average theories, and stresses the maximization of intrinsic value by providing for everyone’s basic needs including future generations. Attfield also stresses stewardship stating that no new ethic is required to maintain the earth for future generations.

Partridge (1990) authored the chapter "On The Rights of Future Generations" in *Upstream Downstream*. Partridge argues that future generations have valid claims to rights which are not altered by temporal remoteness, incapacity, non-actuality, or indeterminacy. The author does not suggest what the content of those rights of future generations might be, but does suggest
that the content should include positive as well as negative aspects. For Partridge, positive aspects involve the provision of the record and the skills of present generations for future generations. Negative aspects would provide future generations with the resources and environment required to satisfy their fundamental needs. To this end, Partridge suggests more prudent stewardship of our own inheritance.

Ecocentric theory

Bookchin (1986) suggests in Toward An Ecological Society that the plans for the future made by environmentalists in the 1970’s provide no change from the present status quo. The author suggests that most visions of the future maintain the same dominant economic, political, and ethical assumptions which have created the environmental problems faced today. Bookchin states that these assumptions are hidden by "the rhetoric of tolerance and co-existence." (p. 280). The author states that the dictates of an ecologically oriented society involves more than just change. Bookchin’s vision of the future would result in processes which would radically reconstruct human relationships, technology, and relationships with the environment and biosphere. The author stresses the need to remove "the power of social and economic rationalization over personality, work over play, austerity over beauty, institutions over social administration, the state over society" (p. 283)

Bookchin’s orientation has strong implications for the rhetoric characteristic of sustainable development. Bookchin
indites hegemonic systems of ethics and justice, and calls for revolutionary change with a green orientation.

Small is Beautiful by Schumacher (1973) presents a plea for the revision of the ends to which wealth, education, technology, and science are meant to serve. The author suggests that the choice of purpose, or society's ultimate goals are a matter of moral choice. Schumacher provides an excellent assessment of the problems of our present educational system suggesting that problems don't initiate from education's specialization, but from a lack of depth of subject presentation and the absence of metaphysical awareness. Schumacher stresses the importance of the meaning and purpose of life and the ethical decisions concerning the pursuit of those purposes. Small is Beautiful provides an excellent assessment of the changes required to move toward a sustainable society.

Pluralistic theory

Wenz (1988) describes the impact of theories of justice upon future generations of humans and the environment in Environmental Justice. Wenz describes the limitations of human rights theory, libertarian, and efficiency theories regarding future generations. Human rights are criticized for not allowing for enough protection of the positive rights of future generations. Libertarian theory is criticized for making the assumption that natural resources are unlimited and that initial property rights are nearly always in question. Efficiency theory is criticized for its present orientation and the impact of the discount rate
upon the future. Wenz demonstrates the problems of Utilitarian theory in dealing with environmental issues. The author suggests that the consequences of policies are impossible to determine even in retrospect. In addition, environmental and development issues are often complex and defy utilitarian calculus. The result of these problems Wenz believes is a dominant utilitarian ethic which is ineffective in satisfying the environmental requisites of future generations.

Wenz concludes with a description of a pluralistic concentric circle theory of environmental justice. In this theory, the closer the relationship, the greater the obligation. The positive rights of others become stronger in closer concentric circles of relationships. Unfortunately, this theory doesn’t provide an adequate ethic for ensuring equity between generations. Although Wenz suggests that we are obliged to respond to positive rights of others rather than preferences, the positive rights of future generations are not stressed by Wenz.

Human rights theory

Harrington (1986) describes the challenges the U.S. political left must face to regain political power in *The Next Left*. Harrington analyzes the social, economic, and political factors which make up U.S. culture. The author uses historical perspective to demonstrate the impact of Fordism, Keynesian economics, and supply side economics.

Harrington stresses that equity for future generations depends upon a shift in power relationships. The author states
that the left’s lack of a single unifying agenda hurts its political influence. Harrington suggests, however, that issues of economic rights will provide unity. The author believes that both national and international social justice will provide the stimulus for a revisioning of the left’s politics. This revision involves a democratic spirit that will challenge the paternalistic characteristics of American business. Harrington stresses an ethical vision which includes equitable distribution of well-being between countries, within the U.S., and for future generations. Harrington believes that the political left must begin to form that moral vision and not wait for a catastrophe to provide the impetus for future societal change.

Bromley (1991) examines intergenerational equity and environmental uncertainty in Environment and Economy. Bromley stresses the role of property rights in determining environmental policies. Rights regarding the use of the environment also involve correlative obligations which are determined by property, liability, and inalienability rules. Bromley explains that property rules involve an exchange between two parties. Because an exchange between present and future parties is impossible, the use of property rules to define the rights of future generations and the obligations of present generations is not possible. Liability and Alienability rules seem the only choices.

Bromley states that the intergenerational equity issues focusing on the environment are inappropriately addressed by the typical pattern of market failure/government intervention.
Bromley believes that rights pertaining to environmental uncertainty and intergenerational issues are not effectively handled by present conceptions of rights and correlative obligations. Our obligations to future generations, Bromley asserts, involve the giving up of someone's presently conceived right. Because politicians and business managers must be very careful when dealing with accepted patterns of rights and obligations, fundamental changes in societal values are required.

**Summary**

This review of literature concerning equity between generations demonstrates the difficulty in reconciling the well being of future generations with present time orientation and ethical systems. Although future generations can be included, for instance, in both utilitarian and deontological moral systems, future generations are not a major consideration of these systems. The previous review of consumptive behaviors and power relationships demonstrates the problems of breaking the control our present way of life has over us. The control mechanisms found in our bureaucratic, and communicative institutions maintain the status quo. Berry, T. (1988) points out the patriarchal orientation of these institutions.

The authors reviewed demonstrate the paradox of changing policies in the direction of sustainability. The short term interests of those in control of policy decisions are often best served by maintenance of the status quo. Bookchin (1986) emphasizes this problem and explain the difficulties in changing
the present power structure which perpetuates an unsustainable future.

Most of the authors reviewed in this section call for changes in our way of understanding problems as well as changes in our perceptions of space and time. The authors demonstrate great difficulty in envisioning how to achieve these changes which would allow for the consideration of future generations of all life. Bromley (1991) suggests a new conception of rights reinforced by a reoriented value system; Bookchin (1986) a revolution with green orientation; Harrington (1986) a coalition unifying the factions of the Left through democratic processes motivated by feelings from the heart. The WCED (1987) report reviewed earlier calls for economic growth as the engine of change toward equity between nations and generations.

At the core of all changes that might provide a sustainable future is a psychological reorientation of people from industrialized nations. This reorientation involves a change of focus from having to being (Fromm, 1976). These changes would also involve the distinction between wants and needs (Fromm, 1976; Max-Neef, et al, 1989).
Chapter Four
Review Of Educational Reform Literature

This part of the literature review will investigate the recommendations of educational reform proposals for inclusion of sustainable development concepts. Proposals from the past decade are reviewed with concentration on the teacher education reform. Several proposals focus upon education in general because of their relevance to sustainable development, or their influence on the rest of the educational community.

The recent calls for reform in education are nothing new as reform rhetoric continues in a seemingly never ending cycle of suggestion and critiques (Cuban, 1990). A concept like sustainable development represents a very different way of envisioning the future and would also represent change in both educational structure and content (Milbrath, 1989). The purpose, language, and recommendations found in the reform literature will display the direction proposed by both liberal and conservative factions. Each of the proposals is followed by a brief summary of important characteristics pertaining to sustainable development. The proposals are followed by a summary of the implications inherent to the reports. This section on educational reform concludes with a brief review of literature describing the impact of these reform proposals on the classroom.

**Tommorrow's Teachers**

The Holmes Group produced "Tommorrow's Teachers" in 1986 because of the relationship between improving student performance

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and improving teaching through better teacher education. The Holmes Group consisted of deans and chief academic officers from research oriented universities from each state. The authors stressed that teachers need to acquire a greater command of the academic subjects they teach. They suggested a three tiered hierarchy of teachers including novice, competent professional, high level professional. They also suggested the need to tie schools with institutions in a research agenda, the creation of national standards through examination, and more stringent course requirements meant to increase the stature and recognition of the teaching profession.

The Holmes Group stated that the education major must be abolished since it has become a substitute for learning. In addition, future teachers should gain in-depth knowledge of the subject matter they will teach from "instructors who model fine teaching." (p. 16) The Holmes Group also suggests changes allowing for consolidation of course work into an advanced study of pedagogy.

"Tomorrow’s Teachers" by the Holmes Group can be criticized on several fronts. The authors suggest an orientation in which teaching is viewed with technical rationality reinforcing the view of teaching as a science. The Group ignores the moral implications of teaching and curriculum decisions. They stress the importance of improved student performance, but fail to indicate to what end this improved performance would be applied.

Although the authors identify poor college teaching as a
problem, they are not critical of the instructor promotion and evaluation policies found in the very institutions the authors represent. These policies provide so little incentive to improve instruction. As university administrators, the Holmes Group should recognize that if campus promotion and merit pay depended upon teaching excellence, the instruction in our universities would greatly improve.

A more liberal education with increased emphasis upon specialized subject matter and five years of schooling required to become a teacher are not necessarily bad. But, how will this help the education of U.S. children in light of teacher shortages in urban areas, and specifically shortages of minority teachers? In addition, it is hard to understand how requiring a fifth calculus course in college will help a junior high math teacher's

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<tr>
<th>REPORT</th>
<th>PURPOSE</th>
<th>IMPLEMENTATION OF PROPOSALS</th>
<th>LANGUAGE ETHICAL POSITION</th>
<th>TREATMENT OF FOUR LEVELS OF SUS. DEV.</th>
</tr>
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<tbody>
<tr>
<td>Holmes</td>
<td>Improve teacher education</td>
<td>Little said</td>
<td>Anthropocentric</td>
<td>Not addressed teaching is approached as</td>
</tr>
<tr>
<td>1886</td>
<td></td>
<td></td>
<td>Elitist, Meritocratic</td>
<td>scientific undertaking</td>
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<tr>
<th>CULTURAL PLURALISM</th>
<th>MAJOR CHANGES RECOMMENDED</th>
<th>NATIONAL CURRICULUM TESTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not addressed</td>
<td>Removal of education from undergraduate degree program.</td>
<td>Increased standards for acceptance into teaching profession.</td>
</tr>
<tr>
<td></td>
<td>Three tiered teacher hierarchy.</td>
<td>Demonstration sites.</td>
</tr>
</tbody>
</table>

instruction in introductory algebra?
The authors make many appropriate observations, but fail to propose any solutions that would change the present system. The report fails to assess the ethical issues which are at the foundation of our societal and educational problems. Solutions are suggested which would extend the technocratic rationality, specialization, and hierarchial organization which form part of the problem.

**Educating America**

The National Governor’s Association produced "Educating America" in 1990 recommending state educational strategies. The report lists a number of goals and objectives which focus upon the economy, societal order by controlling alcohol and drug problems, equal opportunity, and assessment by national standards. The governors provide strategies to implement each of the objectives they provide.

The report says little on teacher education, but does suggest moving "teacher training" to the graduate level. In addition, the governors state that universities must be held accountable for their education programs and threaten termination of teacher preparation programs which do not change to provide adequate teacher "training". Little is said about what constitutes adequate teacher education, however. They also suggest that universities develop plans to recruit minority teachers.

The report states that local communities must be allowed to operate free of top-down management, but fail to provide much in
the way of strategies for implementation other than top-down oriented state policy statements.

The governors have written a highly political document which suggests that the U.S. educational system is obsolete. In effect, the governors blame education for the loss of global economic position, social problems, and specifically drug/alcohol problems. They suggest that with more appropriate education, these problems would diminish.

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<th>REFORM</th>
<th>PURPOSE</th>
<th>IMPLEMENTATION OF PROPOSALS</th>
<th>LANGUAGE ETHICAL POSITION</th>
<th>TREATMENT OF FOUR LEVELS OF SUS. DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educating America</td>
<td>Economic Prosperity</td>
<td>Strategies are mentioned, but</td>
<td>Anthro-pocentric tone.</td>
<td>Only within the U.S.</td>
</tr>
<tr>
<td>1990</td>
<td>Equal Opportunity</td>
<td>little more</td>
<td>Humanistic</td>
<td>Between species, generations,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>than political rhetoric.</td>
<td>Conservative agenda.</td>
<td>and nations</td>
</tr>
<tr>
<td>National Governors</td>
<td></td>
<td></td>
<td>Discipline stressed.</td>
<td>not a concern.</td>
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<tr>
<th>CULTURAL PLURALISM</th>
<th>MAJOR CHANGES RECOMMENDED</th>
<th>NATIONAL TESTING NATIONAL CURRICULUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a concern</td>
<td>Teacher preparation in graduate school. National testing required</td>
<td>National testing required State imposed policies</td>
</tr>
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</table>

No mention is made of equity issues between nations, species, or generations. Equity within the U.S. is a concern, but little substance is provided regarding change other than political rhetoric.

**The Paideia Proposal**

A group of people named the Paideia Group (Adler, et al, 1982) wrote this proposal in 1982. The group was comprised of 22
college and high school administrators, heads of educational agencies with cultural or philosophical interests, and one writer. The authors address equal opportunity, the economy, and the improvement of democratic institutions.

The Paideia Group only briefly mentions teacher education suggesting the recruitment and permanence of teachers is hurt by poor pay, bad working conditions, lack of respect, and the fact that most teachers are forced to perform menial tasks. They suggest that most reforms refer to teachers in utopian terms, and go on to state that it is more reasonable to impact teaching by expecting teachers to grow intellectually throughout their lives. The authors endorse a liberal, humanistic curriculum for teachers, and state that teacher education should follow a four year undergraduate degree program.

The authors include teaching in the cooperative arts along with healing and farming. The teacher must use their knowledge of subject matter and learning to cooperate with others to help them learn.

Several problems are evident in the Paideia Group's proposal. The authors state that the U.S. is "politically a classless society." (p. 5) This statement reveals a general lack of understanding of the power structure in the political and social realm. In addition, a statement of this type illustrates a lack of understanding of power relations found in educational institutions which must be understood and addressed if educational institutions are to change. The authors also suggest
that knowledge should be acquired through textbooks. This suggestion implies a questionable knowledge concerning the politically motivated and non-pluralistic orientation of most texts.

Equity issues between nations, species, and generations are not mentioned. Similarly, the environment or a global perspective is not mentioned. The proposal is consistent with the objectives of multicultural education, however.

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<th>REPORT</th>
<th>PURPOSE</th>
<th>IMPLEMENTATION OF RECOMMENDATION</th>
<th>LANGUAGE/ETHICAL POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paideia Proposal</td>
<td>Equal Opportunity</td>
<td>Weak - no tracking</td>
<td>Anthropocentric</td>
</tr>
<tr>
<td>1982</td>
<td>Democracy</td>
<td>little said about how to achieve a one track system.</td>
<td>Humanistic, Progressive orientation</td>
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<tr>
<th>CULTURAL PLURALISM</th>
<th>MAJOR CHANGES SUGGESTED</th>
<th>NATIONAL TESTING/ CURRICULUM</th>
<th>TREATMENT OF FOUR EQUITY LEVELS</th>
</tr>
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<tbody>
<tr>
<td>Equal opportunity and democracy stressed, but cultural pluralism in the U.S. not mentioned.</td>
<td>Teacher ed. after undergraduate degree.</td>
<td>No recommendation</td>
<td>Emphasis upon equity within the U.S. No mention of equity between nations, species or generations. The environment is not mentioned</td>
</tr>
</tbody>
</table>

The Paideia Group stresses equal opportunity for all people advocating equity within the U.S. They propose a one track system and the same quality of life for all. Unfortunately, beyond a one track for all, they say very little concerning how
this equality might be achieved. The implication is that a balanced educational organization would foster equalization of quality of life factors. The authors propose an output based educational organization founded upon three goals: (1) the acquisition of organized knowledge, (2) the development of intellectual skills, and (3) enlarged understanding of ideas and values.

**Education For A Democratic Future**

The Public Education Information Network wrote "Education For a Democratic Future" in 1985. This network consisted of a group of 150 teachers, scholars, and citizens from across the U.S. As the title suggests, the authors stress a more democratic future of U.S. society. They state that the prerequisite for a more democratic future lies in the equitable sharing of economic and political power, full and fair employment, and the individual sense of belonging. The authors also stress that workers must gain greater control over their employment, a safe and clean environment, and a social climate in which parents can "raise their children without fear that racial class, or religious prejudice, war, disease, or starvation, will destroy their future". (p. 374)

The authors point out discrepancies between adult/youth and white/black employment stressing the growing economic and social inequity in the U.S. They also stress the threat of war and the detrimental effects of government spending upon weapons.

In regard to teacher education, the authors emphasize links
and cooperation between university, school districts, unions, and state governments. They state that "licensure should place greater emphasis not on test scores or course completion, but upon the practical demonstration of curricular and pedagogical practice." (p. 383)

This report differs from the other proposals reviewed in this section in several ways: (1) The proposal is a product of a bottom-up orientation rather than coming from a blue ribbon panel of college presidents or other political elites. (2) The authors stress a safe environment free from degradation and war. (3) The authors emphasize the basic needs of people and the importance of education fulfilling those needs for all people. There is also stress upon the psychological need to belong, but with added emphasis placed on participation and having control over the conditions of belonging. (4) There is a future orientation as equity between generations is addressed.

This report most strongly represents the values inherent to sustainable development content. The authors address equality, multicultural perspective, equity, empowerment in the workplace, local decision making, and teaching. The proposal is written in anthropocentric language with equity between species unmentioned. However, by stressing a safe environment the authors take what can be construed as a first step toward an ecocentric orientation.
Moral Education In The Life Of A School

This document was written by the Association for Supervision and Curriculum Development Panel on Moral Education in 1988. The panel was made up of eleven members, the majority of whom were professors from schools of education. The purpose of this report was to recommend the inclusion of moral education in the school mission. The authors describe moral education as being at the heart of democracy and suggest that schools teach justice, altruism, diligence and respect for human dignity. They also state that moral education requires cognitive, affective, and behavioral objectives. The authors recommend teacher education curricula give priority to the instruction of moral education.

Moral education is defined as "whatever schools do to influence how students think, feel, and act regarding issues of right and wrong." (p. 7) The panel describes several emerging moral issues which include: a growing underclass, increasing cultural pluralism in the U.S., increasing numbers of older
citizens in the U.S., a decline in family structure or unity, and post industrial ethics. Post industrial ethics include biomedical and genetic issues, computer ethics, information issues. Human rights issues such as child abuse, AIDS, and poverty are also seen by the panel as important. The panel makes no mention of environmental ethics, responsibility to future generations, equity issues between nations, or equity between species, however.

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<th>PURPOSE</th>
<th>IMPLEMENTATION OF RECOMMENDATIONS</th>
<th>LANGUAGE/ETHICAL POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moral Education</td>
<td>Democracy (depends upon moral responsibility)</td>
<td>Weak - 10 recommendations have essentially no mention of how they might be implemented.</td>
<td>Anthropocentric Humanistic -developing empathy -disagreeing respectfully -peaceful conflict resolution -human equality</td>
</tr>
<tr>
<td>in the Life of the School 1988</td>
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CULTURAL PLURALISM

Cultural pluralism is described as a problem.

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<th>MAJOR CHANGES SUGGESTED</th>
<th>NATIONAL TESTING/ CURRICULUM</th>
<th>TREATMENT OF 4 LEVELS OF S. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-emphasize moral concern in the school. Stress on discipline. Classroom as a moral community.</td>
<td>No testing or national curriculum suggested.</td>
<td>Strong on equity issues within the U.S. Between generations, species not mentioned.</td>
</tr>
</tbody>
</table>

The authors include teacher preparation in their description of moral education in the schools, but have little to say about the implementation of their moral education agenda. Moral education is well defined and includes an effective synopsis of Durheim's theory of moral education. The report lacks a plan for
implementation, and does make the point that morality need not, and should not be founded in religion.

**The U.S. Prepares For Its Future**

This 1987 report of the Study Commission on Global Education was the effort of an elite panel of educators concerned with global education. The Commission consisted of eight directors of teaching at humanitarian institutes, two union leaders, two state commissioners of education, five college presidents, one governor, and one teacher. The report has a future orientation suggesting that the educational system established to supply workers for a mass production economy no longer fills the requirements of our children. The authors suggest four themes which would foster a global perspective: (1) systems analysis - physical, biological - "particularly the human species" (p.17), economic, political, communicative, and evaluative; (2) historical perspective on the development of the world and civilization; (3) cultural understanding of their own and other cultures; (4) preparation of citizens to make public policy.

The Commission suggests: active learning strategies, teacher empowerment, teacher exchange programs with an emphasis upon curriculum development, strengthening foreign language study, and curricular restructuring to a more multidisciplinary approach. The Commission also mentions the role of the teacher in fairness of presentation, support of active student learning formats, and presentation of various choice or policy alternatives.

Little is said concerning teacher preparation in global
perspectives, but the authors suggest a change in teacher preparation toward those represented by the Carnegie Task force on Teaching as a Profession. This implies a broad undergraduate program in the arts or sciences with preparation for teaching occurring after the bachelors degree. The Commission stresses the importance of integrating course work at the College level and an "extensive student teaching experience under the guidance of exemplary teachers with experience in teaching with global perspective." (p.36) How this integration should occur, or where enough of these exemplary teachers might be found was not mentioned.

The Commission suggested 16 programs of studies for both elementary and secondary levels. Fourteen of these recommendations apply to the relationships between nations and within the U.S. Only two recommendations could loosely be construed as being applied to equity issues between generations or between species. These two recommendations need not be consistent with sustainable development as conceived by this study, however.

The global perspective expressed by the Commission provides only minimal attention to the relationship between environmental and development issues. The authors provide little attention to the relationship between present and future generations, and although the Commission stresses historical perspective, no mention is made of environmental history or an ecological perspective on historical events. The study of beliefs and values are included, but no mention is made of the ethical
decisions required of global issues.

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<th>REPORT</th>
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<th>IMPLEMENTATION OF RECOMMENDATIONS</th>
<th>LANGUAGE/ETHICAL POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The U.S. Prepares For Its Future 1987</td>
<td>Education to match U.S. cultural pluralism and increased international connections. Citizen participation in policy decisions</td>
<td>None - some of recommendations are clearly unrealistic and lack a realistic view of classroom teaching in the U.S.</td>
<td>Anthropocentric liberal multicultural perspective stressed. Welfare is defined as having successful work and serving one’s country.</td>
</tr>
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<tr>
<th>CULTURAL PLURALISM</th>
<th>MAJOR CHANGES SUGGESTED</th>
<th>NATIONAL TESTING CURRICULUM</th>
<th>TREATMENT OF 4 LEVELS OF S.D.</th>
</tr>
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<tbody>
<tr>
<td>Big emphasis in this area.</td>
<td>State and local policy to increase citizen participation. Curriculum centers.</td>
<td>Strengthening of state requirements in global education areas.</td>
<td>Strong emphasis on cultural understanding but equity not mentioned. Equity between generations and species - no.</td>
</tr>
</tbody>
</table>

**Time For Results**

The Governor's 1991 Report on Education stresses the importance of strong leadership and teacher recruitment (National Governor’s Association, 1986). Unfortunately, the governors say little or nothing about how these improvements might be accomplished. The report is strongly oriented toward policy and technological solutions to educational problems. Collective bargaining is identified as an obstacle to the implementation of education programs that would improve the nation’s educational report card. Equity issues are raised through suggestions for children labeled at risk.

The Report states that better schools equate to better jobs, keeping a high standard of living, and out competing workers from
other countries. The Governors state that they are forced to address U.S. educational issues because of their constituent's unemployment. Regarding higher education, the governors recommend equity of access to institutions, funding of public institutions tied to assessment of student performance, and more consideration of undergraduate outcomes in accreditation.

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<th>REPORT</th>
<th>PURPOSE</th>
<th>IMPLEMENTATION OF RECOMMENDATIONS</th>
<th>LANGUAGE/ETHICAL POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time For Jobs</td>
<td>Maintenance of U.S. hegemony</td>
<td>none of significance.</td>
<td>Anthropocentric,</td>
</tr>
<tr>
<td>Results 1986</td>
<td>Economic growth</td>
<td></td>
<td>Utilitarian.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Elitist Ethnocentric</td>
</tr>
<tr>
<td>CULTURAL</td>
<td>MAJOR CHANGES</td>
<td>NATIONAL TESTING/ CURRICULUM</td>
<td>TREATMENT OF 4 LEVELS OF</td>
</tr>
<tr>
<td>PLURALISM</td>
<td>SUGGESTED</td>
<td></td>
<td>S.D.</td>
</tr>
<tr>
<td>Mentioned</td>
<td>More use of school building.</td>
<td>National teacher standards</td>
<td>No mention of</td>
</tr>
<tr>
<td>recommendations</td>
<td>Parental choice of schools.</td>
<td>suggested.</td>
<td>equity between</td>
</tr>
<tr>
<td>would not</td>
<td>State involvement in school</td>
<td>Stronger state accreditation</td>
<td>species, generations,</td>
</tr>
<tr>
<td>enhance equity</td>
<td>leadership training.</td>
<td>standards.</td>
<td>Treatment of at risk</td>
</tr>
<tr>
<td>between cultures</td>
<td></td>
<td></td>
<td>children mentioned.</td>
</tr>
</tbody>
</table>

This report implies that the inequity which now exists between nations be maintained. Although programs for at risk children are mentioned, little is said concerning the recruitment of minority teachers. In addition, the position of women in the educational hierarchy is not addressed. The environment is not mentioned and future generations not considered.

**Those Who Can**

This report was published by the Association of American...
Colleges (AAC) in 1989 and was written by four scholars involved with education headed by Joseph Johnston. The authors stress the problem of recruitment of quality teachers suggesting the need to include liberal studies undergraduates. The authors recognize the problems of extending the duration of teacher preparation, however. They criticize college leadership suggesting that the present educational leadership lacks vision, and state that few institutions take teacher preparation seriously. They also state that the lack of progress in teacher preparation can be tied to the lack of effective leadership.

The AAC is critical of college instruction suggesting that instructors too often fail to take teaching seriously and often perform badly in the class. They suggest a reprioritization of criteria for promotion including an investigating of areas such as publication and teaching effectiveness. The authors also correctly assess the failure of advisement on the college campus.

The authors include sustainable development content through their promotion of interdisciplinary content and curricular integration. But, they warn that the illusion of cooperation is often found on the campus with truly interdisciplinary thought typically avoided to protect "disciplinary turf." The authors also provide recommendations concerning professional education courses, methods, and student teaching experiences. They stress the importance of mediation in the first years of teaching to improve instruction.

The AAC recommends state deregulation and stresses exit
competencies as determined by each institution. Similarly, the authors reject course requirements imposed by the state.

The report includes models of effective teacher education, but generally, mentions little concerning the implementation of their recommendations. Minority populations are discussed by the authors with the lack of minority teachers projected as a continuing problem.

<table>
<thead>
<tr>
<th>REPORT</th>
<th>PURPOSE</th>
<th>IMPLEMENTATION OF RECOMMENDATIONS</th>
<th>LANGUAGE/ETHICAL POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those Who Can</td>
<td>Expanding the pool of teachers to include arts &amp; science graduates</td>
<td>Little to none</td>
<td>Anthropomorphic - Utilitarian</td>
</tr>
</tbody>
</table>

The table highlights the following points:

- **CULTURAL PLURALISM**: Stressed problem of #'s of minority teachers.
- **MAJOR CHANGES SUGGESTED**:
  - Deregulation of teacher policy.
  - Recruitment of teacher policy.
  - Interdisciplinary

- **NATIONAL TESTING/ CURRICULUM**:
  - Stress institutional testing and accountability against national curriculum.
  - Against national curriculum.
  - Interdisciplinary

- **TREATMENT OF 4 LEVELS OF S.D.**
  - Equity within the U.S. stressed. No mention of equity between nations, generations, or species.

---

**A Nation Prepared - A Nation Prepares For the 21st Century**

This 1986 report by the Carnegie Forum on Education and the Economy presents the findings of a task force comprised of governors, union leaders, chief school officers, a teacher, a state legislator, business leaders, and people concerned with the education received by poor and minority students. The authors stress economic productivity and the importance of education to
continued economic growth and equal opportunity.

The Task Force stresses the U.S. economic position in the world stating in the executive summary, "America's ability to compete in world markets is eroding. The productivity growth of our competitors outdistances our own." The authors call for: (1) an advanced teaching degree in the 5th year of college after acquiring a bachelors degree in arts or science. (2) the creation of lead teachers, (3) the creation of a National Board of Standards for the teaching profession, (4) the creation of professional curriculum for a masters degree in education, (5) an increase in the numbers of minority teachers, (6) teacher merit pay tied to student performance.

Higher teacher pay is considered a prerequisite by the Carnegie Forum. This pay increase would come at a cost of a five year study program in college, more autonomy in making decisions pertinent to children's education combined with more responsibility, and high standards for qualification as a certified teacher. A two year internship would be required of prospective teachers under the tutelage of a lead teacher with appropriate college courses taken during the summer.

The authors are concerned with the impact of higher standards for teacher accreditation and the number of minorities entering the teaching profession. However, they view this problem as one of recruitment. The authors go through an extensive description of statistics relating to teachers and their education. They fail to provide a description of research.
related to their recommendations, however.

The Carnegie Forum stresses that greater productivity does not conflict with developing independent and creative minds. They don’t mention U.S. consumption patterns, or the incompatibility of the present U.S. conceptualization of economic growth with environmental sustainability. The authors mention a global economy only in the context of promoting a competitive high-wage U.S. work force.

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<tr>
<th>REPORT</th>
<th>PURPOSE</th>
<th>IMPLEMENTATION OF RECOMMENDATIONS</th>
<th>LANGUAGE/ETHICAL POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Nation Prepared 1986</td>
<td>Economic development</td>
<td>More capital input. Authors suggest difficulty in achieving goals concerning equal opportunity</td>
<td>Anthropocentric</td>
</tr>
<tr>
<td></td>
<td>Teacher preparation for economic growth. Democracy</td>
<td></td>
<td>Strong meritocratic orientation.</td>
</tr>
</tbody>
</table>

CULTURAL PLURALISM

<table>
<thead>
<tr>
<th>MAJOR CHANGES SUGGESTED</th>
<th>NATIONAL TESTING/ CURRICULUM</th>
<th>TREATMENT OF 4 LEVELS OF S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>More minority teachers needed</td>
<td>National board of teaching standards.</td>
<td>The environment is not mentioned. Equity between generations, species not mentioned. Relationship between nations has a neocolonial flavor. Equity within U.S. based on meritocracy - no change.</td>
</tr>
<tr>
<td></td>
<td>Five years for teaching degree. Certified lead teachers.</td>
<td></td>
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</tbody>
</table>
"A Nation At Risk" was produced by the National Commission on Excellence in Education in 1983 and is still one of the most widely quoted and referenced educational reform produced in the 1980's. The report begins,

"Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world." (p.5)

Although the authors of this report make little reference to teacher preparation, it is included in this review of educational reform literature because of its widespread popularity.

"A Nation at Risk" makes general recommendations providing implementing strategies pertaining to those recommendations. The authors essentially call for "more": more time in school, more homework, more challenging content, more evaluation, more money and resources applied to education, more study of foreign language, more critical standards of excellence, and more cooperation between federal, state, and local governments regarding education.

The authors provide very little of substance regarding the four levels of equity defining sustainable development. If the recommendations of the report were actually carried out, equity at all levels of sustainable development would decrease.

The report uses anthropocentric language describing laissez faire economic justice to education. The educational management and change suggested by the National Commission on Excellence in Education promotes a top-down hierarchical approach.
America 2000 - An Educational Strategy

America 2000 was a national educational strategy proposed by the federal government with the endorsement of President Bush and state governors (U.S. Department of Education, 1991). It is the federal government’s conclusions drawn from the "Education Summit" in Charlottesville, Virginia in 1990. The strategy adopted by this group of elected officials focuses upon six goals to be reached by the year 2000.

America 2000 suggests that little has changed since the publishing of a "Nation at Risk" in the early 1980’s. Concern is raised about the rising costs of education with no increases in student achievement. It is stated that the U.S. spends as much as any country per student on education, but U.S. students are in
the middle of the international pack when comparing achievement levels with students of other nations. It is also stated that employers must spend great sums of money on remedial training and often can not find qualified workers. Because of past educational failures it is stated that as many as 50 million people in the U.S. workforce are illiterate or require education to update their usefulness to the U.S. economy.

Little is said regarding teacher education other than to suggest that the America 2000 strategy will not work without quality teachers. The cultural diversity of teachers is mentioned, but no strategies are provided for how we might find more and better prepared teachers with the cultural background to match the cultural diversity found in U.S. schools. The strategy does mention the importance of the federal government providing loans and financial opportunities for students from lower economic strata so that these people might attend college. It was stated that the cost of a college education has tripled in the past generation as a percentage of the median family earnings in the U.S. The point is made that colleges must be accountable for the achievement of their graduates. America 2000 stresses that too little achievement is combined with increasing costs while the nation’s economy suffers.

America 2000’s goals include raising the achievement levels of students by introducing accountability. This is accomplished by requiring achievement testing in grades 4, 8, and 12. These tests would be measured against national standards in math,
science, history, geography, and English. Other strategies for improving achievement involve raising the level of school preparedness by ensuring that every child enters school with the proper background to become successful. The promotion of school choice for parents is also suggested as a means of allowing market principles to help schools become more efficient while parents and students exercise their democratic freedom of choice. Corporate America would be involved in the raising of achievement levels through their contribution to research and development efforts as applied to schools and the education process.

America 2000 calls for the establishment of 535 exemplary schools to serve as model schools for other communities to examine and copy. The number 535 comes from the number of representative districts at the federal level and demonstrates the political nature of schooling. These 535 schools would serve as models for the other 109,000+ school districts throughout the country. These schools would be "the best school in the world in this community." (p. 27). These schools would be found in America 2000 communities designated by the governor. These communities would get help in creating "New American Schools." The American 2000 community would have to: (1) endorse the six national goals proposed by the President and governors, (2) develop a community strategy for making those goals, (3) measure the results of their actions, (4) agree to support a New American School.

Treatment of sustainable development issues by the America
2000 report is limited to the application of economic principles of justice and management to the education process. Equity issues among nations is non-existent. Competition is stressed as is the return of American hegemony. Equity within the U.S. seems to be included by the emphasis upon Head Start. The report is recognizing the need to respond to inequities in opportunity if a meritocratic system of justice is to work fairly. The inclusion of these types of programs is not justified because of the need for equity, but is justified in terms of economics. At risk children cost too much money if they are allow to fail early in their lives. Nothing is said by the report concerning interspecies relationships. The emphasis on intergenerational equity involves the application of meritocratic and efficiency models of justice. The better the U.S. performs in global markets the better our lives will be. Loss of competitive edge will be detrimental to the next generation of Americans.

America 2000 is a highly political document in which the assumptions of economic efficiency are viewed as the solution to our problems. The approach applies engineering principles to education: quality control, quantification/accountability, efficiency, predictability/validity. These principles applied to education will improve the U.S. economic position. The report addresses school discipline, drop out problems, and at risk preschool children from the perspective of economic efficiency. Accountability is stressed through community report cards and national testing programs at grades 4, 8, and 12.
<table>
<thead>
<tr>
<th>Reform</th>
<th>Purpose</th>
<th>Implementation of Proposals</th>
<th>Language Ethical Position</th>
<th>Treatment of Four Levels of Sust. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>America 2000</td>
<td>Economic growth</td>
<td>Creation of 535 New Amer. Schools,</td>
<td>Anthropocentric model of equity accomplished</td>
<td>Intergenerational equity accomplished</td>
</tr>
<tr>
<td>1990 Federal + Governors U.S.</td>
<td>Private funding for R&amp;D</td>
<td>Community designation, funding</td>
<td>Economic justice providing</td>
<td>Equity among species not mentioned</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Equity among nations not a concern - return to hegemonic position emphasized.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Cultural Pluralism</th>
<th>Major Changes Recommended</th>
<th>National Testing</th>
<th>National Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentioned in context to teacher ed.</td>
<td>More accountability</td>
<td>Testing in geography, English, math, history, and science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National testing</td>
<td>Model school program</td>
<td>tests given to grade 4, 8, 12</td>
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<td></td>
<td>School choice</td>
<td>National goals for graduation</td>
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</table>

**Reform Literature's Impact Upon The Classroom**

Many of the reform mandates never reach the classroom. If sustainable development content is to be included in the curriculum, what factors should be considered?

Cuban (1990) used historical review of U.S. educational reform to suggest that reform reoccurs because: 1. dominant social groups prefer dealing with conflict of values with an educational forum rather than risk major changes in the organization of society, and 2. there is a strong belief that U.S. schools promote social mobility and therefore the opportunity for national harmony.

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In a history of public schooling in the U.S. entitled *Schooled To Order*, Nasaw (1979) provides a similar theme with the conclusion:

"The public schools will... continue to be the social arena where the tension is reflected and the contest played out between the promise of democracy and the reality of class division." (p. 243)

Goldschmidt, Riley and Pitner (1988) found that school districts' collective bargaining agreements often inhibit the inclusion of reforms in the classroom. Their findings go along with Holtz, et al, who describe typically liberal labor unions as "handmaidens of the status quo." (1989, p. 11). The findings of Goldschmidt et al, suggest the importance of school boards, administrators, and teachers unions in the inclusion of global education content.

Claybaugh and Rozycki (1989) analyzed the orientation of distinct groups of Americans on nine basic values. Their findings are based on results of Gallup and Times Mirror Corporation polls. Claybaugh and Rozycki demonstrate the need to form coalitions between groups regarding expectations of schools and the tasks to be accomplished by schools. They suggest that without consensus formulation, classroom practice will continue to lack direction and reform efforts will fail. They also provide statistical evidence which illustrates the tenuous connection between international competitiveness and claims of failure in U.S. schools.

This research found that students work and achieve alone and are required to learn through passive instructional styles. The teacher is the dominate factor controlling the activity and tone found in the classroom. Students and teachers are not emotional; and enthusiasm, laughter, and anger are restricted. Goodland’s findings suggest that even though student centered, critical thinking, and active learning styles are stressed in the reform literature, they are not found in the classroom. Following Goodlad’s findings, education in sustainable development content, issues analysis, and active investigation activities would not fit well with present classroom procedures.

Through historical review of educational reform, Schukar (1983) offers three reasons for global education content’s lack of impact upon the school curriculum. First, global education doesn’t reflect the dominant social and economic values found in the United States. Second, there is no consensus from various interest groups which would require a change in education toward a more world-centered approach. Third, global education content is often considered to represent the political values of the radical left-wing.

Many of the educational reform proposals suggest the need to become more competitive in both educational and economic settings. Kohn (1986) in No Contest reviews studies pertaining to competition, cooperation, and independent means of achieving goals. Kohn refutes four popular myths concerning competition commonly held in the U.S.: (1) competition is part of human
nature and is unavoidable, (2) competition is needed as motivation for us to do our best, (3) competition provides the best way to have a good time, and (4) competition builds character.

Kohn provides evidence suggesting that cooperation is more conducive to psychological and social fulfillment. The author stresses the need to replace structural competition in the U.S. and suggests that most people growing up in the U.S. are trained to compete and believe in competition.

Fullan (1982) provides an analysis of research on educational change in *The Meaning of Educational Change*. Fullan's analysis suggests that educational change is a process involving many complex, yet understandable factors. The author stresses that understanding what should be changed is no more critical than a knowledge of how to work within the change process. Fullan emphasizes that time must be allowed for the change process to occur, as educational change is far too complex to occur within a few months, or even a few years.

Fullan states the futility of arguing over whom is most important to the change process, and also states that the combined importance of students, teachers, building principals, district administrators, consultants, parents and community members, governments, and those involved with professional preparation. Fullan does, however, emphasize that the district administrator is the single most important person for establishing the perspectives and tone of educational change at
the local level. Fullan provides an excellent analysis of why most educational proposals fail to affect change in U.S. schooling.

Giroux and McLaren (1986) argue that teacher education must be viewed as cultural politics. The authors suggest that teacher education typically lacks the critical study of power, language, culture and history which are critical to participatory democracy. Giroux and McLaren indite the liberal reports by Goodlad, Sizer, and Boyer for not including an analysis of how power has been used to favor selected groups of students. The conservatively oriented writers are criticized by the authors for not encouraging preservice teachers to seriously critique social conditions and the classroom’s role in maintaining society and those conditions. The authors argue that teachers’ education must perform the role of enhancing teachers as transformative intellectuals with the goals of creating a critical citizenry required for the ethical decisions needed in a participatory democracy.
Chapter Five
A Review of State Teacher Certification

State certification requirements affect the courses which institutions will offer their students. As a result, the requirements for teacher certification in all fifty states is important to this study of preservice teacher preparation. State requirements were reviewed for their inclusion of course work or tested competence in areas which might include sustainable development. *Teacher Certification Requirements* by Goddard (1993) was reviewed for all fifty states.

Some problems resulted from this review because the teacher certification process in many states is discipline specific. As this study is concerned with the general preparation of K-12 teachers, the results of this review describe the general preparation of all teachers. Table 2 provides a state by state description of the teacher certification requirements regarding environmental education, multicultural education, global education, science/technology/society, ethics/equity/justice, and sustainable development for K-12 teachers.

A letter describing the nature of teacher certification requirements was sent to an individual responsible for teacher certification in each state. This letter asked for verification of the requirements described by Goddard (1993). These state education department administrators were asked if a state
Course requirements for teacher certification in Environmental Education (E.E.), Global education (G.E.), Holistic/Integrated Study (H/I), Ethics/Equity/Justice (E/E/J), Multicultural Education (M.E.), Sustainable Development (S.D.), and Science/Technology/Society (S/T/S).

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### Table 2. Teacher Requirements in courses which might contain sustainable development content.

* = some consideration is given to this type of content (these considerations are described in appendix 1.

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The competency testing program was mandated by their state regarding this content area. These officials were also asked for their comments concerning sustainable development content and their state's certification requirements. There was an 80 per cent return rate of this verification letter.

The results of this review demonstrate a general lack of sustainable development content coverage in the teacher certification process. There seems to be some concern with the preparation of teachers in multicultural dimensions. Nineteen of the fifty states require some type of preparation for their K-12
teachers in multicultural education. Minnesota, Hawaii, and Wisconsin appear to have more stringent requirements for K-12 teacher certification regarding sustainable development content.

A state by state listing of teacher certification requirements are found in Appendix 1. The coverage in appendix 1 is more complete than the information provided by Figure 2 of this chapter. This listing also provides some information concerning the discipline specific requirements and sustainable development content.

There is some homogenization of requirements across state boundaries because of interstate certification compacts which allow teachers more flexibility in preparing to teach in more than one state. However, state education bureaucracies maintain control over the certification and often require a number of items in the application process. These items may include (Goddard, 1993):

1. An application form.
2. A fee (from none to $175).
3. Official college transcripts.
4. Photocopies of certificates held in other states.
5. Letters from past employers
6. Official scores from the National Teacher Examination.
7. Fingerprint cards
8. Recommendations from the institution from which the individual received teacher education.
10. The original certificate held in another state.
13. U.S. citizenship papers
15. NCATE program completion validation.
17. State Sponsored Testing Program-areas not covered by NTE
Discussion

The results of this review are consistent with the findings of the institutional survey on teacher preparation in sustainable development content and the review of recent reform literature. There is little emphasis placed on course work or tested competency in this content area. Course work is generally not required and goal statements for the education of teachers don't mention the concepts which sustainable development would depend upon. Similarly, tested competency is not required for teacher certification through NTE or through specifically designed state testing procedures.

There is little or no emphasis upon the ethical aspects of teaching found in state certification requirements. Several states require ethical foundations in a teacher code of ethics, or require teachers to read such a code. Leming (1993) has observed that didactic methods such as codes or required teacher statements concerning ethical conduct have no significant long term impact on character. The lack of requirements regarding ethical issues and teaching as an ethical undertaking are noteworthy and disturbing. Although there seems to be increased attention in schools for character education (Lickona, 1993), there is nothing in the state requirements which mirrors that attention.

Tests are occasionally required which demonstrate a teacher's competency in reading, writing, and mathematics. But, ecological literacy is generally not mentioned. In addition, the
ability to communicate with students is critical to teaching, yet, there is no test of communicative skills other than writing competency. Although a personal interview might suffice for testing a teacher’s ability to communicate verbally, this type of testing involves adults and not the children with whom teachers must communicate.
Chapter Six
Literature Review Of Teacher Preparation In Sustainable Development Content

Teacher education preparation is an important component of the education of U.S. school children. Because teachers play a prominent role in the enculturation process, the education that teachers receive in sustainable development issues is an important factor regarding the coverage of sustainable development content to U.S. children. Preservice teacher instruction concerning the four equity levels of sustainable development will impact the values through which future generations will view environmental and development issues. Although there are many factors that will impact future perceptions and values, preservice teacher instruction must be questioned and examined to allow a more complete view of societal goals and corresponding educational orientation.

In this chapter I will review pertinent literature concerning U.S. teacher preparation. The section begins with an examination of the general state of teacher preparation. Then specific teacher preparation in moral education, environmental education, global education, and human rights education is covered. Moral education is divided into direct and indirect educational processes. Because sustainable development content crosses disciplinary boundaries it is essential to view efforts in teacher preparation from the perspective of these different areas.
The chapter concludes with a review of some literature concerning implementing educational reform. Because teacher preparation concerned with sustainable development content would be a radical departure from the typical content structure, there is a need to look at the implementation of reforms in education. This concluding portion of the literature review combines the review of reforms and current teacher preparation practice.

**Teacher Preparation In The United States**

The improvement of U.S. teacher preparation has wide appeal and is generally accepted as an essential component in improving the education of American youth. But, even with widespread agreement on the need to improve teacher preparation, there exists a great deal of disagreement over what goals teacher education should address. This part of the review on preservice teacher preparation describes the literature related to general issues of teacher education.

Bottery (1990) suggests, for instance, that education often calls for four very different codes of education. These codes dictate very different types of knowledge being valued, different roles for both students and teachers, varied societal focus, and widely divergent ethical justification of behavior. Bottery describes the four different educational codes as cultural transmission, child centered, social reconstruction, and GNP oriented.

In Bottery’s cultural transmission code, cultural heritage is valued, students are passive, teachers take guardian roles,
and an elitist, static, and objectivist orientation is maintained. The child centered code values knowledge based upon a child’s orientation. In this code the child is an active participant in the creation of their own reality as facilitated by the teacher. Although the child centered code is egocentric and relativistic in its orientation, community goals of democracy and response to criticism are also stressed. The Social reconstruction code is an issues focused approach in which the students are actively involved through interaction with others. The teacher in this code is once again a facilitator and a guardian of values from the past. The stress in the social reconstruction code is upon rational critique of societal values and a democratic approach to change.

The final code described by Bottery is the GNP code which stresses the importance of the nation’s economic well being and the primacy of scientific and technological advance as a means of national economic and military power. The GNP code views the student as a cog requiring training to fit the nation’s economic machine, while the teacher is a trainer and low standing member of societal hierarchy. Content in this code is transmitted by means of “teacher proof” packages. Schools are organized in the GNP code following industrial models of hierarchy and obedience.

It is essential to understand the underlying assumptions inherent to these different codes as these assumptions greatly impact the forms and direction of teacher education. Societal leaders often use education as a scapegoat to avoid dealing with

All four of the orientations described by Bottery involve democracy, individual freedom, achievement, and well-being. The result is a barrage of rhetoric that clouds education's role in the pursuit of individual and societal goals. This rhetoric also serves to obscure the ultimate purpose or orientation of our other social institutions.

Su (1992) examined the view held by preservice teachers and their instructors concerning what they believed schools were for. Su described that survey in "What Schools Are For: An analysis of Findings From a U.S. National Survey." The author conducted this research in conjunction with the research of Goodlad, et al, (1990b). Su found that liberal beliefs concerning the purpose of schools are predominant regarding the purpose of schools for both students and teachers.

Su found that the radical viewpoint was endorsed by a small percentage of those surveyed. The author also found that the programs tended to be more conservative than either the student or faculty associated with those programs. Su stated that the individual agenda promoted by basic skills education is considered more important than social goals of enculturation and participation in U.S. democratic processes. Su also found these students seem to adopt the value positions of their cooperating
teachers. It seems that even though preservice teachers express an individual purpose for schooling, they are strongly enculturated themselves by their cooperating teacher.

In addition to disagreement over the goals that education should pursue, there is a great deal of disagreement over the form or structure preservice teacher education should take. There are even those who feel that teacher education should be removed from the course offerings at the undergraduate level (Damerell, 1985). Damerell criticizes the present structure of teacher education suggesting a lack of rigorous disciplinary knowledge. The result, Damerell suggests, is a group of "educational illiterates" who do nothing but perpetuate U.S. educational inadequacy. Damerell points out the failure of educational specialists to investigate schools of education as a primary factor in the failings of U.S. school. This sentiment is not new as Egbert (1985) demonstrates in a review of teacher education critics from the 1950’s and 1960’s.

Leonard and Leonard (1990) agree with Damerell (1985) in their critique of present teacher education in "Contemporary Teacher Preparation Programs are Inadequate For the Twenty First Century." They suggest the inadequacy of certifying teachers with only a bachelor’s degree and an appropriate score on the National Teacher’s Examination. This method of teacher certification suggests to the authors that teacher education has very little to offer and may be skipped. The authors state the need for much more research into what and how instruction takes
place. They assert that teaching will not become a true profession until teacher education attacks the problem of what teachers should know and how they should perform. Training by apprenticeship or a simple test is not enough rigor to enable schools of education to justify their existence. The authors also stress the need for more research concerning teaching knowledge and teacher education.

Egbert (1985) describes some of the problems associated with teacher education in "The Practice of Preservice Teacher Education." The author reviews the criticism received by teacher education both from inside and outside the teaching profession, suggesting that there is plenty of blame to go around. Teacher educators, college administrators, and state governors, legislators, and education bureaucrats all share in the blame for the problems associated with teacher education. Egbert warns against substituting "test scores for serious evaluation of our students, course credits for program rigor, and teaching apprenticeships for clinical programs of teacher education." (p. 24)

Kennedy, M. (1991) suggests three unique problems related to teacher education. The first involves a problem of representation, or how to attract potential teachers who reflect the students in our schools. Second, the problem of acceptable teacher knowledge. This problem refers to the importance of insuring teacher competence and intellectual capability. Kennedy's final problem associated with teacher education asks
how to improve the level of instruction once capable and representative people are hired.

Kennedy states that educators have focused more on ensuring tested capability than upon the other two problems. The author also suggests that even though the problems are related, solving one of the first two problems doesn’t necessarily mean that classroom instruction will improve. Kennedy’s analysis points out the complexity involved with solving teacher education problems and that we should not be seduced by the simplification of either educational problems or solutions.

Godet (1988) offers eleven major crises affecting education in "Worldwide Challenges and Crises in Education Systems." The author’s global analysis is relevant to U.S. teacher education as many of the worldwide trends are parallel to those found in the United States. Godet states that these crises form a backdrop for future societal directions and decisions. It is suggested that the eleven crises are strikingly similar across international boundaries. These eleven qualitative questions demonstrate not only a challenge to the nature and purpose of schools but society in general.

Godet’s crises are similar to those described by Bottery (1990) and Kennedy, M. (1991) in that there is confusion over the ultimate purpose of education specifically and of societal goals in general. A crises of teacher quality and teacher selection are also described by all three authors. Another problem mentioned by Godet involves the illusion of egalitarian and
meritocratic nature of schools. The author suggests that academic success is closely linked to social origin in all countries. The bureaucratic structure of educational systems is also seen as an obstacle to Godet. Other crises listed by Godet are: lack of social status for teachers, the expectations of schools far outreaching their capabilities, the lack of funding, and both the inadequacy and over-abundance of information.

Apple and Jungck (1990) provide a different perspective on the problems of U.S. education in "You Don't Have to be a Teacher to Teach This Unit: Teaching, Technology, and Gender in the Classroom." The authors state that the reality of most teachers' days in the classroom is far removed from educational reform literature. Reform rhetoric suggests teacher empowerment and autonomy, but the reality of teacher's lives is one of standardization, control from outside the classroom, and centralization. These realities lead to increased pressure on teachers in regard to accountability and efficiency. Teachers often lack control over how they will perform their jobs and how they are evaluated.

Apple and Jungck suggest that extensive curricular demands make the inclusion of curricular packages common practice. There is so much to cover in so little time, teachers are often forced to use curricular packages that degrade and deskill them. The authors draw the parallel between the deskilling that occurs to teachers and the depowerment and deskilling associated with "women's work."
Apple and Jungck suggest that competency testing so common across the U.S. requires teachers at all levels of education to adopt a "teach for the test" methodology. This methodology combined with increased curricular coverage takes control out of the hands of skilled teachers. It is typical that required content is not taken away from a teacher's responsibility, but ever increases. External control of content, teaching, and evaluation results in educational orientation on factual knowledge and not upon high level thinking skills. The students receive content that stresses "that" and low levels of "how," but get very little "why."

Apple and Jungck also suggest that many women in U.S. culture are forced to perform not only their work at school as teachers, but also the work involved with maintaining a household and family. Because the work in this second job is typically not shared equally with their spouse, many female teachers are drained of energy and enthusiasm. This lack of energy leads them to more readily accept the curriculum packages and centralized control over their classroom teaching.

In reference to the impact of state requirements for teacher certification, Evans, Dumas, and Weible (1991) performed a national study of the professional preparation of elementary teachers. The authors found little change in the professional course requirements placed on institutions by state regulations from the authors results of research done in the early 1980's. Comparison of these studies illustrate three areas of course
requirements increasing during the 1980's at both secondary and elementary levels. The areas include course work or competency requirements in multicultural relations, discipline, and evaluative methods.

In another description of their study Dumas, Evans, and Weible (1990) describe the minimum general educational requirements for elementary teachers. The authors suggest that their findings demonstrate no significant change from a 1984 study done by Dumas and Weible. It is noteworthy that only 33% of the states responding in the Dumas, et al, study require course work or competency in multicultural studies, only 6% require global or international studies, and environmental studies was not even listed.

As suggested earlier in this review, the move toward national testing has be a common topic in issues concerning teacher preparation. Pultorak (1991) investigated the relationship between the National Teacher Examination (NTE) and measures of teacher performance. The author found that scores on the NTE test are more strongly related to the coursework taken by preservice teachers than to performance in the student teaching experience.

Filippo (1986) reviews the states using Educational Testing Service (the service responsible for NTE) and the National Evaluation System. These organizations provide nationalized tests for use in testing teachers. Filippo states that nationalized tests are used to respond to issues concerning the
quality of teacher education programs and the students in these programs, the selection process of teachers by school districts, and the public’s image of schools and teachers. Filippo describes problems associated with national testing and recommends that teacher certification testing is no solution regarding quality selection, or the public’s image of teaching. The author endorses minimizing the use of testing, and suggests the use of tests prior to entry into the teaching major. Filippo describes the detrimental impact of attempting to solve public educational problems through nationalized testing programs.

Levin (1990) describes economic forces affecting teacher education in "Economic Trends Shaping the Future of Teacher Education." The author stresses the economic or GNP orientation of much of the educational reform literature. The most recent trend in the U.S. economy has involved a great increase in the international orientation of our economy. Levin suggests that U.S. teacher education has not kept pace with economic internationalization resulting in an under-educated public concerning other cultures.

Levin also suggests changes in teacher preparation to meet two pressing issues. First, change is required in preservice teacher education to prepare the U.S. workforce to match the demands of international competition. Second, teachers must be better prepared to handle the rising number of at risk students entering U.S. schools. The author also states that education must adjust to meet the changing technology impacting our lives.
Levin concludes that economic forces have historically dictated the course of education and of schools as workplaces. The author warns, however, of founding changes in teacher preparation solely upon economic criteria. Balance must be sought in creating an agenda for U.S. teacher preparation. Levin stresses the need to accentuate the democratic purposes of schooling. As environmental impacts are included in an index of sustainable economic welfare (Daly and Cobb, 1989), Levin suggests that education follow economic forces and include sustainable development content.

Evertson, Hawley, and Zlotnik (1985) review the research concerning teacher education in "Making a Difference in Educational Quality Through Teacher Education." Their review suggests several directions for future teacher preparation: (1) It is important that new teachers receive continued instruction during their first several years of teaching. (2) Raising the qualifying standards for acceptance into teacher education and efforts to test prospective teachers does not represent a reliable way of predicting effective teaching. The authors found that tests of preservice teachers verbal ability might provide more success in predicting teacher success. (3) Raising minimum standards for acceptance into teaching will serve to restrict the numbers of people moving into the teaching profession and will have a dramatic negative impact upon the number of new minority teachers. (4) No research evidence suggests that a broad liberal studies background results in
improved teacher effectiveness. In a similar fashion, more complete knowledge of subject matter past the minimum required for certification doesn't necessarily make an individual a more effective teacher. (5) The practice teaching procedure required at most colleges is probably over-rated. Although this experience could be very positive, the costs of implementing effective student teaching probably makes finding other options more attractive.

Evertson, Hawley, and Zlotnik provide analysis which questions the efficacy of most reform proposals. The authors state, however, that their analysis does not provide an adequate defense of present practice in teacher preparation either. They conclude with suggestions for future direction of teacher preparation. The most significant of these suggestions includes a one year internship in a "teaching school" followed by a one or two year induction period. During this induction period new teachers would receive instructional support from the schools employing them.

Goodlad, et al, (1990b) uses historical analysis to begin their description of teacher education in Places Where Teachers Are Taught. Goodlad identifies six historical themes that have evolved over time: (1) patterns of stability and change in the leadership of teacher education programs and the institutions housing them, (2) changes in institutions, (3) a destructive social structure within the institutions, (4) a fragmented curriculum consistent with the disconnection found in the
structure of the institutions, (5) a lack of connection and interaction between theoretical knowledge and practical application, and (6) a failure to focus enough time and resources to the needs and challenges of urban education.

Goodlad, et al, conducted a five year research into the history and trends shown by twenty-nine institutions and the teacher preparation programs found at those institutions. In addition to historical review, the authors surveyed and interviewed faculty, administrators, and students. They also observed education classes and student teachers teaching in local schools. Because of the inclusive nature of their research, their findings and discussion will be reviewed extensively.

The authors found that the mission of teacher preparation schools was often defused because of the gradual loss of long-term deans heading education schools. These influential leaders were replaced with deans who were made to answer to short term economic concerns. While long standing educational deans were being replaced, the normal school was changing from an institution focused on teacher preparation to an institution with a research and graduate school orientation. Accompanying this transformation of focus was a gradual change in college presidency from individuals familiar with and receptive to teacher education to presidents lacking commitment to education. These newer presidents valued research, graduate programs and areas of study more intellectually in vogue.
College campuses have evolved academic domains of specialization which result in an increasing specialized and fragmented education. These academic domains are protected by political in-fighting, as the various disciplines fight for their share of college resources. Through the changing focus of presidents, provosts, and deans; undergraduate education programs lost their status and support.

Goodlad, et al, also point out that state regulation limits the opportunity for innovation and stifles creativity in initiating new education programs. These rigid requirements serve to maintain the status quo and stagnate teacher education. State influence stimulated the trend toward quantification and vocationalism in meeting evaluative and economic needs while serving to maintain societal structure. Goodlad, et al, point out that in no area of higher education does the government have more influence than in the certification of teachers. The authors continue by asserting that control of certification amounts to control of the discipline.

Goodlad, et al, also make the point that historical review demonstrates a lack of interaction between theory and practice. Goodlad blames the lack of connection between schools and colleges. This lack of connection was then exacerbated by the impact of state regulation.

Goodlad, et al, also discuss the lack of commitment to urban education. Student teachers are not placed in unsafe urban schools, minorities are not represented by either the students or
instructors of education departments, and issues of racism are not broached. Kozol (1991) provides a uncomplementary picture of public schooling in urban areas around the United States. Kozol stresses the unequal funding found in urban areas. Kozol suggests that in spite of higher taxation rates in urban areas and state funding, urban areas often spend thousands of dollars less per student than do the suburban school districts found only a few miles from urban schools.

Goodlad, et al, believe that as the status of the university goes up, teacher education status within that university goes down. Publish or perish pressure exerted on instructors involved in teacher preparation programs add to the lack of emphasis upon effective teaching in the colleges themselves. The authors correctly state that we often teach as we have been taught. The college classroom, as the last place a preservice teacher is involved as a student, can have an important impact upon the behavior of teachers as they begin working in schools. It was obvious to the researchers that universities don’t have their own house in order, as the quality of instruction found in the colleges visited was inadequate. Boyer (1987) provides a similar instructional picture in a study of undergraduate education entitled College. Boyer goes on to stress that most college instructors are exceptionally weak when it comes to evaluating their students. This weakness results in an overemphasis on competition and lower level thinking skills.
In the concluding chapter of *Places Where Teachers Are Taught*, Soder and Sirotnik present the theme of competition as being overwhelmingly present in the twenty-nine institutions visited. Competition in the form of fights over college resources, faculty teaching lines, and space. Competition between disciplines for high quality students. Competition with other institutions for control over mission and jurisdiction, and competition for status both at a disciplinary and an institutional level.

In light of Gilligan’s (1982) research *In a Different Voice*, concerning gender roles and the importance of relationships, the competition that provides an underlying theme of teacher education is well out of line with the loving, nurturing and focus upon relationships required of teaching. Glasser (1990) makes the same point in *The Quality School* concerning the need for less competition and a removal of the coercive and dominating manner in which schools manage children. Kohn (1986) analyzes the research concerning competition in *No Contest* and concludes that competition is universally stressed in American society. This author states that people in the U.S. are trained to compete and believe that competition is the best answer to our problems. Kohn stresses the underlying theme of competition is that success for one person can only come if another person fails. Kohn believes this underlying theme leads to unhealthy individuals and unhealthy individual and societal relationships.
Teacher Education As A Moral Undertaking

The coverage of education in sustainable development content can not be limited to discussion of moral education as a special topic area such as environmental or global education. It is assumed by this study that the education process can't be simply divided into content and pedagogy. Teaching as a moral endeavor is as much a part of education in sustainable development content as the content itself.

Sustainable development content is by definition an ethical study of environment and development issues which concentrates on power relationships. The education process is an integral part of these power relationships with education also defined as a moral endeavor. Change in the education of teachers involves ethical decisions both at the content and process levels. As a result, teacher education involves a complexity of issues involving the what, where, how, and why of teaching.

In this part of the literature review I will look at education as a process involving ethical decision making. Education is an ethical process because of such issues as grades, discipline, resource allocation, taxation rates, school district spending per student, school and teacher certification, standardized testing, allocation of teacher time and reinforcement, curriculum selection, and many other issues. Because viewing education as a moral process differs from the way in which writers have approached moral or civic education, the two will be separated in the review. Moral education as a
specific curriculum will be included in the next portion of the review.

One of the most influential descriptions of the theory behind ethical instruction in schools was produced by Emile Durkheim (1973) in *Moral Education*. Durkheim stressed that schools were the means by which society ensured cultural transmission and thereby maintained societal survival. The first step in this process, according to Durkheim, is the imposition of societal discipline upon the child. Durkheim believed that regularity of conduct and the application of authority are essential components of morality. These components make up discipline which the author considered the cornerstone of morality.

Durkheim believed that discipline was more than just constraint and required the individual to enter into the order of social organization. The author also believed that discipline was needed to restrain the individual from the frustration of unreasonable aspiration.

The second major component of moral action according to Durkheim was commitment, attachment, or identification with a group. Durkheim felt that both discipline and commitment to a group are coercive. Discipline requires us to fulfill our duties to society while our attachment to a group makes that coercion seem worthwhile.

The third component of Durkheim's theory of morality involves autonomy. Because the individual has the ability to
predict and understand the outcomes of their behavior, they become autonomous.

Durkheim believed strongly in the rational nature of scientific inquiry, and also that the place of morality should be in the school. He viewed the church as a source of morality through revelation not reason, and therefore an inappropriate source of morality. The family was viewed by Durkheim as incapable of objective or rational application of moral education.

The impact of Durkheim is still felt in the area of moral education. His stress upon the societal foundations of morality provide a strong counterpoint to many of the present individualistic theories. Durkheim felt that the conflict between the coercion or domination of power and the stress upon societal equity through equality of opportunity created the playing field upon which societal morality develops.

Mathison (1991) describes the ethical considerations involved with testing in "Implementing curriculum change through state-mandated testing: ethical issues." The author suggests that the use of standardized tests is presently used by most states to control the process of schooling. States use tests to promote and group students, determine who can teach, and who can graduate. Mathison describes testing as a cornerstone of educational reform in the United States. The author then lists seven principles describing the influence of standardized tests. Noteworthy among these principles are the observations that
teachers will eventually adjust their teaching for the test, the test becomes an ends rather than an evaluative tool, and most importantly, the test transfers control over the curriculum to the group that produces the examination. The perception of the students, teachers, and administrators concerning the tests are of more important than than the reliability or applicability of the test.

Mathison states that the use of state-mandated testing finds basis in utilitarian ethics. The author suggests the implications of this utilitarian orientation is that the burdens placed upon both students and teachers are not considered. The tests often don't reflect the actual curriculum, the time spent preparing for the test, or the financial burdens imposed upon the school. Standardized testing often takes students and teachers away from engagement with more important facets of the educational process.

Mathison describes Rawl's liberal ethic for the distribution of consequences. The author also describes the feminine orientated ethic of caring. This ethic shifts the focus from utilitarian consequences to relational consideration where the relationships between the humans involved are the primary goal. The ethic of caring focuses upon the needs of others, moving away from the primarily masculine notion of rights and justice.

Mathison suggests that it is an individually oriented ethic of care which needs to be fostered in our schools. This ethic considers the consequences of testing on both students and
teachers. By rejecting testing as a means of domination and control the teacher and student may enter into a relationship where individual and social growth may occur. This strategy depends upon the trust that teachers can handle the responsibility of care entrusted to them.

Harris and Longstreet (1990) describe the advantages and disadvantages of standardized testing through a review of the literature governing standardized testing in "Alternative Testing and the National Agenda for Control." The authors concentrate on the educational and political impact of testing. They state that the stress on accountability has more to do with a locus of power and control over education than it does with the pursuit of excellence. The authors suggest that achievement tests offer the illusion of accountability while diverting attention from the reasons for academic failures. Tests are described as agents in the trivialization of knowledge, but important as a multibillion dollar industry in the United States. The authors suggest that the advantages of standardized testing as a measure of accountability for educational leadership, politicians, and the public must outweigh the disadvantages as judged by the increase in use through the 1980's.

Harris and Longstreet state that 100 million standardized tests were administered in U.S. schools for the 1986-1987 school year. For instance, 75% of the schools in New York State use standardized tests to test their kindergarten children. The authors state that all that is gained from standardized tests is
an improvement in the student's test taking skills. It is stressed that the industrial model of educational organization and the capitalistic notion of monetary award for high test results are an inappropriate model for the understanding and caring required of future generations.

Harris and Longstreet cite research exposing the Stanford Achievement Battery as including questions requiring inferring - 6%, summarizing - 2%, ordering - 6%, transposing - 4%, representing - 7%. Low level retrieving skills involving the recall of information was required in 100% of the questions on this test, however.

Harris and Longstreet propose an open ended alternative to the business model of standardized testing. Instead of the standardized predetermined output of industrial models the authors suggest an evaluative model allowing for high-level reasoning, diversity of thought and behavior, and creative thinking. These evaluations would be open ended, locally administered, and scored in a way that allowed the evaluation to become part of the learning process. The authors stress the need to take educational testing away from national politics and place it with the local educators.

Bok (1990) devotes a substantial portion of *Universities and the Future of America* to moral education and the reinstitution of a moral agenda for U.S. universities. The author chronicles the demise and rebirth of moral education suggesting that the obligations and responsibilities that must balance the individual
rights and economic orientation of most Americans is lacking. Bok uses examples from family, work, society, and participation in government to illustrate the points made concerning the loss of a sense of moral obligation in the United States.

Bok points out the lack of confidence most North Americans feel concerning the people on the top of our political and business hierarchies. The feeling of personal obligation generally extends from a commitment of care for others and is fostered in an atmosphere of trust that others will return that obligation. The trust that the privilege accompanying higher positions of U.S. social structure will be tempered with concern and obligation to ensure the welfare of those without privilege.

Bok views the U.S. university as being in need of change resulting in civic responsibility and communal obligation. The author characterized the 19th century undergraduate experience as being committed to the development of character development and service to the community. Bok suggests that the evolution of research institutions in the 20th century lead to moral education being removed to the theoretical and abstract. Moral education was also removed from the discussion of real life problems. Bok states that by the 1960's general education for citizenship was by far the least successful of the general purposes of higher education in the United States.

Bok describes present courses in applied ethics as an effort to have students consider complicated moral issues. The author states that one of the problems associated with these courses is
the requirement that instructors be versed in both ethical theory and the area of practical application. The typical approach in applied ethics is to allow the instructor to foster student reflection without imposing their personal position. This approach avoids conflicts with the principles of academic freedom, duty, and unfortunately fosters moral relativism. Bok stresses the need to find a balance between indoctrination and moral relativism.

Bok also suggests that presently little effort is made to make students aware of the power that comes with the acquisition of special expertise. Without learning to use power with a sense of obligation, responsibility, and care, the student's education remains incomplete. Bok recognizes that little correlation exists between ethical beliefs and behaviors, but stresses the positive impact applied ethics courses have upon the quality of moral reasoning. Bok also states that societal moral standards are not just shaped by individual members, but by the community of which the individual is a part. The author is suggesting that the whole is greater than the sum of its parts.

Bok asserts that too much of college life is centered around competition, and that cooperative and complementary work and play need to be fostered by the university. The author states that the university can initiate a moral agenda by (1) supervising programs of community service, (2) explaining the reasoning behind rules of conduct and involve students in the creation and administration of these rules, (3) explaining the university's
position pertaining to current moral questions, and (4) providing
the opportunity for moral investigation through courses in
applied ethics. Moral education has the feel of indoctrination
and is easy to ignore on a campus that champions academic freedom
while at the same time harbors strong sentiments of liberal,
conservative, and radical values. Bok suggests that because of
this pluralistic moral atmosphere, moral education is even more
imperative.

Bok states that universities must do a better job of
addressing the issues requiring obligation and care. The author
suggests the universities are too easily swayed by the influence
of immediate finance and not attentive enough to serving the
nation’s and their community’s long term needs.

One of the arguments often heard for excluding moral
education from the college curriculum suggests that if students
don’t know the difference between right and wrong by now, they
will never know it (Bok, 1990). The research of Bakken and
Ellsworth (1990), "Moral Development in Adulthood: Its
Relationship to Age, Sex, and Education," suggests a different
answer, however. The authors found that both male and female
middle age adults continued the development of moral judgements
as measured by Kohlberg’s stages. The researchers used
Kohlberg’s Moral Judgement Interview to determine this
development. Age, sex, and education were found by Bakken and
Ellsworth to provide indicators of the ability to apply morally
reasoned responses.
Goodlad, Soder, and Sirotnik (1990) edited a series of essays on *The Moral Dimensions of Teaching*. These essays are an extension of their research found in *The Places Where Teachers Are Taught*. Three of these essays will be reviewed.

Goodlad (1990d) describes the present nature of teaching, the teaching profession, and teacher education "The Occupation of Teaching in Schools." Goodlad suggests that schools have a moral role to play in society as they must provide for the enculturation of the nation's youth, provide access to knowledge to all members of society, mediate the power/control relationships between students (whose attendance is required) and teachers, and to mediate change in societal direction. Goodlad further states that these moral roles take place with layers of context which can not be understood by scientific analysis.

Renstermacher (1990) stresses the moral nature of teaching in "Some Moral Considerations on Teaching as a Profession." The author states that teachers must use their expertise for the betterment of the group. Renstermacher also stresses that teachers must provide a moral example and moral direction for those students over whom they have control.

Sirotnik (1990) discusses five ethical roots of the moral responsibility of teaching in "Society, Schooling, Teaching, and Preparing to Teach." Sirotnik believes that these five roots go even deeper into human nature than the power relationships so apparent in schools. The five roots of the ethical nature of teaching are: (1) the moral commitment to rational inquiry, (2)
the circular nature of knowledge and inquiry, (3) the commitment to competence, (4) the empathetic relationships involved with caring, (5) the concept of social justice as fairness and the freedom to pursue a state of well being. Sirotnik states, "Inquiry without knowledge is fraudulent. Knowledge without inquiry is impossible." (p. 299)

Sirotnik suggests that teacher education is an ethical process of character development rather than simply an extension of knowledge or pedagogical skills. The author asserts that commitment to the five roots listed above require that schools of education have a moral responsibility to reorient themselves to be worthy of being termed professional schools of study.

Strike (1990) reasons that ethics for teachers is not a form of moral education in "Teaching Ethics to Teachers: What the Curriculum Should be About." The author states that: (1) professional teaching ethic does not have the same goals as moral education, (2) much of what is learned by preservice teachers is picked up by the implicit or hidden curriculum inherent in all teaching, and (3) moral concepts are critical to effective teaching and efforts must be made to make the cognition of these concepts directly applicable to practical, realistic cases.

Strike suggests that the three points listed above concerning the teaching of ethics to teachers are important because a teacher works almost entirely in isolation in the classroom. Teachers will rarely ask help from peers or administrators on ethical issues of teaching if these issues will
make them appear incompetent or lacking control. Because of the isolation of teacher's work, they are usually alone when dealing with ethical issues. In addition, there is little or no material written to help them through these moral dilemmas.

A background in professional ethics is even more important when considering the fact that teachers deal almost exclusively with children who are essentially powerless subjects. Although students are aware of what is happening to them in the classroom, they are often not aware of the ethical implications of the teacher's activities. Even when a student is aware of the ethical ramifications of classroom activities, they may not be in a position to express themselves either because of their powerless position or because of peer pressures to avoid collusion with authority figures.

Strike contends that the moral decisions made by teachers involve grading, distribution of their time to students, discipline, content and program commitments, and decisions about young people with very little power, and great vulnerability. Strike concludes that these decisions require that teachers reason ethically in the areas of due process (discipline and grading), equity (allocation of time and resources), and striking a balance between fairness, effectiveness, and efficiency. Other decisions involving the teaching as an ethical undertaking are the teacher as an ethical model of authority, the balance between administrative directives, the well being of students, the protection of student's property, and the
maintanance of individual student autonomy.

Strike emphasizes the comprehension of concepts of "due process, equity, privacy, intellectual honesty, freedom of expression, and legitimate authority." (p. 53) The author believes that teachers need to understand the issues raised by the moral dilemmas they face in their classrooms and will be helped by thinking through and expressing their positions on difficult issues.

Ryan, K. (1988) suggests that teacher education should include more than the present disciplinary study and pedagogy. Ryan stresses the teacher's role in the maintainance of societal values in "Teacher Education and Moral Education." The author asserts that no one theory of moral education can suffice and that most one dimensional efforts such as discussing ethical issues are only marginally successful.

Ryan describes seven areas of competence teachers require to aid student's moral development. First, the teacher must represent a moral model to their students. Second, the teacher must be committed to the moral development of their students. This commitment must be balanced to avoid boring moralizing. Third, the students must be guided to develop a picture of how their lives ought to be. Fourth, teachers must be able to demonstrate to students the ability to take a stand on ethical issues and clearly reason their position when appropriate. Fifth, each teacher must encourage a sense of empathy and care for the suffering and the less fortunate. Sixth, the classroom
must provide a moral climate which will instruct children in the social discipline required of life in the United States. Seventh, teachers must provide students with the experiences which will show them how to live moral lives.

Ryan asserts that because morality is not rhetoric or stages, teachers need to commit to moral behavior and provide opportunities for students to become involved in moral behaviors of their own. Ryan’s descriptions of seven competences required for teachers concerned with moral education are an illustration of teaching’s moral nature. The author concludes by asserting that teacher education must address these seven areas of competence.

The Moral And Spiritual Crisis In Education by Purpel (1989) is a strong statement of the need for the inclusion of morality in the education of U.S. children. Purpel chastizes current educational reforms as being trivial because educational leaders have not addressed the critical social, economic, and political issues facing humanity. Purpel states that content and pedagogy must connect to create increased understanding and practice in areas of ethics and social responsibility.

Purpel criticizes our present educational structure for providing students with a mind set where they are more concerned with grades than meaning. The author states that grading creates a gap between students and teachers which represents a coercive power relationship. As long as grading remains a summative means of establishing hierarchy and not a formative part of the
learning process, grading will continue to be an important factor in the indoctrination of students into a mechanistic and meritocratic mentality. Purpel states that those not wishing to deal with societal issues will suggest the need for solving our educational problems. The author suggests that these educational problems will be defined by those avoiding societal issues as technical in nature.

Purpel emphasizes the need to direct educational content and process to a vision of "democracy, compassion, justice, equality, freedom, and joy" (p. 137). The author demonstrates how the present educational structure in the U.S. promotes individuality, elitism, competition, authoritarianism, and materialism. Purpel goes on to suggest that the organization of the curriculum around subjects and disciplines limits inquiry and the active pursuit of liberation. The author states that education should focus upon dilemmas both at abstract and practical levels which concern abundance, joy, freedom, justice, and peace. Allowing students to investigate and act upon questions pertaining to these central societal issues would lead to a much more meaningful education. Clearly Purpel's model provides a framework centered upon ethical issues and as such represents a meaningful model for education in sustainable development content.

Moral Education For Teachers

It is not easy to distinguish between literature that describes teaching as a moral endeavor and moral education. Even though there is a good deal of overlap in these conceptions of
morality and education, in this portion of the review I will look at literature that describes specific approaches to moral education. These approaches involve either direct or indirect structures, but the emphasis is upon the moral development of students.

Beringer (1990) describes the use of narrative techniques in "Understanding Moral Development and Environmental Values Through Experience." The author emphasizes the cognitive, emotive, and behavioral aspects of morality and suggests a weakness in Kolhberg’s theory of moral development because of its overdependence upon the cognitive aspects of morality. The research of Gilligan (1982) was also reviewed by the author and viewed more favorably because of its avoidance of stages and its balance between emotion, cognition, and behavior.

Following Gilligan, Beringer describes two distinct moral voices: an ethic of care, and an ethic of justice. The recognition of these different voices forms the basis for a narrative approach which allows an individual to tell their own moral story. The narrative approach demonstrates the uniqueness of human life and the complexity involved with understanding moral decisions.

Beringer states that most philosophers use a deductive approach as they search to develop a theory of environmental ethics then teach the principles that support that theory. The narrative approach is described as following an inductive method through which the people’s accounts of moral decisions and
behaviors are analyzed by researchers and the individual. Through reflection the individual gains insight into living harmoniously with nature. The narrative approach is personalized to the different voices of morality found in each individual and not limited to the concepts of fairness and justice. The approach also stresses behavior and emotion in balance with cognition. The narrative approach values individual experience and brings philosophy to a practical, applied, and personally understandable level.

Beringer provides an excellent, concise description of a moral education teaching technique based on psycho-philosophical theory. The practical application of personalized reflective learning should be a part of moral education concerning development and the environment.

Nash, Rob. (1987) provides a framework for courses in applied ethics for teachers in "Applied Ethics and Moral Imagination: Issues For Educators." The author describes the need for a two-tiered approach to applied ethics. The first tier involves a rules and principles approach commonly covered by normative ethics. Nash believes that this first tier should be balanced by a non-discursive tier involving moral imagination and meta-beliefs. The second tier involves the educator’s individual story, charter, and virtue. Also important in this second tier is the primacy of power relations and the distribution of power within the educational setting. Power is inherent in education, with the distribution of power and decisions concerning power
holding a primary role in decisions made by both teachers and students.

Nash states that teaching ethics to teachers requires more than just rules or principles. Balance between the two tiers involves combining the content-rich imagination and cosmology with the methodological-rich theories and principles. Nash believes that combining the two tiers of applied ethics allows teachers to understand both the simplicity and complexity of moral issues.

Penn (1990) provides an analysis of various pedagogical methods of teaching ethics in "Teaching Ethics - a Direct Approach." The author describes a five year study at St. Edwards University concerned with the development of moral reasoning. Penn found that moral reasoning is most positively impacted by combining dilemma discussion with skills in logic, and procedures for operationalizing justice. The author found that role-taking also increased the probability of the students' ability to reason in a morally principled fashion. Penn also concluded that directly teaching the application of moral development theory, Kohlberg's stage types, and methods of ethical analysis is an effective strategy for developing moral reasoning. The author also concluded that peer discussion methods concerning moral issues is not as effective as the previously described methods and that general courses in social or political sciences are not nearly as effective as the curricular design described by the author.
Howe (1986) describes the goals of teacher education in ethics and stresses critical reflection in "A Conceptual Basis For Ethics In Teacher Education." The author summarizes Wilson's (1967) components of the morally educated: (1) appreciation for moral deliberation (2-3) empathy and interpersonal skills (4-5) knowledge to formulate possible solutions combined with the ability to reason through the ramifications of various actions, and (6) the courage to act upon the conclusions drawn from the first five components.

Howe then evaluates commonly used methods for teaching ethics to teachers against these six components. Applied ethical theory is criticized as being too mechanistic and abstract being only applicable as an adjunct to ethical learning. Kolhberg's theory is criticized for being gender and religiously specific and for the problems of a competitive rather than an inferior nature of lower and higher stages. The author criticizes values clarification as being incomplete because an individual with clarified personal values does not necessarily act in an ethically responsible fashion.

Howe concludes that critical reflection offers the most effective method of instructing preservice teachers in the ethical issues involved with teaching. The author views this method as problematic because (1) authoritarian theories must be given up, (2) openendedness and ambiguity must be accepted, (3) few people are capable of instructing this type of educational and ethical content in conjunction with critical reflection.
Howe's description illustrates the problem with any practical application of ethics. Instructors must be competent in both an academic discipline in addition to being competent in ethical inquiry. Because of this limitation, Howe's recommendations are very impractical under present university conditions.

Nash, Rob. (1991) suggests the need for balance in three different approaches to teaching ethics to preservice teachers in "The Ethical Responsibilities of Teaching." The author describes three conceptions of ethics for teacher education: rules/principles, character/structure, and belief/ideals. The rules/principles approach is characterized by the reasoning typical of ethical arguments. The character/structure approach focuses on the relationship between individuals and the social structures within which they participate. This second approach also relies on personal narratives and the moral character of the individual. The third approach involves beliefs/ideals embedded in metaphysical assumptions. The beliefs/ideals model stresses the world view that impacts all ethical decisions and actions.

Nash states that the emphasis of applied ethics as related to teaching has been isolated in the realm of the rules/principles approach. The author suggests that this model for teaching ethics to preservice teachers is incomplete as it often leaves out inductive reasoning, emotion, and cosmology.

"General ethical rules and principles will be appealing to students only if they can be grounded in certain cogent background beliefs and ideals and only is they are shown to be consistent with the formation of moral character that occurs in students' particular moral communities." (p. 164)
The rules/principles approach allows students and teachers a language that helps them through the analysis of tough ethical dilemmas. As students learn that ethical principles are often in conflict in our ethically pluralistic society, they realize that resolving morality is complicated and ambiguous.

The character/structure approach places the community as the locus of our moral world. This approach roots morality in tradition, community, and character. The language used in this model emphasizes moral imagination, story, character, virtue, community, and the influence of various social structures on our moral judgements. As we make moral decisions we may consider a rules/principle model for justification of behavior, but are more likely to consider the character/structure approach. If the community and institutions through which we participate are not considered, we become very isolated. This second approach brings the heart as well as the head into the ethical decision making process.

Nash describes the beliefs/ideals approach to moral decisions involves a metaphysical awareness. Background beliefs play an essential role in this area. Ethics in this model spring from deeply seated biological and psychological factors which bring us to care for others and connect our everyday lives to a broader worldview.

Nash concludes that teachers require grounding in the three general, overlapping areas from which we resolve our moral dilemmas. Nash takes exception to Howe's (1986) call for
critical reflection regarding the ethics of teacher education. Because critical reflection does not expose preservice teachers to various ethical approaches, Nash believes that teachers will not be equipped with the ethical sensitivity or skills to resolve the moral dilemmas they will face.

Strike and Soltis (1985) use an applied ethics approach in *The Ethics of Teaching*. The authors use case studies to examine the ethical ramifications of such educational issues as plagiarism, discipline, individual versus group obligation, grading, student autonomy versus parents rights to know, censorship, teacher burnout, due process, separation of church and state, and teaching values. The authors do an excellent job of reducing the technical ethical jargon that often accompanies applied ethics texts. They do little, however, with the values / beliefs and character/structure approaches to understanding ethical decision making as described by Nash (1991). In addition, issues of power and control so inherent to school situations are not covered in enough detail. The connection between teaching and discipline as indoctrination and propaganda is not adequately covered. On a positive note, Strike and Soltis provide an excellent source of case studies concerning teaching and is a stimulant to the critical reflection needed to deal with ethical issues of teaching.

Hunt (1986) provides a similar treatment of applied ethics pertaining to outdoor education in *Ethical Issues in Experiential Education*. Hunt provides a review of some basic ethical theory
covering ethical subjectivism, ethical objectivism, consequentialist the non-consequentialist theories. This review provides an good introduction to the ethical case analysis that follows. The case studies cover risk-benefit analysis as applied to experiential learning, informed consent, deception, secrecy, captive populations, sexual issues concerning students and instructors, environmental concerns, and individual versus group benefits.

Hunt works through cases covering these issues and effectively presents the strengths and weaknesses of various ethical principles and theories. Some of the case situations seem contrived and unrealistic, however. The best situations appear to be those that most closely resemble situations in which most experiential educators have found themselves.

Hunt’s concluding chapter addresses the topic of what method an individual might use to solve ethical dilemmas. The author stresses avoiding a totally subjective approach which replaces rationality with emotion when resolving ethical conflicts. The author also stresses the avoidance of ethical fundamentalism in which ethical principles and rules are absolutely followed creating a rigid non-compromising ethical structure. Hunt believes that educators must confront some ethical issues before they begin teaching to most effectively handle ethical dilemmas. Case studies are the method Hunt selects to prepare students for ethical issues. The author goes on to explain the need for ethical triage to prioritize the ethical issues confronting
experiential educators. In a similar fashion, Hunt believes that each educator should prioritize the values they most ardently adhere to make ethical inquiry more clear.

Hunt’s treatment of ethical issues does not pick any specific ethical theory, but uses a wide variety of historical reference to explain possible positions. Hunt correctly recognizes the possibility of error in ethical decision-making. The acceptance of error is an important component of the courage to act upon ethical decisions.

Berman (1990) describes the need to encourage the well-being of others and the planet in "Educating For Social Responsibility." Berman states that students must overcome a sense of powerlessness by finding strength within their community. Berman was writing in response to high school students feelings that they could do very little about world problems. The author stresses the development of social relationships and the need to change the organizing principles around which the curriculum extends. Social consciousness can be developed but priorities must be shifted to include ecological balance, holism, and diversity. The author also stresses the development of a group mentality which facilitates responsibility for the harmony and well being of the community.

Group mentality or consciousness can be developed according to Brenan, through a curricular structure that accentuates: (1) organizational skills allowing students to work together, (2) consciousness building skills so that students can learn a
communicative model which allows oppositional debates to become productive dialogues, (3) group problem solving skills that will allow students to access their own resources, and (4) long term thinking skills that will help them to project impacts of actions upon future generations.

Berman believes that student’s actions are both political and social statements of which they should be made aware. As students become aware of the ramifications of their actions, schools need to provide students with skills allowing them to develop social responsibility.

Berman’s analysis provides a justification for education centered upon sustainable development content. The relationships inherent to Berman’s concept of social responsibility are very close to the concepts of equity at the four levels representing sustainable development. The author’s focus upon both content and process skills also fits with the conceptualization of this study.

Issues of indoctrination and brain washing are covered in "Teacher Neutrality And The Teaching of Ethical Issues" by Furlong and Carroll (1990). The authors conclude that teachers should resist the temptation to indoctrinate by making truthful statements of their position. The authors state that this approach would require that teachers receive education in analyzing moral argument. Without this type of education, teacher’s schools will not be able to meet the needs of what Furlong and Carroll believe is a national priority.
Lickona (1988) describes a method of teaching elementary children that stimulates moral development in "Four Strategies for Fostering Character Development In Children." The goals of Licona’s program are: promote a move toward social goals away from the present promotion of egoism and individualism, promote moral agency, and develop the classroom as a moral community. These goals are pursued through four processes. First, classroom activities should build self esteem; a person can’t feel good about a community until they feel good about themselves. Second, students must learn to cooperate and help others. Students must learn to work together as opposed to working alone next to one another. Third, moral reflection should be encouraged. This process involves reading, thinking, or deliberating about moral issues. Through this process children learn to understand the connection between cognitive, affective, and behavioral components of morality. Forth, students should participate in decision making. This participatory process allows students to build consensus and to act upon their moral decisions.

Likoná’s processes represent a method which changes the hidden curriculum from one of competition, passivity and hierarchial domination to cooperation, activity, and consensus building. Licona’s model provides a direct process that allows sustainable development content to be presented to students in a format which is complementary to the content’s message.

Nucci (1991) stresses the need for multi-demensional programs of character development in "Doing Justice to Morality
Nucci points out the distinction between morality and convention demonstrating the strong influence of both social in relationships and social structure. Nucci reviews research on the distinction between morality and religion showing that children easily recognize differences between religious rules particular to their religion and moral acts. In other words, morality is conceptually distinct from an individual’s religious concepts. Morality for both the secular and religious child pertains to the interpersonal issues of justice and compassion.

Nucci defines moral education as education that is centered upon justice and human well being. The author states that the research examined demonstrates that moral education need not be indoctrinative or relativistic.

Huffman (1993) describes the implementation of values education in a comprehensive fashion in "Character Education Without Turmoil." This author suggests that communities should first identify the core values they wish schools to instill in children. Second, the strategies used to instill these values should be presented to the staff and community. Third, the core values should be written into the K-12 curriculum rather than trying to add a separate course to the curriculum. Fourth, a code of behavior reflecting core values should be written and followed. Fifth, all employees need to accept their responsibility for the moral development of students. Sixth, the school should offer to the community an ongoing parenting program.
which would help integrate the school and parents as partners in the development of character. Seventh, community service programs should be started. These programs at both elementary and secondary levels should demonstrate the obligations all people share for the wellbeing of others. Eighth, the community must require that schools be caring environments dedicated to the success of every individual.

Brooks and Kann (1993) describe essential elements to character education in "What Makes Character Education Programs Work?" The elements described by Brooks and Kann are similar to those suggested by Huffman (1993), but include several other considerations. Direct instruction is stressed. Teaching character should be a conscious effort following purposeful and direct instruction. These authors also stress the use of positive language used to communicate specific directions. Finally, student ownership and participation in character education is emphasized as critical for success. Character education becomes more effective when students participate in the formulation of goals regarding their responsibilities to the community.

Howard (1991) describes "Lawrence Kohlberg's Influence on Moral Education in Elementary Schools." Howard emphasizes the importance of moral education and the engagement of "students in reasoning about moral issues within a supportive environment." (p. 64) Although reasoning is done by the individual, the good of the community is also involved. Howard stresses Kohlberg's
concept of a just community and states that an individual's moral reasoning develops from a social context.

Benninga (1991) concludes a book he edited entitled *Moral Character, and Civic Education In thee Elementary School* with a chapter entitled "Synthesis and Evaluation in Moral and Character Education." Benninga suggests that the academic disciplines of psychology and philosophy provide the basis for discussions of moral education. The author expresses the need for moral education to center its attention not just on concern for justice and human welfare, but also to institutional structure and the rules that form the basis of social conventions. Benninga's selections illustrate the benefits of both direct and indirect approaches to moral education.

Cadenhead (1985) stresses a structure in education that would integrate teaching method with the content being taught in "Is Substansive Change in Teacher Education Possible." The author states that bringing content and the teaching process together will enhance teaching as an intellectual activity. Cadenhead also stresses problem solving by means of an interdisciplinary structure. The author states that teacher education should devoid itself of teaching process as content and make every effort to integrate content with process.

Cuadto's (1985) *A Guide on Environmental Values Education* provides the theories related to teaching environmental values. Cuadto states that environmental education curriculums often fail to include values education. The author briefly describes the
theories of Freud, Erikson, Skinner, Piaget, Kohlberg, Gilligan, Maslow, and Friere. Caudto then reviews eight strategies used to teach moral education: laissez faire, moral development, inculcation, values analysis, values clarification, action learning, confluent education, and behavior modification. Classroom activities are explained that could be used in teaching environmental values. The author draws from the different strategies to provide a model that might be used to instruct environmental values.

Caudto's brief review of the literature is excellent, as is his application of Kohlberg's stages to environmental decision making. The author warns of the inevitability of inculcation, but fails to fully delineate the ethical dilemmas facing the teacher who teach specifically for enhancing environmental values. The review of behavior modification is at best sketchy and lacks critical analysis. Behavior modification, plays a prominent role in schools, but can be extremely elitist, manipulative, and indoctrinative. Unfortunately, Caudto fails to make the reader aware of these dangers. In addition, the examples of classroom activities express a pro-Western, and therefore pro-industrialization bias. The reliance upon Maslow's needs theory perhaps lends to an ethnocentric and pro-industrialization orientation.

In spite of these weaknesses, Caudto's review of Environmental Value Education provides an excellent introduction to moral education theory as applied to the environment and
Kutnick (1988) describes research concerning elementary school teachers and moral education in "I'll teach you! Primary School Teacher's Attitudes Toward and Use of Moral Education in the Curriculum." Although this research doesn't specifically address teacher education, it does describe teachers attitudes. Because of the great influx of new teachers in all disciplines, Kutnick's study reflects the lack of direction concerning moral education in teacher education programs. The author states that the teachers surveyed had little or no awareness or concern about the hidden curriculum and few teachers has access to any moral education curricular packages. Teachers made little attempts to plan classroom activities to promote moral experiences. Kutnick suggests that most teachers surveyed take a view that morality is imposed through constraint by the teacher. Kutnick concludes that teachers in the U.S. are held accountable for both the intellectual and social/moral development of children, yet teachers appear to be only educated in guiding children intellectually.

Chazan (1985) analyzes theories of moral education in Contemporary Approaches To Moral Education. The author emphasizes the need to include theoretical, educational, and practical components of moral education. Chazan characterizes each of the theories in regard to categories which demonstrate similarities and differences. Chazan reviews the moral education theories of Durkheim, Wilson, Values Clarification, Kohlberg, and Dewey. The
author also provides a chapter on contemporary objections to moral education.

Chazan provides an excellent cross section of theories of moral education. Although the chapter on Dewey lacks the consistent analysis of the other theorists, combining the writing of Dewey with comparison to the other theorists helps to make sense of Dewey’s sometimes confusing use of the language. The authors chosen by Chazan demonstrate the different disciplinary approaches to moral education.

Teacher Preparation In Related Areas

This portion of the literature review will investigate authors concerned with teacher preparation in environmental education, sustainable development education, global education, and human rights education. Unfortunately, there is a paucity of literature on teacher preparation in the areas of the curriculum strongly related to sustainable development content. This lack of attention perhaps results from the relative recent interest in these specialized areas of the curriculum. In addition, there is very little literature indicating that these content areas and pedagogy are being combined.

Environmental Education

Van Matre (1990) presents in Earth Education a criticism of present environmental education efforts. The author states emphatically the need to clearly define the goals of environmental education and make environmental education a distinct and well prepared portion of the curriculum. Van Matre
condemns the present infusion strategy and the implication that outdoor recreation education is adequate environmental education.

Van Matre stresses teaching methods that emerse and engage the students as active participants. The author states that nature study organized around a "show and tell," or "name game" teaching strategy is ineffective and out of sync with the environmental content to be covered. Van Matre (1972) described activities in an early book, Acclimitization which are consistent with the authors emphasis on emersing students in active experiences which primarily stress ecological concepts. The author also stresses motivational hooks followed by organizational and reflective sequences.

Much of Van Matres program covers the "Whats," "Whys," and "Ways" of environmental education. The author’s writing is an effort to "train" environmental teachers as models who live and expouse deep ecological position. Van Matre's discussion of why environmental education failed in schools sheds light on the problems facing any new curricular area.

Because environmental education curricular packages such as Project Wild and Project Learning Tree are commonly used to prepare teachers and preservice teachers, I will include a review of the organization of these curriculum guides. The purpose of these guides is to provide teachers with prepackaged activities that can be infused into the the different major curricular areas found in schools. Following a 2-3 hour session in the use of these materials, the teachers are given an activities book which
is well indexed and easily used by most teachers.

Mayer (1990) and Siegenthaler (1987) of The Institute for Earth Education critique the curriculum guides in "Project Learning Tree (Corporate Propaganda Tree)" and "Project Wild (Project Tame)." These authors found fault with these popular guides for preparing teachers on several grounds. Siegenthaler believes that the Project Wild can be faulted because its discussion based learning framework. This author believes this framework lacks an experiential component that could lead the students to a more complete understanding of ecological concepts. Siegenthaler also faults Project Wild for its anthropocentric bias. This author suggests that this curriculum package stresses technological manipulation of nature to human purposes over harmonizing human life to the natural environment.

Mayer believes that Project Learning Tree is an ineffective guide for teachers because it: (1) represents the views of the forest products industry, (2) uses taxpayers money to promote its goals, (3) promotes the forest’s purpose as primarily a human resource, in spite of some attempts at an unbiased approach, (4) influences teachers without them realizing who produced the materials and why, (5) fails to promote the goals of environmental education as it more closely resembles outdoor or conservation education, and (6) fails to provide a behavioral component in its agenda as students are not instructed in how to act concerning the environment.
The critiques of Mayer and Siegenthaler provide an excellent example of the need to be critical of efforts at teacher education and problems with neat teacher proof curricular packages concerning the environment. Teachers may become familiar with the guides in 2-3 hours, but the ability to teach in the area of ecological concepts would take a great deal more understanding and effort. Because of the popularity of educational packages such as Project Wild and Project Learning Tree, the critiques of Mayer, Siegenthaler, and VanMatre are important. Their analysis suggests the limited scope of such programs and illustrates problems associated with infusion.

Caudto (1985) stresses the importance of values in "A Teacher Training Model and Educational Guidelines For Environmental Values Education." The author states that the knowledge of value philosophy and the psychological basis of value formation is the first step in environmental values education. The more recent research of Penn (1990), reviewed earlier, substantiates Caudto's assertions. Caudto also states that teachers should have a minimum of one course each in philosophy, ethics, logic, and environmental ethics. The author also suggests additional philosophically oriented courses in the preservice teacher's area of specialization. Caudto believes that teachers should be trained in the teaching strategies of inculcation, moral development, values analysis, values clarification, action learning, confluent education, and behavioral modification. Knowing the strengths and weaknesses of
each of these strategies will allow the teacher to apply the knowledge acquired in the philosophy of values.

Caudto further suggests foundation courses in psychology, developmental psychology, behavioral psychology, educational psychology, and social psychology. The communication skills involved with conflict resolution are also suggested. Caudto’s prescription for teacher education in environmental values stresses psycho/philosophical knowledge, but says very little of the environmental or ecological components of a teacher’s education. The content of environmental values education, which is strongly related to sustainable development guidelines, can’t be separated from the psychological and philosophical content. Teachers need to be educated in not only philosophy and psychology, but also in the sociological, political, and ecological concepts impacting the environment. The author stresses the importance of understanding change from a social, ecological, and psychological standpoint should also be stressed.

Caudto concludes that the major obstacle in the institutionalization of environmental values education is fear of indoctrination. Although a good deal of background considerations are presented concerning guidelines for implementing environmental values, the author fails to provide much in the way of action strategies that might lead to the inclusion of environmental values education in teacher preparation. Caudto’s description of the coursework needed to
prepare teachers for environmental values education demonstrates a more formidable obstacle than the fear of indoctrination. Environmental values education requires too much of preservice teachers as their already full course load would not allow for the course work in psychology and philosophy Caudto suggests.

Gigliotti (1990) describes the need for more effective problem definition in "Environmental Education: What Went Wrong?" Gigliotti believes that environmental education has produced a citizenery who are concerned with the environment, but are unwilling to make sacrifices or any substantial changes in their life style. The author believes that this is because environmental education has supported the values connected with a worldview that humans are separate from the environment.

Gigliotti states that environmental education should be the primary focal point of the education process in the United States. The author would place environmental education on the same plane with reading, writing, and arithmetic. A total restructuring of the K-12 school curriculum would be required, states the author, to achieve this focus. The author also states that the colleges have not done their part to educate leaders capable of guiding policy or research in environmental areas. Gigliotti concludes that colleges must stop graduating environmentally illiterate teachers.

A similar message is provided by Raffan (1990). This author describes the dominance of the mechanistic world view as a major barrier of environmental education in "The Failed Curriculum."
Raffan attacks the design of environmental education programs, their lack of effectiveness, applicability, and failure to accentuate the affective domain as a way of knowing. The author suggests that environmental education's dependence upon scientific rationality for acceptance has weakened its message and brought about secondary academic status. Raffan states that the attempted infusion of a holistic study across staunchly defended disciplinary lines has lead to inaction and failure. The author also insists that environmental education must reorganize the ways of knowing, not deny the many non-scientific aspects of environmental education, and focus upon what works in environmental education. Raffan believes that continuing to place environmental education into a reductive scientific model will only result in continued failure.

J.M. Stone (1989) stresses the importance of teachers in institutionalizing environmental education in "Preparing Teachers to Become Involved as Environmental Educators." The author describes the barriers to the inclusion of environmental education in schools and in teacher preparation. The author suggests that environmental education be infused into already existing teacher education courses.

Stone states that another of the overlooked problems is that teacher educators are not familiar with environmental education goals and typically aren’t competent in environmental issues. Teacher attitudes toward content is emphasized as an important factor to student attitude and success. The author also states
that college educational methods texts should include sections concerning environmental education competencies, but these texts are often lacking in this area. Stone believes that environmental educators must put the pressure on institutions providing teacher preparation to include an environmental education focus.

Hart (1990) suggests a reflection-in-action model for teacher education in "Rethinking Teacher Education Environmentally." Hart describes problems with environmental education research and pedagogy. The author suggests that the assumptions of empiracally based research along with science teaching based pedagogy are designed to lead to status in the academic community, but often limit and control the parameters of environmental education. Hart describes the quantitative, reductive paradigm presently followed as entailing assumptions and characteristics which are inconsistent with environmental education theory and practice. Conceptions of defective or effective in this knowledge-in-action model are replaced by reflection.

Hart believes that environmental education challenges the existing power structure by focusing upon a problem centered structure. This structure uses more than just scientific analysis as a part of decision making. Hart stresses that the reflection-in-action approach to teacher education fits real environmental/development problems more than the mechanistic worldview. The author believes that the reflection-in-action
approach requires a teacher to be openminded, whole hearted and enthusiastic, socially responsible, and capable of diverse action strategies for learning.

Champeau (1990) describes the results of a study of preservice teachers concerning required environmental education coursework in "Perspectives of Pre-Service Education Students on Environmental Education Course Work." Champeau states that Wisconsin’s environmental education mandates provide the opportunity to expose future teachers to environmental education content. The majority of students believed that the environmental education course they were required to take was important, desirable, appropriate, meaningful, and an educational priority.

The UNESCO-UNEP environmental education newsletter Connect (1991) describes the need for "Environmental Education For University Students." The authors assert the need for an environmental education component for all future scientists, technologists, and social managers such as architects, economists, engineers, layers, and teachers. The authors ask two pertinent questions concerning an obligatory environmental education course for university students: (1) How could an environmental education course cover the wide range of environmental content in one semester? and (2) How would such a course be taught? This second question relates to the fact that the demands of teaching a environmental survey course would probably be added to an instructor’s typically full schedule, and
team teaching courses of result in problems.

The connect article suggest that nearly all courses offered on college campuses contain an environmental demension. They conclude that, because of its importance and ubiquitous nature, the environment could serve as the focal point of a restructuring of the education process itself.

The National Wildlife Federation (NWF) (1990) conducted a survey of university students concerning awareness and concern over the environment. The NWF study found that 94% of the students were willing to pay more for environmentally safe products. Students said environmental issues affect their voting in political elections. The students believe that tougher laws should be enacted to protect the environment, but that industry influences politicians to create weaker laws and regulations concerning the environment.

The NWF study found that newspapers (35%) television and radio (23%) and magazines (14%) serve as the primary sources of environmental information. The students (80%) state that they could do more about environmental problems if they were better informed. The importance of information about the environment to university students strongly suggests the need for environmental education courses following an issues investigation and action structure suggested by Hungerford and Volk (1990).

Edralin's (1989) findings suggest a similar priority concerning environmental issues. This author investigated preservice teachers attending 16 colleges in universities of
Edralin found strong concern, awareness, and opinions related to environmental quality issues in the students surveyed.

The lead article in Connect (1990) asks "Environmentally Educated Teachers The Priority of Priorities?" The authors suggest two areas of required competence regarding teacher education: (1) development of teaching skills, and (2) knowledge of environmental content. The Connect authors believe the competence in environmental education content should cover ecological foundation, conceptual awareness, investigation and evaluation, and environmental action skills. Unfortunately, the Connect authors don't cover the difficult, questions concerning implementation of teacher education in environmental and development issues.

Hungerford and Volk (1990) extend this model for changing Environmental behaviors in "Changing Learner Behavior Through Environmental Education." The authors describe the characteristics of their behavioral modification model of environmental education. The authors state that the battle to sustain environmental quality and natural resources is being lost. Their review extends from the meta-analysis of environmentally responsible behavior done by Hines, Hungerford, and Tomera (1986). Hungerford and Volk suggest that there are not enough national strategies around the globe regarding environmental education, and that many educators are concentrating on the wrong strategies. The authors stress that
environmental awareness does not result in environmentally responsible behaviors. They emphasize the need for instruction beyond the ecological foundation, and environmental issues/sensitivity levels.

Hungerford and Volk’s model for responsible environmental behavior has important implications for preservice teacher education. The inclusion of investigation and evaluation techniques as well as education in action strategies adds even more to the requirements of preservice teachers.

The Hungerford and Volk model for environmental education also involves consideration of elitism and indoctrination inherent to behavioral modification programs. The authors use language synonymous with indoctrination and propaganda such as: teacher training, shaping, and reinforcement strategies. The authors’ findings demonstrate the effectiveness of this behavioral modification model and the failure of other models not including a strong action component. With environmental problems worsening, indoctrination on behalf of the environment might be appropriate as the lesser of the evils.

In a survey of K-12 Indiana teachers Buehe and Smallwood (1986) found that teachers had slightly higher environmental word recognition, concept understanding, and attitudes in 1985 than in 1975. The study demonstrated that although teachers had made improvement in the environmental area, the teachers still had limited levels of environmental literacy. Their study also indicated that elementary, nonscience teachers had the lowest
environmental literacy of all groups of teachers. The authors express great concern over this low level of environmental literacy as they believe that elementary teachers are in the best position in reference to a child's psychological development to impact future citizens. Buethe and Smallwood's study suggests that regardless of the inservice or preservice environmental education Indiana teachers are receiving, there are few advances in their environmental literacy. The study points to a need for the reorganization of environmental education in preservice teacher education.

Volk, Hungerford, and Tomera (1984) conducted "A National Survey of Curriculum Needs As Perceived by Professional Environmental Educators." The researchers concluded: (1) professional environmental educators believe that environmental education's goals are not being met, (2) environmental education goals and objectives suggested by the Tbilisi conference are pertinent, (3) lower level goals of knowledge and awareness are being met to a higher degree than higher level goals, (4) there is a critical need for inservice teacher education at all academic levels regarding environmental education. The authors recommend extensive inservice teacher education to meet environmental education goals. Because there is a high turnover in teachers resulting in an appreciable influx of new teachers, the authors might well have been advised to suggest an equally critical need for preservice teacher education. There was no mention of educating administrators, or school board members to
environmental education's goals and objectives. Because of the influence of these people in the school curriculum (Fullan, 1982), the researchers might have also included them in their call for inservice education.

In research concerning "Barriers to Environmental Education," Ham and Sewing (1988) found that a majority of teachers did not believe they were adequately prepared to instruct in the environmental education area. These researchers found that the lack of scientific background of many elementary teachers was a critical barrier to environmental education. Ham and Sewing found that positive attitudes toward environmental education did not assure that programs concerning the environment would be included in the curriculum. Lack of time for preparation of materials, lessons, curricular goals, and classroom activities was a major barrier to the commitment to environmental education.

The inclusion of environmental education in preservice teacher education is consistent with the 1990 Environmental Education Act (Marcinkowski, 1991). According to this act,

"It is the policy of the U.S. to establish and support a program of education on the environment, for students and personnel working with students, through activities in schools, institutions of higher education, and related educational activities." (National Environmental Education Act Oct, 26, 1990, Congressional Record U.S. Senate n. 149 part 3 s17160-s171646.

Penick (1989) states that few teacher preparation institutions prepare teachers to deal with issues. The author describes the need for educational goals focused on societal
problems. Penick believes that students require training in investigative and evaluative skills which would allow students to become more like teachers in that they would evaluate and choose how best to resolve critical issues. Penick believes that teacher education must change to prepare teachers for the flexability required of "Issues-based Education." The need for education that would lead to active citizenship is obvious to Penick. What is less apparent according to the author is the process of implementing change in educational goals and teacher preparation.

Wilke (1985) describes the political strategies used to establish environmental education competencies for licensure to teacher in Wisconsin. The author states that environmentally literate teachers are the key to successful k-12 environmental education.

**Teacher Education In Development Content**

Joy (1987) wrote "Educating About Development" as a companion paper to the report "What Americans Think: Views on Development and U.S. - Third World Relations." Joy believes Americans should be educated about development in the Third World because of the obligation to be compassionate toward other humans, and because of the danger of ignorance concerning development to not only the world's population, but to the people of the United States. While support for development is "soft" in the U.S. at present, Joy believes that Americans can't afford not to care.
Joy divides "Educating About Development" into understanding of the Third World and their development problems, understanding the reality of world interdependence, clarifying development assistance, addressing the public policy area, methods of communicating development content, and identifying and targeting audiences for development messages.

Joy expands upon these topics with clarifying strategies and objectives. These clarifications provide a good organization for educating about development at the college level.

Unfortunately, Joy equates knowledge and understanding with action. In addition, Joy seems to equate development as only happening in non-industrialized nations and not something that occurs in all countries. The author does suggest demonstrating the connections between American poverty and underdevelopment in the Third World. Because Joy fails to adequately define development, Joy's writing equates development with the Western model of industrialization. Joy suggests that we need a balance of understanding regarding the successes and failures of Third World Governments. The author neglects to mention, however, that the information filters through which we receive knowledge of other countries makes balance very difficult.

Berberet (1990) suggests restructuring in education in "Education for Sustainable Development A Call For Reform." The author states that two major obstacles inhibit U.S. education from promoting a life style consistent with a sustainable society. The first is a world view which separates the
environment from humans and which considers the environment an infinite source of resources. The second obstacle is the failure of environmental education and the weak position of environmental studies in higher education.

Berberet lists seven goals for education reform that might help lead to a sustainable society. The author suggest the infusion of ecosystem concepts at the core of all disciplines, adding student preparation to lead sustainable lives at all educational levels, and establishing environmental science as a standard field of specialization in higher education.

Unfortunately, Berberet fails to recognize that the recommendations offered would do little or nothing to change the structural components of the education process that help perpetuate our unsustainable society. The author suggests holistic ecosystem concepts be infused into fragmented, specialized academic disciplines. This strategy only reinforces the reductionist, mechanistic organization of our schools. As the author suggests himself, this infusion strategy has already failed.

Sustainable development concepts involve democracy, yet schools are the most undemocratic of institutions. Although most schools describe the democratic process, the author doesn’t address the education process’ lack of democracy in action. Sustainable development concepts involve a balance between individual and community wellbeing, yet there is nothing in Berberet’s proposals that would move the U.S. educational process
from its overemphasis on individual skills. Sustainable development involves equity, yet the author fails to point out the inequities that are institutionalized in our schools. Berberet also fails to mention the education required of the instructors found in higher education if they were to infuse sustainable development content into their curriculum. Nor, does the author suggest the importance of the gaining support of college administrators or educational bureaucrats at the state and federal levels who control the requirements placed upon preservice teachers.

**Teacher Preparation In Global Education**

Merryfield (1991) describes the lack of teacher preparation in global perspective as a major obstacle in "Preparing American Secondary Social Studies Teachers to Teach With a Global Perspective: A Status Report." Merryfield gathered information from 30 programs providing global education both at College, University, and outside the traditional higher education setting. The author found that global education identified four concerns when teaching inservice or preservice teachers. First, teachers have very little knowledge, or background in global perspectives. Second, there was a lack of interest in global concerns because teachers believed global issues were irrelevant or were threatened by the content. Along with this problem, the author detected an ethnocentric position where teachers believe that global perspectives should be approached from the perspective of American interests. Third, teachers believe that education in
global issues are not needed for all students. Forth, global educators were concerned about the lack of school district support for this content area.

Merryfield concluded from this study that preservice social studies teachers are not being prepared to instruct students in global ecological, cultural, or technological systems. The author states that the findings of this study demonstrate the need for more teacher education in global perspectives.

Tucker and Cistone (1991) state that recent world events create the need for teacher education in global perspectives. In their article, "Global Perspectives For Teachers: An Urgent Priority," the authors stress a holistic approach that would allow preservice teachers better self awareness, understanding of world relationships, and an understanding of how they fit into those relationships. Tucker and Cistone emphasize that knowledge of global issues is not enough. They suggest that community problems and involvement provide an active vehicle through which preservice teachers can study global issues.

In "Developing A Global Perspective: Strategies For Teacher Education Programs" Bruce, Podemski, and Anderson (1991) suggest including global perspectives throughout all teacher preparation rather than just adding a course requirement. The authors suggest ways of including global perspectives in general studies, foundations of education curriculum and instruction, and clinical experiences.
Bruce, et al, emphasize the commitment of teacher educators and administrators to global perspectives. In addition, global perspectives instruction, communications, and library resources are also viewed as essential.

Bennett, Niggle, and Stage (1990) describe the impact of a course at Indiana University in multicultural teacher education. The authors' results indicate that multicultural teacher education can be successful in reducing feelings of social distance in preservice teachers.

**Teacher Preparation In Human Rights Education**

Hahn (1985) describes the weakness of U.S. social studies programs in issues of international human rights in "Human Rights: an Essential Part of the Social Studies Curriculum." Hahn states that to develop a global perspective teachers must promote a (1) consciousness of different beliefs and worldviews, (2) an awareness of world wide events and relationships, (3) an appreciation of cross-cultural diversity, (4) an understanding of global systems, and (5) an awareness of choice mechanisms and strategies for action.

Hahn stresses that human rights education involves a valuing process which can lead to reflective learning and the motivation to participate in socially relevent activities. In addition, the author states that human rights education complements the development of democratic attitudes. Hahn states that human rights issues are almost always controversial, but by examining these issues students become aware of the democratic
process and the skills which make that process successful. Hahn concludes that war and human rights abuses are connected and that students must recognize the link between peace and human rights. Although Hahn's writing is not focused on teacher preparation, the concepts to education at all levels and are easily applied to preservice teacher education.

Tarrow (1990) describes human rights education in relation to global education, moral education, and development education. The author stresses that teaching environment, teaching strategies, and curricular content are of equal importance. Recognition of individual and cultural differences with acceptance of those differences, and respect for those involved are the essential components of human rights education. Tarrow also stresses that human rights is involved at both the formal and informal levels of the K-12 curriculum. Human rights are described as being an integral part of global education, multicultural education, moral education, civic education, environmental education, development education, and peace education. As an integral foundation of these educational movements, Tarrow views human rights education as the unifying factor connecting these curricular areas.

Tarrow states that curriculum guides and activities in the human rights area are not lacking. What is lacking is a coherent, well planned program based on rational philosophical theory. In addition Tarrow stresses the lack of qualified teachers to instruct students in the human rights area.
Chapter Seven
Conclusions From The Review Of Literature

There are many conclusions to be drawn from this literature review. I provide conclusions from both the review of equity levels of sustainable development, sustainable development's relation to educational reform, and teacher education in areas which sustainable development would touch.

Equity and Sustainable Development

The review of authors concerned with equity and sustainable development allow for the inquiry into various systems of justice that intertwine to create our value system. The focus on power and time also lends perspective to development and environmental issues. Because these issues typically involve the distribution of the benefits and burdens in the face of scarcity and conflicting interests, sustainable development issues fit the definition of justice. What follow is a list of conclusions from the review of literature concerning equity and sustainable development.

1. There are many possible ethically justifiable (rational) prescriptions for behavior at all of the levels of equity represented by sustainable development. The moral pluralism found in our society may complicate our existence, but the many possibilities of ethical justification may not be a negative. As Hargrove suggests "...what is needed is not a single universalizable environmental ethic but rather a family of them." (1989, p. 13)
2. Authors often treat sustainable development as something taking place in the Third World. Contrary to this view, sustainable development is an applicable concept for all countries. The literature illustrates that sustainable development is open to very wide ranges of interpretation, however.

3. Although this review focused upon the philosophical nature of sustainable development, there is a need to mix theory and practice. Much of the literature concerning sustainable development seems to be more rhetoric than praxis. Many authors relate the need for a more humanistic application of economic theories of justice. What often passes for humanism is nothing more than a different version of the same old economic and political theory. Unfortunately, much of the literature coming from Western industrialized nations also follows an ethnocentric, social Darwinist pattern. There is reason to question the validity of trickle down economic theories for all countries, but especially for those countries at the bottom and top of the GNP scale.

4. Strong connnections exist between the technocratic world view and ethical rationalizations for behavior. These connections are present in most of the literature on sustainable development. It appears we can’t step away from the layers of meaning and understanding through which we view the world.

5. There is a great deal of institutional and factional dispute found at all levels of sustainable development, both from
a theoretical and practical standpoint. There seems to be a lack of balance between the useful debate over paths to the future, and debate which is nothing more than unyielding defense of position. The power, control, and dominance/submission relationships inherent to the U.S. class system of politics, economy, and education get in the way of any meaningful collaboration concerning future directions of global societies.

6. Development must be conceived of as more than having. Existential components of being, doing, and interacting must be emphasized as well as having. There is a pervasive assumption, extending from economic efficiency conceptions of justice, that human needs are insatiable. This ultimate greed is a no more provable facet of human nature than ulturism, however (Brockway, 1991). There is certainly more evidence of humans acting out of greed than ulturism in industrialized nations. But, there is absolutely no proof that these actions are the result of some overpowering facet of human nature and not simply social convention. Similarly, the neoclassical assumptions concerning competition are internalized and exalted by industrial societies to justify the economic theories by which these nations distribute benefits and burdens while maintaining the status quo. Political leaders around the globe concentrate on economic growth as a means of fulfilling human needs. This quest for economic growth can be important if the infrastructural needs of a society require meeting. The overemphasis upon greed, competition, and economic growth results in societies which lack balance in
fulfilling the basic existential needs. Concentrating on having does little to fill the need of being, doing, or interacting.

7. Much of the literature concerning sustainable development is framed in ethnocentric language. The use of the words "developed" and "undeveloped" remains as a vestige of the social Darwinism so prevalent in the colonial period. Because development is equated with economic growth in the predominating economic theories of development, the people of non-industrialized nations are viewed as inferior to those of industrialized nations. Of course this view is rarely stated directly, but the underlying assumptions of present economic development are justified by meritocratic principles common to virtue theories of justice.

8. There exists many societal differences in ways of knowing. In addition, there is overwhelming evidence that communities and people must have a sense of ownership if sustainable development has a chance for success. The combination of these two concepts, suggests that Western version of development has little or no chance of acceptance by people in non-industrialized countries.

9. Consideration of other species and future generations are typically well down the list of considerations in development projects. They are mentioned, but most emphasis is place on the present well being of human beings. Because future generations can not participate in economic exchange, they are not included in the obligations typical of exchanges between rights holders.
Regardless of whether other species are afforded inherent value, the inegalitarian application of value is typical. Most authors concerned with sustainable development issues afford other species only instrumental value.

10. Although sustainable development might be present in a totalitarian state, the concepts of development as defined by psychological, existential, and axiological criteria are not consistent with totalitarianism. Sustainable development represents a process that is not possible under repressive authoritarian positions imposed by the state; whether represented by an elitist oriented republic such as the United States, or as in the etatism found in the former Soviet Union (Horvat, 1982).

Certainly, sustainable development could be present in many forms of political organization. Regardless of political organization, a balance between liberty, equality, and community is required if the needs of present and future societies are to be filled and sustained.

The fall of the totalitarian etatist regimes of Eastern Europe demonstrates that liberty is an essential component in people's lives. Liberty must be balanced with equality and the solidarity found in community. Overemphasis on individual freedoms does not lead to more well being for a society, as libertarians would suggest, but leads to oppression through the illusion of equal opportunity. The goal of sustainable development should be to strive for a balance between liberty, equality, and community. In this conception of balance, the
community should extend beyond human organization to the land community as conceived by Leopold (1966). The democratic process most effectively allows for concensus building through which the balance between liberty, equality, and community might be achieved, and through which a sustainable society might be approached. Just as process and content can not be separated in teaching, sustainable development efforts can not separate ends and means. The process is an essential part of the evolution of sustainable societies.

13. The holism and individual focus found in ecocentric and biocentric theories of justice are complimentary to the conception of an environmental ethic. Humans need a pluralistic conception of the layers of ethical relationships involving humans and the biosphere. Without this type of conception, humans will be unable to meet the requirements of their obligation to life and will find it difficult to justify the change toward sustainable societies. At its philosophical center, sustainable development concerns our obligation to life. This obligation forms the basis of our psychogenesis and our evolution as a species.

**Educational Reform And Sustainable Development**

The review of educational reform literature of the 1980’s allows for several generalizations, and provides a vehicle through which the lack of acceptance of sustainable development content may be viewed. Generalizations are possible in reference to the language and ethical position of the reports, the
implementing procedures suggested, the educational organization that the reports either explicitly or implicitly endorse, the make up of the writers of these reforms, and the treatment of the four levels of equity found in sustainable development content.

1. LANGUAGE AND ETHICAL POSITION - The language of these reports is extremely anthropocentric. This language by itself is not surprising, but the exclusion of the environment from the vast majority of these reports demonstrates a lack of understanding of the ecological systems upon which human life depends.

The ethical position expressed by the majority of the reports is strongly utilitarian. The reports suggest that better teaching, and specifically better teacher preparation, will result in a better national economy, or a more effective democracy. The reports generally define better teaching or teacher preparation in terms of the consequences it might bring: higher student test scores on nationalized tests, or more students entering science or technology occupations where innovation is an important component of economic growth.

Many of the reports model education upon the top down hierarchial organization and management style found in the military and industry. This organization finds justification in the bottom line mentality found in the business world and stresses the U.S. economic position in a competitively orientated worldview. The Carnegie Reports are the most extreme in this consequentialist type of orientation with education meant to improve the bottom economic line. In this orientation, a better
life will trickle down to all social strata as a result of a stronger U.S. economy.

2. IMPLEMENTATION OF RECOMMENDATIONS - The proposals generally lack plans for the implementation of their recommendations. In addition, many of the recommendations are simply not possible in the circumstances found in U.S. schools.

The report on Global Perspectives in Education by the Study Commission on Education proposes, for instance, that a student teaching experience should take place "under the guidance of exemplary teachers with experience in teaching with a global perspective" (1987, p. 36). Supervisory teachers are often not selected because of their excellence, but because they are the only people willing to take student teachers. Typically, if these supervisors do a good job, their work load drastically increased. If teachers take student teachers to avoid work, the student teachers are essentially on their own. Both of these situations commonly exist in public school. In addition, to ask that exemplary teachers also have expertise in instruction in global education is simply unrealistic.

Reform agendas often call for increased standards for teacher certification and suggest increasing the number of minority teachers. Unfortunately, these reformers misunderstand a system based upon meritocracy in which minorities are not involved in a fair race. Solving the problem of minority teachers is not just a function of recruitment as the Carnegie Forum would have us believe. Increasing standards for entry into
any occupation will not allow for equitable inclusion of all
unless the social system from which the participants come is
equitably based.

Some of the recommendations are so general they almost defy
implementation. The recommendations of the Association for
Supervision and Curriculum Development Report illustrates this
type of recommendation.

"We urge all those involved in American education - from
school board members to district and building administrators
to individual teachers - to renew their commitment to
promoting moral education in the schools. Indeed, we urge
that moral education be made a powerful unifying and
energizing force in the curriculum." (1988, p. 46)

This type of recommendation sounds nice, but without
consideration of implementation, is nothing more than meaningless
rhetoric.

3. LACK OF PROBLEM ANALYSIS - The reports identify many
problems facing U.S. education, but generally this identification
involves the recognition of symptoms and not the problems which
lie behind the symptoms. The reports generally fail to question
who should make the decisions concerning education and also fail
to analyze the power structure involved with societal decision
making. An example of the failings of the reports in this regard
is demonstrated by their treatment of cultural pluralism.

Cultural pluralism is identified by many of the reports as a
problem. The reports say little about textbook production and
sales as a force in perpetuating the lack of standing and
understanding of other cultures. The reports don’t address the
political nature of the educational hierarchy from the local
school board level to state and federal level bureaucracies. An analysis of the power structure of these institutions would lead to a better understanding of cultural pluralism in the United States. Similarly, nothing is mentioned concerning the birth and death rates of minorities. Why are minority school populations growing at such an astounding rate relative to the white population? Who should make decisions concerning the treatment of cultural pluralism in U.S. schools?

Public schooling is financed primarily by local property taxes and tax revenue from the state. How does this financing system impact the control over how education takes place, and who makes the decision concerning education? How does this financing system impact efforts to reform schooling?

These reform proposals fail to address the underlying power relations which dominate U.S. educational policy. Without understanding these relations, and the skill and motivation to change them, educational reform will represent nothing more than a diffusion of energy away from the problems facing our society and the maintainance of the status quo.

4. WHO WROTE THE REPORT? - There is an elitist affiliation of the writers of these reform proposals. Education department deans, government officials, college presidents, and curriculum specialists are typical positions of those involved with the writing of these educational reform proposals. An occasional teacher is included in the panels, but these teachers are winners of "teacher of the year" recognition. Only those of merit are
included as writers of these reports. No reporters involved with these proposals were identified as students, parents, or anyone else who could be construed as coming from the bottom of the educational hierarchy. Simply by their make up, the panels represent the positions of those on the upper rungs of the U.S. educational and political hierarchy.

The proposal which most closely reflects the positions of sustainable development expoused by this study was written by the Public Education Information Network which allows participation by all interested parties. This proposal, with its more bottom up orientation, suggests the importance of participation in economic and political decision making processes. It also suggests the importance of decentralization and participation in the evaluation and planning process.

5. EQUITY ISSUES AND EDUCATIONAL REFORM - The treatment of the four levels of equity which concern sustainable development are generally ignored by the proposals reviewed. Of these four levels, the issues involved with equity within the U.S. gets the most attention. There is overlap among the proposals concerning their objectives, but they can be generally categorized into conservative economic, traditional conservative, or liberal models for education.

The proposals with an emphasis upon economic growth typically follow the conservative trickle down economic model in which better education will result in economic growth which will allow for a higher quality of life to spread to all levels of
society. The Carnegie and Governor's reports are examples of proposals which tend to stress this conservative economic growth agenda. The traditional conservative model typically suggests that preservice teachers be provided with a stronger liberal education. These reports stress the need to educate both teachers and children in the cultural knowledge which has helped the U.S. achieve greatness in the past. The reports also suggest that education courses should not occur until after a baccalaureate degree has been obtained. The conservative proposals such as the Holmes Report and "Those Who Can" often call for higher standards, national testing, and more emphasis upon training in current technology.

Liberally orientated reports concern themselves with equal opportunity and democracy. They support legislation with global perspectives or multicultural curricular content which would allow for a more just education for all. These reports stress cultural pluralism and often suggest the need for one track systems of schooling. Reports such as "Global Perspectives in Education" and "Moral Education in the Life of the School" fall into this catagory. "The Paideia Proposal" (Adler, et al) also has objectives which fit these characteristics as expressed by the following statement:

"The sooner a democratic society intervenes to remedy the cultural inequality of homes and environments, the sooner it will succeed in fulfilling the democratic mandate of equal educational opportunity for all." (1982, p. 39)

Unfortunately, the reports fail to mention the rights of other species, the obligations humans have to other species, or
the environment which we inhabit. The proposals are written in anthropocentric language which ensures the primacy of human existence. The Global Perspective Report suggests the importance of understanding physical and biological systems, but stresses the importance of the human species in these systems. "Education for a Democratic Future" is also written in anthropocentric language, but these authors at least suggest the importance of a safe and clean environment (Public Education Information Network, 1982). This suggestion would lead to less habitat destruction, but not necessarily equitable relationship between species. The positions taken by the authors of this proposal are the closest to the beginnings of an ecocentric worldview. Their agenda includes the detrimental impact of nuclear war and weapons escalation, and the importance of the environment to the quality of life.

The authors of "Education for a Democratic Future" do make the most prominent attempt to include equity between generations in their proposal. These authors state that they,

"envision a society where parents raise their children without fear that racial, class, or religious prejudice, war, disease, or starvation, will destroy their futures."

(1982, p. 375)

This is the only reform proposal which most closely matches the values and content of sustainable development. Decentralization, participatory democracy, and equitable relations between people of the U.S. are the cornerstones of this proposal. The authors convey the importance of equity in both economic and political matters to the welfare of both present and future generations.

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Generally, the other proposals have little to say about future generations, even though many of the proposals have futuristic titles. The concern for the future is focused upon continued economic growth, and sustaining or regaining U.S. hegemony throughout the globe. Nothing is mentioned regarding the importance of maintaining the resource base from which that economic growth is drawn. The more traditional conservative proposals suggest the need to sustain an academic search for the truth through education which emphasizes the transmission of cultural literacy. Although these proposals include the notion of sustaining U.S. culture, nothing is included which would imply the obligations of present to future generations, or the importance of environmental protection to the future of mankind.

The authors of the proposals reviewed in this section mention little or nothing concerning equity between nations. The problems brought about by the cultural pluralism found in the U.S. were mentioned, but strictly speaking, equity between nations was ignored. The proposals, whose purpose was primarily economic productivity, seek education for U.S. citizens for the purpose of maintaining economic advantage in international relations. These reports stress competition and the United States' fall from global hegemonic status. Essentially, the proposals would seek to continue or enhance the inequitable relationships which now exist between the nations of the world.

Most of the proposals mention the need for cooperation between federal, state, and local political levels to enhance the
delivery of education to U.S. students and preservice teachers. None of the reports suggest educational cooperation at a global level of organization, however. This suggests that the U.S. educational system has nothing to learn from other cultures. Although the growth of international markets and global interconnections are mentioned, the omission of global cooperation in education implies an ethnocentric position. By this omission the reports represent a bias which is imparted to U.S. preservice teachers and students. The exception in this regard is the report of the Commission on Global Education which suggests the development of cross-cultural teacher education and student programs on topics of international concern.

**Teacher Preparation In Sustainable Development Content**

Literature concerning teacher preparation in sustainable development content demonstrates a lack of understanding and coordination of the ecological and ethical components of sustainable development. The following is a list of conclusions from the review of literature concerning teacher preparation in sustainable development content.

1. U.S. teacher education is strongly controlled by state mandates through teacher certification requirements. This control is accomplished by either course requirements, certification tests, or college accreditation. Those people who control certification maintain a great degree of control over teachers. The balance of power is maintained primarily by means of the certification process. Teachers are often depicted as
wielding great power over students in the classroom. While it is true that the grading and discipline procedures found in the classroom afford teachers power over students, teachers have much less power than typically accorded them in the literature concerning what and how they teach.

2. Students are the most powerless people in the U.S. education process. It would be difficult to prove that the passivity required of students in schools corresponds with the passivity of voters in local, state, and national elections. It would also be difficult to prove that the passivity found in the U.S. regarding gross national inequities found across social strata corresponds with the schooling process. The stress upon meritocratic justice found in schools does seem to correspond to the passivity and inequality found in U.S. society, however. The equality of opportunity found in both U.S. society and schools is used to justify the inequity inherent to justice based upon virtue conceptions of property rights arrangements.

These considerations suggest that education in the U.S. is not in the trouble that many of our political and educational leaders would have us believe. The educational system in the U.S. is working perfectly to train the passivity required of compliance to inequitable societal relationships. Following this perspective, the failures of the U.S. economy essentially reduces to the failure of U.S. business and the state that supports that business and, not the failure of U.S. educational system.
3. If one of the roles of education involves the enculturation process, the hidden agenda inherent to the education process must match the content area which is being taught. Content is not the only message. Process is also a part of the message. Presently both content and process support a authoritarian, elitist, fragmented, mechanistic, technocratic, and meritocratic worldview. Sustainable development content is very different than present educational content, and the processes required of instruction in sustainable development content would require a different hidden agenda. This agenda would pay attention to the democratic and moral implications of the education process. To match content with process, education in sustainable development content would have to make its hidden agenda consistent with democratic reform rhetoric so common in today’s educational literature. In other words, the educational community would be required to “walk their talk.”

In addition to making content and process consistent with the objectives of sustainable development, the institutional structure of schools must also correspond with sustainable development’s message. Tax schemes typically inhibit the principle of equal opportunity required of justice (Kozol, 1991). The industrial, top down management model followed in most U.S. schools is inconsistent with the process of sustainable development.

4. Global education, environmental education, sustainable development education, moral and civic education typically
describe the same educational processes and content. Their literature is not shared, however. Their educational battles seem to be fought in isolation when their parallel agendas suggest the need of disciplinary communication.

5. Moral education, as presented in the literature, reveals anthropocentrism both in its content and language. Moral education often stresses the classroom setting as an equitable and supporting community in which humans may develop their capacity for moral reasoning. Unfortunately, the concept of community is almost exclusively limited to a community of human beings. Leopold’s (1966) conception of community is nearly non-existent in this literature.

6. There is little in the moral education literature which combines philosophical principles of how we ought to conduct our lives with a realistic and complete conception of human needs. Just as with the development literature, educational theory and reform agendas concentrate on human needs involving having. Little emphasis is placed on the need to be, do, or interact. As a result, the educational literature reinforces libertarian and economic efficiency theories which strongly advance the position of individual humans over the importance of community, care, and obligation. There are exceptions to this individual orientation of moral education (Durkheim, 1973; Noddings, 1984; Licona, 1988), but generally communal and individual conceptions of morality are not balanced.
Both sustainable development content and the process of education are ethically orientated. Without attention to the moral implications of both content and process, the messages received by preservice teachers will be mixed and confusing.

7. Education can't be devoid of value, but teachers should not avoid issues involving values. The notion of neutrality can be a dangerous if misunderstood, and is in itself, a value laden concept. Indoctrination cannot be avoided in the education process, but can be eased by removing the disparities in power. Grading is a large part of the maintenance of this disparity and as a result, grades and degrees become more important to students than knowledge or wisdom. Without grades and degrees, students can receive no power. In this power relationship, the quest for wisdom that should be a part of the education process becomes of secondary concern.

10. Schools are arguably the most undemocratic institutions in our culture. For instance, textbooks are not created through the democratic process. Teachers have only token input into the curriculum and even less input into the operation of their school. Students are essentially powerless in schools and are treated as children through their college education. Students are taught about the democratic process, but receive training through the hidden curriculum which supports passive acceptance of authoritarian and elitist decision making with its strong emphasis upon a virtue theory of justice.

11. Educational rhetoric stresses equality and freedom, yet
educators fail to deal with the often contradictions that these concepts represent. These contradictions represent the balance between rights and obligations. This balance is lost in the educational process in the United States. In addition, authors concerned with education offer little recognition of the importance of community. The literature demonstrates the lack of balance between liberty, equality, and solidarity. Because of the overemphasis on individual freedom, the structural inequality inherent to virtue and economic efficiency theories of justice prevails in U.S. schools.

12. Educational literature is humorless and lacks imagination. Schools also follow this lack of humor and creativity. Humor, imagination, creativity, or beauty are rarely mentioned by educators, or the literature which they produce. For instance, the conservative education literature often suggests the need for more student preparation in math or science, but rarely mentions the need for more art, music, or dance education in school.

13. Arguments in the educational literature generally fail to address the major issues. Concern revolves around issues such as merit pay, or choice of schools. Unfortunately, such things as the implications of grading and the summative evaluation process are left unconsidered. The educational literature also fails to address the lack of democratic process found in schools. The implications and assumptions of behavioral modification, so common in U.S. schools, are not considered.
Direction Provided By The Review Of Literature

There is a need for educational change that would educate people in the ways of ecologically oriented development. An important part of this change is the reorientation of teacher preparation. This education would combine the need for democratic processes in the sustainable development process with a democratic teaching orientation. Teacher education would be modelled after the ecological orientations of a sustainable society and justified by a theory of obligation encompassing equity issues among humans, between humans and other species, and between present and future generations. In this way, teacher education would focus upon an ecologically sensitive and relevant goals based upon sound ethical justification. The literature suggests the need to:

1. Evaluate the current state of teacher preparation concerning sustainable development content.

2. Provide an ecological model of the concept of sustainable development.

2. Provide a formal ethical justification of the sustainable development process which goes beyond the present monistic and anthropocentrically oriented theories.

3. Suggest a possible model for the instruction of sustainable development content in schools. This model would include both content of sustainable development and processes schools might pursue that would compliment that content.

4. Suggest a possible model for the preparation of teachers consistent with the content and processes of sustainable development.
This chapter describes the methodology which will be used to gather and analyze information concerning the preparation of preservice teachers in sustainable development content. The chapter begins with a listing of objectives which expand the general research questions listed in the first chapter. A summary of the questions and their rationale follows the objectives of the study. These questions relate to the objectives and are intended to provide the vehicle by which those objectives may be accomplished.

The study design describes the population and sampling technique, the procedures to be used for data collection, and the instruments to be used. The chapter concludes with a description of the limitations to the study.

**STUDY OBJECTIVES**

The information gathered by this study will serve to describe the status of preservice teacher education in sustainable development content and provide direction for the creation of models for schooling and teacher preparation. Upon completion of this study I will have:

1. Described the inclusion of sustainable development content in a random sample of U.S. institutions providing preservice teacher education.
2. Described the integration of sustainable development content and pedagogy at a random sample of U.S. institutions providing
preservice teacher education.
3. Described the inclusion of courses containing ethical content in the preparation of preservice teachers at a random sample of U.S. institutions.
4. Described the relationship between teacher education reform literature and sustainable development content.
5. Described the problems associated with the inclusion of environmental and sustainable development issues into present curricular structures.
6. Described changes in educational organization consistent with sustainable development.
7. Described changes in the teaching process consistent with sustainable development.
8. Described a school curriculum consistent with sustainable development.
9. Described a presevice teacher curriculum consistant with the changes in schools which might facilitate education for sustainable development.
10. Described the inclusion of sustainable development content areas in state certification requirements.
11. Provided the philosophical basis for changing preservice teacher preparation to match our obligations to life.

**Evaluation Question Summary**

The evaluation question summary is a list of questions and sub-questions with their rationale used to gather information. These questions relate to the objectives listed above and are
intended to provide the vehicle by which those objectives may be accomplished. They also form the basis of the specific questions found in the study's instruments. The form of these questions will be expanded or altered slightly depending upon the individuals called upon to answer each question and the nature of the procedure being used.

<table>
<thead>
<tr>
<th>Question</th>
<th>Why Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the present status of the instruction of sustainable development content in preservice teacher preparation programs across the U.S.?</td>
<td>This general question implies the importance of teacher preparation in this content area. Answers to this question represent a baseline from which to build in regard to sustainable development content in teacher preparation.</td>
</tr>
<tr>
<td>1.1 How is sustainable development content organized in preservice teacher preparation?</td>
<td>The organization of this content represents the power structure which controls teacher education.</td>
</tr>
<tr>
<td>1.11 Is there appropriate staffing?</td>
<td>Staffing often dictates the potential of offering preservice teachers adequate preparation in this area.</td>
</tr>
<tr>
<td>1.12 Who coordinates this educational content area?</td>
<td>This answer will represent the power structure and the commitment of the institution to teacher preparation in this area.</td>
</tr>
<tr>
<td>1.13 Is course work in sustainable development content integrated with pedagogy?</td>
<td>This combination is important to understanding how to teach ethical types of content. This integration component also exposes the hidden curriculum inherent to all instruction.</td>
</tr>
<tr>
<td>Question</td>
<td>Why Important</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.14 What obstacles deter the inclusion of this content into the curriculum?</td>
<td>This question is meant to illuminate problems encountered in the planning and implementation process.</td>
</tr>
<tr>
<td>1.2 What are the curricular requirements for preservice teachers? Are there any differences across teaching majors?</td>
<td>Emphasis through graduation requirements lends credence to this content area. Differences across teaching majors illustrates a non-holistic approach to teaching interdisciplinary curricular content.</td>
</tr>
<tr>
<td>1.21 Are electives in sustainable development content areas available for preservice teachers? What are these electives?</td>
<td>Electives are an important part of the individualization of the educational program. Electives in sustainable development content areas are often not available or not taken because of lack of curricular flexability or excessive requirements.</td>
</tr>
<tr>
<td>1.22 How are the ethics involved with teaching and sustainable development handled by this institution?</td>
<td>Ethics are a critical component of sustainable development content and teaching. But unfortunately, this component is often removed because of the controversial nature of ethically orientated content or procedures.</td>
</tr>
<tr>
<td>1.23 How are the four levels of equity which help define sustainable development covered by the education curriculum?</td>
<td>This question is meant to investigate the ideological and ethical position taken by the institution. Coverage of these areas is critical to preservice teacher education if these potential teachers are to understand the interdisciplinary nature and importance of sustainable development content. The question also implies the moral responsibility of institutions in providing</td>
</tr>
<tr>
<td>Question</td>
<td>Why Important</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.3 What is the administrator's personal knowledge of sustainable development content and position on the inclusion of this content into the teaching curriculum?</td>
<td>Leadership is a critical component to the success of the planning, implementation, and reshaping of educational programs. Without the commitment of leadership, most curricular innovations are doomed.</td>
</tr>
<tr>
<td>2.0 How does the teacher education reform literature treat the content found in sustainable development?</td>
<td>If educational direction follows reform literature, the inclusion of sustainable development content in that literature would be important. The analysis of teacher education reform literature is found in the literature review.</td>
</tr>
<tr>
<td>2.1 What was the stated purpose of the reform?</td>
<td>The purpose of the reform gives an initial clue to the ethical orientation of the reformers.</td>
</tr>
<tr>
<td>2.2 Was there a plan for the implementation of the reform? What were the major changes in education that were recommended?</td>
<td>Without a plan for the implementation of change, the chances of implementation are slight.</td>
</tr>
<tr>
<td>2.3 What are the positions as described by the language used by the writers?</td>
<td>Most reforms follow anthrophocentric language patterns which fail to address the needs of other species or other generations. The inclusion of any ecocentric or holistic language would be noteworthy.</td>
</tr>
<tr>
<td>2.4 Who wrote the reform?</td>
<td>The orientation of reforms is often predictable from an analysis of the writers. Power relationships are expressed by those included or excluded from the writing process.</td>
</tr>
</tbody>
</table>
Question
2.5 What was the ethical orientation of the reform?

Why Important
The conception of justice and the treatment of the four levels of sustainable development should be consistent with the ethical orientation of the reform.

3.0 How do the state certification requirements impact the inclusion of sustainable development content?

The states exert control over the education of teachers through certification requirements.

3.1 Are there goal statements, general course requirements, or professional course requirements in the following areas: Environmental Education, Global Education, Holistic/Integrated Study, Ethics/Equity/Justice, Multicultural Education, Sustainable Development, Science, Technology/Society?

State emphasis in any of these areas might imply an orientation toward sustainable development content.

3.2 Are there tested competencies required for teacher certification?

Because the relationship between state certification and the colleges involves power, the states often get around charges of directly controlling university requirements by the use of competency testing.

Procedures

Three procedures were used to compile information for this study. The first procedure was a survey of education department representative deans at institutions of higher learning which included preservice teacher education. This survey regarded the status of sustainable development content in the preservice teacher curriculum at their institution. The second procedure
involved a review of reform literature for the inclusion of an orientation toward sustainable development. The third procedure involved a review of state certification requirements with specific attention given to the inclusion of sustainable development content.

**Survey Of Institutions**

Surveys were mailed to education department representatives at 440 member institutions of the American Association of Colleges for Teacher Education. The surveys were sent to the educational chairperson, dean, or department head whenever possible. When no such person was listed, a professor in the education department was selected. Several surveys were completed by professors selected by the chairperson. A second mailing followed to those institutions not returning the initial survey. The total response rate for this survey was 50.9% (224/440).

Descriptive statistics are applied to the survey data because the study represents an initial exploration, asking for general content descriptions. A brief explanation of sustainable development was provided in both the cover letter and the survey. Questions were asked that required the respondents to organize their curriculum in ways which might reflect the preparation of teachers in issues of ethics, equity, and sustainability. Specifically, the administrators were asked to describe:

1. Respondent responsibilities and faculty characteristics.
2. The inclusion of required course work or emphasis upon ethics or moral development.
3. The extent of holistic or ethical course inclusion which
might play a significant role in the preservice teacher curriculum.
4. Their opinions concerning sustainable development, the inclusion of sustainable development in the preparation of teachers, and teacher advocacy for equity.
5. The integration of pedagogy and issues of sustainable development in their institution's curriculum.
6. Their institution’s instruction for preservice teachers in equity issues across generations, between humans and other species, among nations, and within nations.
7. The differences in curricular emphasis among elementary education, secondary science education, and secondary social studies education majors.
8. Their perceptions of the preparation received by preservice teachers graduating from their institution regarding sustainable development content.

The education deans of the State University of New York colleges and universities were contacted as part of a pretest. Results of this pretest can be found in Appendix # 3. The survey was accompanied with an explanatory letter concerning the nature of the survey, appropriate definitions, directions for completing the survey, and the promise of anonymity. A handwritten request for the return of the survey accompanied a second mailing. Copies of the survey and accompanying cover letter can be found in Appendix # 2.
Chapter Nine
Results Of A Survey Of
Teacher Preparation In Sustainable Content

The study of preservice teacher preparation in sustainable development content provides an initial exploration and description of what is occurring in teacher preparation which might be used to help bring about a sustainable society. Teacher preparation in issues of sustainable development represents an ecocentric and holistic approach to teacher preparation. This approach offers a much different orientation from the various forms of anthropocentric and mechanistic teacher preparation that are presently debated in the educational literature (Bowers, 1993).

Education for sustainable development provides a vehicle through which the orientation of our society is called into question. It goes beyond the consideration of curricular content to include the teaching process and organization of schooling. As such, education for sustainable development represents more than a call for another course to be added to the curriculum.

The results found in this chapter are from a survey of preservice teacher preparation in sustainable development content. A copy of the survey instrument may be found in appendix #2.
1. The first group of questions asked in this survey concerned the role of the respondent and the institution’s program. Respondents were asked to describe their role in teacher education. (n=224)

75.9% My primary responsibilities are with teacher preparation.
71.0% More than 50% of my responsibilities are administrative.
54.0% I currently teach one or more undergraduate courses a year.

Respondents were then asked to describe the educational background of their full-time faculty preparing graduates to become classroom teachers. (n=224)

00.7% have a degree in Environmental Studies
01.1% have a degree in Global or International Studies
00.2% have a degree in other Interdisciplinary areas

Because some institutions involved large faculties, approximations were requested for respondents not knowing the exact numbers. Several respondents described teaching as an interdisciplinary area when asked to specify other interdisciplinary degrees. These numbers were not included in 00.2% figure. Although educational degrees often involve a good deal of study across disciplinary boundaries, teaching was not considered interdisciplinary by this study.

The low percentage of full-time education faculty with academic degrees in interdisciplinary topics represents a barrier for the inclusion of sustainable development content in teacher preparation. Because of the specialized nature of the present educational system, education faculty members typically don’t have extensive formal background in holistic study, or hold interdisciplinary degrees. The background of education faculty is important as it will impact the perspective from which they instruct.
2. The second set of questions concerned the inclusion of requirements, or emphasis upon ethics and moral development in the teacher preparation curriculum.

The administrators were asked if a course in moral development or general ethical theory was required of preservice teachers. (N = 222)

15.8% yes
84.2% no

In covering issues such as technology, cultural interactions, or human population growth, how are ethical dimensions infused? (N = 208)

32.7% Strong emphasis
63.0% Included but not stressed
4.3% Not included

The educational literature has emphasized the strongly moral nature of education and teaching (Benninga, 1991; Bok, 1990; Goodlad, et al, 1990d; Purpel, 1989). The curricular requirements of responding institutions reflect that preservice teachers may not be prepared in those areas, however. It must be assumed that those in control of the curricular content for preservice teachers either don't share the belief that education is an ethical undertaking, or don't share the enthusiasm for stressing the ethical nature of teaching through their course requirements.

The responses to the question concerning ethical infusion demonstrate a lack of emphasis on the ethical dimensions of sustainable development issues. With 67.3% of the responding schools not stressing, or not including the ethical aspects of
sustainable types of content, it must be assumed that preservice teachers are generally being trained to accept the tenents of a mechanical and anthropocentric worldview. Specifically, teachers are tacitly being trained to accept that technology will save us, inequitable relationships between cultures is inevitable, and human beings are the ultimate resource. We should understand what preservice teachers are being taught, how they are taught, how their education is organized, and what they are not being taught.

3. The next question asked the administrators to estimate the inclusion of courses with a holistic or ethical orientation which might play a significant role in the education of preservice teachers. Table 3 shows respondent estimations of preservice teacher course work in holistic or ethical courses.

The inclusion of course work that might help educate preservice teachers in holistic or ethical content areas is clearly lacking. Although the courses referred to by the study might not be taught in a holistic fashion, and might not include ethical dimensions, these courses probably represent the best opportunity to provide preservice teachers with an introduction to holistic and ethical content areas. This type of content also reflects the type of content found in education for sustainable development.
Many courses with holistic and ethical content are either not offered or elected by less than 50% of education majors at responding institutions. Combining the not offered or elected by less than 50% categories in the above table is reflected by table 4.

Table 3 - Percentage of course work inclusion for preservice teachers at responding institutions.

<table>
<thead>
<tr>
<th>Course</th>
<th>Required of all Edu. majors</th>
<th>Elected by 50%+ of edu. majors</th>
<th>Elected less than 50% edu. majors</th>
<th>Not Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science</td>
<td>17.2%</td>
<td>9.9%</td>
<td>55.7%</td>
<td>17.2%</td>
</tr>
<tr>
<td>Sustainable Development</td>
<td>3.2%</td>
<td>3.2%</td>
<td>17.0%</td>
<td>76.6%</td>
</tr>
<tr>
<td>Environmental Ethics</td>
<td>3.3%</td>
<td>2.2%</td>
<td>31.7%</td>
<td>62.8%</td>
</tr>
<tr>
<td>Outdoor Education</td>
<td>6.5%</td>
<td>3.8%</td>
<td>45.7%</td>
<td>44.0%</td>
</tr>
<tr>
<td>Multicultural Perspectives</td>
<td>66.2%</td>
<td>8.1%</td>
<td>13.8%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Science/Technology/Society</td>
<td>35.8%</td>
<td>13.4%</td>
<td>28.4%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Human Rights Education</td>
<td>12.4%</td>
<td>5.4%</td>
<td>16.8%</td>
<td>65.4%</td>
</tr>
<tr>
<td>Environmental Education</td>
<td>21.2%</td>
<td>8.7%</td>
<td>39.8%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Global Perspectives</td>
<td>22.2%</td>
<td>7.8%</td>
<td>35.2%</td>
<td>35.8%</td>
</tr>
</tbody>
</table>

Table 4 - Percentages of preservice teachers at responding institutions who take selected courses less than 50% of the time, or did not take this course because it was not offered by the institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science</td>
<td>72.9%</td>
</tr>
<tr>
<td>Sustainable Development</td>
<td>93.6%</td>
</tr>
<tr>
<td>Environmental Ethics</td>
<td>94.5%</td>
</tr>
<tr>
<td>Outdoor Education</td>
<td>89.7%</td>
</tr>
<tr>
<td>Human Rights Education</td>
<td>82.2%</td>
</tr>
<tr>
<td>Environmental Education</td>
<td>80.1%</td>
</tr>
<tr>
<td>Global Perspectives</td>
<td>71.0%</td>
</tr>
</tbody>
</table>

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If the type of course work taken by preservice teachers is important, the chances appear slim that newly graduated teachers would be able to provide their students with a balanced perspective concerning issues that will shape their lives. Preservice teachers are being educated in our society's ethical and power relationships. This training is accomplished through a curriculum which will maintain meritocratic relationships, and fail to address the assumptions of a system of justice strongly oriented toward neo-classical economic principles.

The administrators responding to this survey appeared to have some problems answering this question. Several respondents stated that they were unable to provide this type of information. Many others chose not to respond to this question, or responded only in part. Table 5 represents the number of responses for each of the generic course titles and the percentage of the total respondents (N = 224) not providing information regarding course titles.

<table>
<thead>
<tr>
<th>COURSE TITLE</th>
<th>NUMBER RESPONDING</th>
<th>PERCENTAGE NOT RESPONDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science</td>
<td>203</td>
<td>9.4%</td>
</tr>
<tr>
<td>Sustainable Development</td>
<td>188</td>
<td>16.1%</td>
</tr>
<tr>
<td>Environmental Ethics</td>
<td>183</td>
<td>18.3%</td>
</tr>
<tr>
<td>Outdoor Education</td>
<td>184</td>
<td>17.9%</td>
</tr>
<tr>
<td>Multicultural Perspectives</td>
<td>210</td>
<td>6.2%</td>
</tr>
<tr>
<td>Science/Technology/Society</td>
<td>201</td>
<td>10.3%</td>
</tr>
<tr>
<td>Human Rights Education</td>
<td>185</td>
<td>17.4%</td>
</tr>
<tr>
<td>Environmental Education</td>
<td>196</td>
<td>12.5%</td>
</tr>
<tr>
<td>Global Perspectives</td>
<td>193</td>
<td>13.8%</td>
</tr>
</tbody>
</table>

Table 5. Number of responses to questions concerning course work taken by preservice teachers for selected courses.
The numbers of those not responding may represent a poorly worded, or inappropriate question. However, these numbers might also represent administrators who simply could not offer the "best estimate" asked for by the question. I believe that administrators should generally be able to estimate what courses their students are taking. The smorgasboard of course possibilities offered on many college campuses may make this estimation difficult.

The exception to the lack of holistic and ethical emphasis appear in the area of Multicultural Perspectives and Science/Technology/Society courses. Course work in Science, Technology, and Society is required in 35.8% of responding institutions. Course work in multicultural perspectives is required of, or elected by over half of all education majors at 74.3% of the institutions responding. This emphasis upon multicultural education is probably the result of the lack of representation of ethnic minorities among teachers (Pressman and Gartner, 1986), the racial tensions present in our society (W. Berry, 1989; Hacker, 1992; Malcolm X, 1965), and the changing racial composition of U.S. society (Kellogg, 1988).  

4. The fourth group of questions involve the respondent's opinions concerning sustainable development and the inclusion of sustainable development in the preparation of teachers. A definition and explanation of sustainable development preceded this group of questions. Equity issues were stressed in the explanation.
When asked if they personally concurred with the tenets of sustainable development, and thought that these types of issues were important, the administrators responded (n=222):

- 51.4% Strongly agreed
- 42.3% Somewhat agreed
- 4.5% Expressed no opinion
- 1.4% Somewhat disagreed
- 0.4% Strongly disagreed

When asked if sustainable development as defined by the study should be a part of the educational background of all who enter the teaching professions, the administrators responded (n=224):

- 31.7% Strongly Agreed
- 50.4% Somewhat Agreed
- 8.9% Expressed no opinion
- 8.4% Somewhat Disagreed
- 0.4% Strongly Disagreed

Administrators were asked if information concerning the natural resources and populations of nations should be taught to preservice teachers. They responded (n=222):

- 42.8% Strongly agreed
- 47.7% Somewhat agreed
- 6.3% Expressed no opinion
- 3.2% Somewhat disagreed
- 0.0% Strongly Disagreed

When asked if advocacy for equity by teachers in sustainable development issues was inappropriate because it compromises the rights of the individual, the administrators responded (n=223):

- 8.1% Strongly agreed
- 10.8% Somewhat agreed
- 19.7% Expressed no opinion
- 30.5% Somewhat Disagreed
- 30.9% Strongly Disagreed

The opinions of the administrators responding to this survey suggest strong concern for the issues raised by sustainable development. This data may illustrate the problems of ambiguity that are inherent with complex ethical questions, however. For instance, no one can be against freedom. But, freedom can mean "freedom to," or "freedom from." The meaning of freedom also changes when considering social freedom, political freedom,
economic freedom, or the freedom of movement.

Similarly, sustainable development can take on many different meanings. Everyone wants to live in a supportive family and caring community. How we achieve individual freedom and a responsive community is really the important question. How do we balance liberty, equality, and solidarity? The administrators responding to the survey generally agree, however, that sustainable development issues are important (93.7%) and should be a part of a teacher’s educational background (82.1%).

5. The fifth question involved how sustainable development issues are taught to preservice teachers.

Administrators were asked if there was a course which integrated issues of sustainable development with how to teach those issues. 17.7% of the respondents stated that their institution had a course(s) that combined issues of sustainable development and pedagogy. This type of course was taken by 73.2% of the preservice teachers at these institutions. 82.3% of the respondents had no such course.

Taking courses in issues of sustainable development certainly does not mean that preservice teachers would be able to instruct students through an investigation of this content area. This question suggests that there may be a need to address the specific educational dilemmas inherent to instructing applied ethical content areas. If Bok (1990) is correct in suggesting the difficulty of teaching applied ethics, close attention should be paid to the integration of pedagogy and issues of sustainable development content. But, 82.3% of the institutions responding
state that they offer no such integrative types of instruction. It follows that even if an institution offers sustainable development content to its preservice teachers, they might lack the skill and strategies required to guide students through instruction in these ethical and often emotional issues.

6. The sixth group of questions asked the respondents to assess preservice teacher preparation in equity issues across generations, between humans and other species, among nations, and within nations.

When asked if their curriculum provides instruction for K-12 preservice teachers in equity issues across generations, the administrators responded (n=221):

- 10.4% Strong emphasis - a major component
- 63.8% Included - not stressed
- 25.8% Not included

When asked if their curriculum provided instruction for K-12 preservice teachers in equity issues between humans and other species, the administrators responded (n=218):

- 9.2% Strong emphasis - a major component
- 49.1% Included - not stressed
- 41.7% Not included

When asked if their curriculum provided instruction for K-12 preservice teachers in equity issues among nations, the administrators responded (n=218):

- 11.0% Strong emphasis - a major component
- 65.1% Included - not stressed
- 23.9% Not included

When asked if their curriculum provided instruction for K-12 preservice teachers in equity issues within nations, the administrators responded (n=217):

- 20.7% Strong emphasis - a major component
- 59.9% Included - not stressed
- 19.4% Not included

These percentages suggest that equity issues for K-12 preservice teachers are not stressed. Table 6 represents the combination of "Included - not stressed" and "Not Included"
categories used in this question. This table illustrates that lack of stress placed upon issues of equity in preservice teacher preparation. It should also be noted, however, that the majority of institutions preparing K - 12 teachers at least include equity issues for their preservice teachers.

<table>
<thead>
<tr>
<th>% of Institutions Not Stressing, or Not Including Equity in Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Across Generations 89.6%</td>
</tr>
<tr>
<td>Between Humans and other species 90.8%</td>
</tr>
<tr>
<td>Among Nations 88.0%</td>
</tr>
<tr>
<td>Within Nations 79.3%</td>
</tr>
</tbody>
</table>

Table 6. Percentage of institutions not stressing or not including equity issues in their curriculum for K-12 preservice teachers.

Several respondents were distressed by a question lumping all preservice teachers. These administrators suggested the difficulty in assessing the overall educational preparation in these issues because of the great differences existing in curricular requirements across disciplines. These difficulties illustrate the fragmented and specialized nature of our present educational system. The equity issues addressed by sustainable development cross those boundaries, however.

The high percentages of responding institutions that neither stress nor include these issues represents a failure of our educational system to include issues of justice into the curriculum. These figures also correspond to the findings of Su (1992) who found that a small percentage of surveyed students and
faculty believing in the radical view for the primary function of schooling in the United States. This researcher suggested,

"It will be unrealistic to expect future teachers and their educators to change quickly to become committed to the cause of restructuring and transforming the existing social order into a more just and equitable society. (p. 151)

Content coverage is certainly important, but the teaching process and institutional organization are also critical. The lack of emphasis on justice and equity is an expression of the indoctrinary nature of the teaching process, school organization, and content coverage of which both preservice teachers and their instructors have been a part. Participants in the educational process have been trained to allow issues of equity and the distribution of justice to go unquestioned.

7. The seventh set of questions asked administrators to consider the education given preservice teachers in specialization areas. These questions illustrate the different preparation received by elementary education, secondary science education, and secondary social studies education majors regarding social/political, ecological, technological, ethical/equity content. Table 7, table 8, and table 9 describe the emphasis in this type of content for elementary education, secondary science, and secondary social studies preservice teachers respectively.
The respondents were asked to describe the content emphasis provided for elementary education preservice teachers.

<table>
<thead>
<tr>
<th>Sustainable Development Content Area</th>
<th>Strong Emphasis</th>
<th>Emphasized But Not Major Component</th>
<th>Little Inclusion</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Political</td>
<td>10.4%</td>
<td>56.7%</td>
<td>28.9%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Ecological</td>
<td>12.1%</td>
<td>47.7%</td>
<td>36.7%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Technological</td>
<td>19.8%</td>
<td>47.2%</td>
<td>29.4%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Ethical/Equity</td>
<td>25.5%</td>
<td>46.5%</td>
<td>24.0%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

Table 7. Emphasis in sustainable development content areas for preservice elementary education teachers.

The respondents were asked to describe the content emphasis provided for secondary science preservice teachers.

<table>
<thead>
<tr>
<th>Sustainable Development Content Area</th>
<th>Strong Emphasis</th>
<th>Emphasized But Not Major Component</th>
<th>Little Inclusion</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Political</td>
<td>14.0%</td>
<td>46.5%</td>
<td>31.4%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Ecological</td>
<td>43.7%</td>
<td>39.1%</td>
<td>13.8%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Technological</td>
<td>33.5%</td>
<td>45.1%</td>
<td>19.7%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Ethical/Equity</td>
<td>23.6%</td>
<td>48.3%</td>
<td>20.1%</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Table 8. Emphasis in sustainable development content areas for preservice secondary science teachers.
The respondents were finally asked to describe the content emphasis provided for secondary social studies preservice teachers.

<table>
<thead>
<tr>
<th>Sustainable Development Content Area</th>
<th>Strong Emphasis</th>
<th>But Not Major Component</th>
<th>Little Inclusion</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Political</td>
<td>47.6%</td>
<td>38.1%</td>
<td>14.3%</td>
<td>0.0</td>
</tr>
<tr>
<td>Ecological</td>
<td>11.4%</td>
<td>50.0%</td>
<td>30.7%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Technological</td>
<td>24.6%</td>
<td>36.5%</td>
<td>34.1%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Ethical/Equity</td>
<td>30.4%</td>
<td>48.2%</td>
<td>14.3%</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Table 9. Emphasis in sustainable development content areas for preservice secondary social studies teachers.

These questions concern teacher preparation in traditional certification areas and content related to sustainable development. The questions asked administrators for information that would require them to look at their teaching curriculum from a different perspective. For instance, an assumption inherent to the questions was that teacher preparation included more than just the courses typically listed under "professional preparation." Some respondents found the questions difficult because of the multiple courses filling general studies requirements at most institutions. This array of courses allows students to take any number of combinations of courses, and therefore limits an administrators ability to assess the content coverage of the preservice teacher curriculum.

The assumption is made that course work stressed by institutions for their preservice teachers is important. The responses by the administrators surveyed by this study illustrate
the lack of strong emphasis upon ethical/and equity content areas as related to sustainable development.

The failure of infusion strategies regarding environmental education (Gigliotti, 1992; Simmons, D.A., 1989) is consistent with the lack of emphasis placed upon the ecological aspects of sustainable development content found in this survey. Regarding this content, administrators either believed that ecological content was not a major component, or had little inclusion in the preparation of preservice teachers. Table 10 illustrates this lack of preparation in ecological content for preservice elementary, secondary science, and secondary social studies teachers.

<table>
<thead>
<tr>
<th>PRESERVICE TEACHER</th>
<th>% OF INSTITUTIONS WITH LIMITED INCLUSION OF ECOLOGICAL CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Education</td>
<td>84.4%</td>
</tr>
<tr>
<td>Secondary Science</td>
<td>52.9%</td>
</tr>
<tr>
<td>Secondary Social Studies</td>
<td>80.7%</td>
</tr>
</tbody>
</table>

Table 10. Percentage of institutions whose preservice teachers are provided with little inclusion of ecological content, or where ecological content does not constitute a major component of the preservice teacher curriculum.

8. The last set of questions asked the respondents to assess the overall preparation of preservice teachers from their institution in sustainable development content. Table 11 describes the percentages of the total number responding to this question.
The respondents were asked if they believed the typical preservice teacher graduating from their institution was highly qualified, moderately qualified, or not qualified to instruct in areas of sustainable development.

<table>
<thead>
<tr>
<th></th>
<th>Highly Qualified</th>
<th>Moderately Qualified</th>
<th>Not Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elem. Ed. Majors</td>
<td>6.7%</td>
<td>54.1%</td>
<td>39.2%</td>
</tr>
<tr>
<td>Sec. Ed. Science Majors</td>
<td>17.0%</td>
<td>62.0%</td>
<td>21.0%</td>
</tr>
<tr>
<td>Sec. Ed. Social Studies Majors</td>
<td>11.8%</td>
<td>62.0%</td>
<td>26.2%</td>
</tr>
</tbody>
</table>

Table 11. Perceived qualification of graduating preservice teachers in sustainable development content areas.
Sustainable development covers interdisciplinary content found in social/political, ecological, technological, and ethical areas. Although ethical in orientation, sustainable development is extremely political in application as power relationships are closely scrutinized. Sustainable development considers short-term economic advantage against long-term benefits and costs. Preservation of resources and biodiversity is weighed against increased production and consumption. New technology is judged for its environmental impact as well as its economic benefits. Sustainable development concerns the effort to find new or different ways to protect animal and plant species while still allowing for an appropriate level of economic growth. It requires us to look for ways of managing our economies that are safe, fair, and sustainable.

Sustainable development is change which seeks to meet present needs without compromising the ability of future generations to meet their needs. It involves social choices at four levels of equity relationships: among generations, between humans and other species, among nations, and within nations.

Although much has been written concerning the schooling process, the preparation of teachers has received much less attention (Damerell, 1985). Research by Goodlad, et al, (1990c) on the education of educators provides a picture of preservice teacher preparation which emphasizes the ethical implications of
teaching. These researchers used historical analysis to illustrate the strongly political orientation of the education process and teacher education. Bok (1990) also stresses the moral nature of teaching. This author relates the difficulty of teaching applied ethics to students. Unfortunately, the issues which most dramatically impact the lives of students and the future of our society involve applied ethics.

There has been a seemingly endless call for educational reform in recent years (Cuban, 1990; Gibboney, 1991). In most of this reform literature the need for improving the quality of teaching is mentioned (Holtz, et al, 1989; B. Johnston, 1990). Reformers cited failure in the recruitment of quality teachers (DiMartino, 1991; J.S. Johnston, 1989), the ineffectiveness of education courses (Su, 1992), the lack of intense study in specific content (Ball and McKiarmid, 1990; J.S. Johnston, 1989), and the lack of intellectual rigor for potential teachers (Bloom, 1987). This literature represents the growing concern of our society over the increasing disequilibrium found in the United States (Hartoonian, 1991; J.W. Smith, 1989). Education has become one of the battlegrounds upon which larger societal problems are discussed and diffused (Bowles and Gintis, 1976; Giroux and Freire, 1989). Unfortunately, there is little offered in the educational debate that would follow an ecocentric orientation (Bowers, 1993; Orr, 1992).

Educational theorists often suggest different orientations concerning the purpose of schools. Conservative, progressive,
liberal, and radical educational orientations fill the literature. These educational philosophies are similar in their anthropocentrism and mechanistic orientation, however (Bowers, 1993; Stevenson, 1993; Westheimer, et al, 1992). In spite of variations, all of these orientations appeal to the individualism so prominent in the United States (Bowers, 1993). Education for sustainable development provides a change in which the focus is ecocentric and holistic.

Educators are rarely asked to enter a dialogue with students regarding the nature of our society organization, or how the education process impacts our society (Ginsburg and Clift, 1990; Illich, 1970). Students and teachers are rarely asked to equally consider both the individual and community in their education (Etzioni, 1988). In addition, equal consideration is not afforded to future generations, other species, and issues of sustainability. If the focus of our societal organization was sustainability instead of economic growth, our obligations to others would become much more easily recognized and needs more easily fulfilled.

The symptoms of an unsustainable society surround us, yet we fail to question the assumptions upon which our present societal production, morality, and knowledge systems rest (Ehrenfeld, 1981). Education for sustainable development would provide a means for all to question and evaluate those assumptions. This process of questioning and evaluating is both for the radical purpose of change toward a more equitable society and for the
conservative purpose of stability and sustainability.

The language used in the survey created problems for some respondents. For instance, the use of the words "instruct," "prepared," and "taught" could mean to give information allowing students to construct their own evaluation of meaning and allow them to construct their own values. However, these words could also mean to train, or to impose upon each student the meanings and values of the instructor. This linguistic issue is similar to the problem progressive educators have with "education for" sustainable development as opposed to "education about" sustainable development.

The constructivist seeks to limit, or reject the power relationships that exist in the education process. The problem with this individualistic approach involves the ubiquitous web of power relationships found in schools. The teacher grades, holds the keys to graduation, and determines success or failure. Although resistance is probable, students seeking graduation and employment usually must submit to the teacher’s power. Changing the words won’t change the relationship. We must recognize the power relationships and inculcative nature of both communication and our educational system (Burbules, 1986; Paranti, 1986; Tanner, 1989; Toffler, 1990). Both individual formulation of meaning and social transmission of community norms are involved (Etzioni, 1988). The individual is not now, nor has ever been the bastion of meaning. Both the community and individual determine meaning, norms, and values (Etzioni, 1991). Both the
community and individual are a part of a web of power relationships inherent to human life. To ignore the influence of others is to deny the influence of socially constructed communication upon our conceptualization of meaning and value (Bowers, 1993; Habermas, 1992). Our autonomy depends upon our understanding of the norms of the society of which we are a part (Durkheim, 1973).

Emphasis upon the individual represents an incomplete and ineffective conception of language, human nature, and reality. We require freedom to make sense of and evaluate our realities. We also require freedom to create and evaluate changes which would affect our realities. But, we are affected by the society and land community in which we are embedded. Denying, or minimizing this influence is naive and dangerous. Our stress on the individual results in a society and educational system which indoctrinates its members into an anthropocentric and individualistic conception of meaning and value (Bellah, et al, 1985; Bowers, 1993).

The process of education which stresses the individual formulation of meaning and value is as power laden and indoctrinary as education with any other focus. Arguing over the meaning of the words "to educate" vs. "to train" creates a semantic distraction. Power relationships, meaning, and value are imparted regardless of what labels we use. Education's content, process, and organization impart meaning and norms. Neither education, nor language are neutral (Bowers, 1993).
The concern of respondents over language is related to a similar concern regarding the political nature of the survey. Several respondents stated that the survey was biased and would be used to serve politically biased purposes. I believe that all education is political. As part of the communication process, education is political and involves power relationships. In addition, I believe that all development is political. Asking questions about education and sustainable development represents a challenge to our present system of distribution and retribution. However, I believe that our system of justice requires questioning and our undivided attention.

The survey represents a belief that our economies cannot grow indefinitely, and that sustainability, not growth, should be the principle around which we organize our society. The survey also represents a challenge to the dominance of individualism, anthropocentrism, and a mechanical worldview. The narrow focus of our present economic systems of justice are questioned as being appropriate for all situations. Not questioning these assumptions, principles, and systems of justice is equally as political.
Appendix 1
State Teacher Certification Requirements

State requirements were reviewed for goal statements, course requirements or professional preparation in environmental education, global education, holistic/integrated studies, ethic/equity/justice, multicultural education, sustainable development, science/technology/society. The investigation was initiated by a review of information found in the 1993 edition of Teacher Certification Requirements In All Fifty States by Robert Goddard. Information specific to each state was taken from this edition and sent to state certification officials for their verification and comment.

Alabama

Environmental Education - course not required for certification, but mentioned in goal statements concerning knowledge and demonstrated abilities for teachers.

Global Education - course not required for certification, but mentioned in goal statements for prospective teachers.

Holistic/Integrated study - course work not required for certification, but mentioned in goal statements for prospective teachers.

Ethics/Equity/Justice - course work not required for certification, but mentioned in goal statements for prospective teachers. A special education course is required for all teaching certificates.

Multicultural Education - course not required for certification, mentioned extensively in goal statements for prospective teachers.

Sustainable Development - course not required for certification.

Science/Technology/Society - course not required for certification, mentioned in goal statements for both history and science areas. Technology mentioned extensively regarding the teacher’s ability to use appropriate instructional technology.

The National Teacher Examination and state administered tests are not required in Alabama for teacher certification.
Alaska
Environmental Education - not mentioned.
Global Education - not mentioned.
Holistic/Integrated Study - not mentioned.
Ethics/Equity/Justice - not mentioned (Teachers are obligated to follow a Code of Ethics of the Education Profession, however).
Multicultural education - required.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

The National Teacher Examination and state administered tests are not required in Alaska for teacher certification.

Arizona
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable development - not mentioned
Science/Technology/Society - not mentioned

The National Teacher Examination is not required for certification, however teachers are required to pass Arizona tests in science, math, and grammar.

Arkansas
Environmental Education - not mentioned
Global Education - not mentioned for most persons seeking certification, but six prescribed hours are required of all those who are social studies certified and wish to teach global studies.
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - included in the professional education component of teacher education programs in Arkansas, but a specified course is not required for certification.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

The National Teacher Examination is required for certification in Arkansas.

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California
California has different standards for single subject matter preparation and multiple subject standards (Teachers working in elementary self contained classrooms would be considered under multiple subject standards)

Environmental Education - Course not required, but directly stated in the standards for science teachers - generally referred to in multiple subject standards.

Global Education - not mentioned

Holistic/Integrated Study - course not required, mentioned in the standards for science teachers, also included as a standard for multiple subject certification

Ethics/Equity/Justice - Course not required, but included in the professional standards by which candidates are assessed. Candidates must have examined the principles of educational equity and analyzed the implementation of those principles.

Multicultural Education - course required, second language required, there is an emphasis upon cultural diversity and multicultural understanding with preparation in these standards for both single and multiple subject areas.

Sustainable Development - not mentioned.

Science/Technology/Society - course not required, but appropriate technology mentioned in both the standards for both single and multiple subject certification.

National Teacher Examination is not required for certification, but single subject credential and multiple subject credential requires verification of subject matter competence. This verification may be accomplished in several ways.

Colorado

Environmental Education - course not required. However, an environmental education course is required for secondary science certification.

Global Education - not mentioned

Holistic/Integrated Study - not mentioned

Ethics/Equity/Justice - not mentioned

Multicultural Education - not mentioned

Sustainable Development - not mentioned, an environmental science course is required for secondary science certification

Science/Technology/Society - not mentioned, S/T/S is required for secondary science majors.

National Teacher Examination is not required for certification, but a State examination of basic skills is required.
Connecticut
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is required for certification.

Delaware
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.

Florida
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned, but required for instruction of students with limited proficiency in English
Sustainable Development - not mentioned
Science/Technology/Society - not generally required, but required for certification in middle grades general science, biology (6-12), earth-space science (6-12), and physics (6-12).

National Teacher Examination is not required for certification, but State administered certification tests are required.

Although the courses listed in the questionnaire are not a part of the specific regulation for issuance of certificates in Florida, these courses are a part of the thrust of legislation passed in 1991 called Blueprint 2000. This legislation involves the training of parents, students, and teachers in the domains generally included as sustainable development.
Georgia
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.

Hawaii
Environmental Education - elementary (K-6) certification requires an environmental science course for science certification and an environmental studies course for social studies certification.
Global Education - not generally mentioned, but required for K-6 social studies certification.
Holistic/Integrated Study - required in some content areas for secondary certification, required for K-6 certification.
Ethics/Equity/Justice - required for elementary certification in K-6 social studies area.
Multicultural Education - required for elementary certification, required for some content areas at the secondary level.
Sustainable Development - not mentioned
Science/Technology/Society - required of science, social studies, and language arts certification at the secondary level;

National Teacher Examination is required for certification.

Idaho
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - generally not mentioned, but the philosophical foundations of education are required for certification.
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is required for certification.
Illinois
Environmental Education - not mentioned
Global Education - generally not mentioned, one course is required in non-Western or Third World cultures for high school certification.
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - generally not mentioned, the philosophy of education is listed as a possible elective.
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.

Indiana
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - course work in ethical, cultural, and disability awareness is required for certification.
Multicultural Education - course work in ethical, cultural, and disability awareness is required for certification.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is required for certification. A state administered test is required which covers the content found in environmental education, global education, and multicultural education.

Iowa
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - generally not required, but 12 credits of a formal interdisciplinary program can be elected to fill K-6 specialization requirements.
Ethics/Equity/Justice - Philosophies of education and professional ethics are required for K-12 certification.
Multicultural Education - a course in Human Relations is required
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.
Kansas
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination (Professional Knowledge Component) is required for certification.

Kentucky
Environmental Education - not mentioned
Global Education - One course for K-4 certification must focus on non-Western culture
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - course not specifically required, but part of K-12 General Education competency standards.

National Teacher Examination is required for certification.

Louisiana
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - Philosophy of Education listed as a possible elective filling a requirement for certification.
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is required for certification.
Maine
Environmental Education - not mentioned
Global Education - generally not required, but Western and Eastern Civilization, global studies, and comparative government/political science courses required for social sciences certification.
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not required, but science and computer applications are required for K-8 general elementary certification.

National Teacher Examination is required for certification. A State Examination (Core Battery) is also required for certification.

Maryland
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is required for certification.

Massachusetts
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - Being equitable, sensitive and responsive to all learners is listed as a standard, but not applied specifically in course requirements
Multicultural Education - acceptance of cultural diversity listed as a standard, but not a course requirement
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification. State tests for certification - Foreign Language certification, bilingual, and ESL exemptions are included for some situations.
Michigan
Environmental Education - Environmental Studies or Environmental Education as subject areas are not a requirement for general certification, but Michigan offers an endorsement in environmental studies which can be applied to teacher certification.
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - Not specifically required as a course, but under the requirement for professional education it states, "all study should include the needs of .... and those with cultural differences."
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification. Michigan requires State Administered Certification tests in basic skills (reading, writing, and math) and are subject matter specific. The state tests for competency in the environmental education area.

Minnesota
Environmental Education - not a specific course requirement, but heavily included in the Social Studies, Life and Earth Science areas.
Global Education - not a general requirement, but required for social studies licensure.
Holistic/Integrated Study - Included in professional standards area, especially in middle school licensure.
Ethics/Equity/Justice - course not specifically required, but part of a human relations requirement.
Multicultural Education - Part of required human relations preparation.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.

Mississippi
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned
National Teacher Examination is required for certification.
Missouri
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.

Montana
Environmental Education - course not required generally for K-12 certification, but covered in common standards for all science fields.
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - Part of the general education requirement for certification of all teachers.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.
Provisional certification available with the NTE, however.

Nebraska
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - A human relations training course is required. There is very specific content prescribed by this statutory requirement.
Ethics/Equity/Justice - Course work required in discipline, including a code of ethics violations.
Multicultural Education - The human relations requirement involves cultural diversity and multicultural concerns.
Sustainable Development - not mentioned
Science/Technology/Society - There is a natural science course requirement for all teachers. This requirement doesn’t specify S/T/S, however.

National Teacher Examination is not required for certification.
Nevada
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.

New Hampshire
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.
All candidates for initial New Hampshire teacher certification must demonstrate basic skills competence in reading, writing, and math.

New Jersey
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - A course in human and intercultural relations required.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.
New Mexico
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.

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New York
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - All teaching certificates require preparation for teaching minority cultures.
Sustainable Development - not mentioned
Science/Technology/Society - course work not specifically required, but liberal arts and sciences test is required for baccalaureate degree in the liberal arts and sciences.

National Teacher Examination is not required for certification.

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North Carolina
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.
North Dakota
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - Course is required in Native American Studies.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification. State testing is required for teachers prepared in North Dakota institutions. This testing occurs throughout the program in basic skills proficiency.

Ohio
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - course work not required, but certification contingent upon individual being of "good moral character."
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.

Oklahoma
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification. A state administered certification test is required, however.
Oregon
Environmental Education - not mentioned
Global Education - Course not required for all teachers, but
Oregon elementary teachers are required to complete a course
in "cultural geography."
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - Oregon teacher education programs include
instruction in the laws prohibiting discrimination.
Included in this instruction is sex equity, racial justice,
and principles of the least restrictive environments for
handicapped students.
Multicultural Education - Oregon programs include "adaptive
procedures and lesson plans" for pupils from varying
cultural, social, and linguistic backgrounds.
Sustainable Development - not mentioned
Science/Technology/Society - course work not required for all
teachers, but is included in some science majors.

National Teacher Examination required for certification (Core
Battery Exams and specialty test in subject areas taught).

Pennsylvania
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - Course study in multicultural/cultural
diversity area required for certification.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.

Rhode Island
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.
**South Carolina**
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.

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**South Dakota**
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - Human relations course is required.
   Interdisciplinary planning and cooperative learning is part of the professional study requirement
Ethics/Equity/Justice - not mentioned
Multicultural Education - Indian Study course required.
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.

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**Tennessee**
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - not mentioned
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination required for certification.
### Texas

- Environmental Education - not mentioned
- Global Education - not mentioned
- Holistic/Integrated Study - not mentioned
- Ethics/Equity/Justice - Legal and ethical aspects of teaching required.
- Multicultural Education - course in multicultural education is required for certification.
- Sustainable Development - not mentioned
- Science/Technology/Society - Societal and ethical implications of computing and information technology required.

National Teacher Examination is not required for certification. State administered certification tests are required in ethics/equity/justice, multicultural concerns, and science/technology/society.

### Utah

- Environmental Education - not mentioned
- Global Education - not mentioned
- Holistic/Integrated Study - not mentioned
- Ethics/Equity/Justice - not mentioned
- Multicultural Education - not mentioned
- Sustainable Development - not mentioned
- Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification. State certification examinations not required.

### Vermont

- Environmental Education - not mentioned
- Global Education - not mentioned
- Holistic/Integrated Study - not mentioned
- Ethics/Equity/Justice - not mentioned
- Multicultural Education - not mentioned
- Sustainable Development - not mentioned
- Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.
<table>
<thead>
<tr>
<th>State</th>
<th>Environmental Education</th>
<th>Global Education</th>
<th>Holistic/Integrated Study</th>
<th>Ethics/Equity/Justice</th>
<th>Multicultural Education</th>
<th>Sustainable Development</th>
<th>Science/Technology/Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
</tr>
</tbody>
</table>
| National Teacher Examination required for certification. State administered tests not required.

<table>
<thead>
<tr>
<th>State</th>
<th>Environmental Education</th>
<th>Global Education</th>
<th>Holistic/Integrated Study</th>
<th>Ethics/Equity/Justice</th>
<th>Multicultural Education</th>
<th>Sustainable Development</th>
<th>Science/Technology/Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>School law requirement includes knowledge of Washington Code of Professional Conduct.</td>
<td>Cultural diversity training and experience is required</td>
<td>not mentioned</td>
<td>not mentioned</td>
</tr>
</tbody>
</table>
| National Teacher Examination is not required for certification. No state administered certification tests are required.

<table>
<thead>
<tr>
<th>State</th>
<th>Environmental Education</th>
<th>Global Education</th>
<th>Holistic/Integrated Study</th>
<th>Ethics/Equity/Justice</th>
<th>Multicultural Education</th>
<th>Sustainable Development</th>
<th>Science/Technology/Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia</td>
<td>not mentioned, but content required in science certification.</td>
<td>not mentioned, but content required in specific Social Studies certification.</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
<td>not mentioned</td>
</tr>
<tr>
<td>National Teacher Examination is not required for certification. State administered certification tests are required. Environmental content tested for science certification, ethics/equity/justice tested for social studies certification, and science/technology/society tested for science certification.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Wisconsin

Environmental Education - Adequate preparation in conservation of natural resources is required for a license to teach agriculture; early childhood, elementary/middle level education; and for middle, middle/secondary, and secondary level education licenses in science and social science, except psychology.

Global Education - The study of non-Western history or culture - approved requirement.

Holistic/Integrated Study - Human relations required. This requirement includes: (a) theory and application of human relations practices - skill building activities which constructively respond to expressions or acts which devalue other persons. (b) History, culture, customs, social institutions, values, lifestyles, and contributions of women and various racial, cultural, and economic groups in the U.S. including federally recognized American Indian tribes and bands located in Wisconsin. (c) Constitutional and legal biases related to the status of women and various racial and cultural groups in the U.S. (d) Psychological and social implications of the forces of discrimination, especially racism and sexism, and their broader impact on relations among members of various groups in the U.S. (e) Philosophical and psychological bases of the development and change of attitudes. (f) Evaluation of the impact of the forces of discrimination, especially racism and sexism, on language, instructional materials, learning activities, learning styles, interaction between staff and pupils, tests and measurement, and school environments; and assessment and if necessary, modifications of curriculum to assure multicultural and nonsexist content. (g) Professionally related direct involvement with adult and pupil members of a group whose background the student does not share.

Ethics/Equity/Justice - not mentioned, but generally included in human relations requirement.

Multicultural Education - see holistic/integrated study requirement for human relations.

Sustainable Development - not generally mentioned, but adequate preparation in cooperative marketing and consumers cooperatives is required for a license to teach agriculture and all social science subjects except psychology.

Preparation to educate for employment a requirement for certification as of 1992.

Science/Technology/Society - required for early childhood, elementary, and elementary/middle level licenses.

National Teacher Examination is not required for certification.
Wyoming
Environmental Education - not mentioned
Global Education - not mentioned
Holistic/Integrated Study - not mentioned
Ethics/Equity/Justice - knowledge of the legal and ethical
considerations of school personnel to include rights and
responsibilities of students, parents, teachers,
administrators, and other professional staff members
Multicultural Education - not mentioned
Sustainable Development - not mentioned
Science/Technology/Society - not mentioned

National Teacher Examination is not required for certification.
A state administered examination on the Constitution of the U.S.
and Wyoming is required.
Appendix 2

Survey of Preservice Teacher Preparation in Sustainable Development Content

Please contribute your professional opinions and perceptions concerning teacher preparation your institution. As you respond, please think in terms of the whole preservice program--K-12, all program majors or options. In particular, we are investigating the perceived importance of preparing teachers to deal with "sustainable development" and trying to uncover where and how it is taught either as a course or imbedded in other courses. (Definitions follow on page three of this survey.)

First, please tell us about your role in teacher preparation.

1. Check all of the following which apply to your role:
   ___My primary responsibilities are with teacher preparation.
   ___More that 50% of my responsibilities are administrative.
   ___I currently teach one or more undergraduate course(s) a year.

2. I teach or have taught college-level courses in:
   ___science
   ___languages
   ___English, writing, reading
   ___social sciences
   ___teaching methods
   ___learning theory
   ___environmental education
   ___other

Now, please tell us about your institution's program for preparing graduates to become classroom teachers. Use approximations if you do not know exact numbers.

3. What are the numbers of students and faculty involved with undergraduate teacher preparation?
   * Our undergraduate enrollment of education majors is about _____
   * The number of full-time faculty whose primary responsibility is preparing students to become K-12 teachers is ________
   * How many of these faculty have a degree in:
     Environmental Studies
     Global or International Studies
     Other Interdisciplinary Degrees
4. Is a course in moral development or general ethical theory required of preservice teachers? 
   ____Yes  ____No

5. In covering issues such as technology, cultural interactions, or human population growth, how are ethical dimensions infused?
   ____Strong emphasis
   ____Included but not stressed
   ____Not included

6. Following is a list of generic titles for courses that may be available on your campus and may play a significant role in the education of your preservice teachers. Please check the appropriate columns providing your best estimate as it applies to all of your education majors.

<table>
<thead>
<tr>
<th>Course</th>
<th>Required of all edu. majors</th>
<th>Elected by 50%+ of edu. majors</th>
<th>Elected Less than 50% edu. majors</th>
<th>Not Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustainable Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Ethics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor Education</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multicultural Perspectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science/Technology/Society</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Rights Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Perspectives</td>
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<td></td>
</tr>
<tr>
<td>other</td>
<td></td>
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</tr>
</tbody>
</table>
Please read the following description of sustainable development which provides the basis for answering the remaining questions.

Sustainable development is interdisciplinary in nature as it covers social/political, ecological, technological, and ethical content. Although it is ethical in its orientation, sustainable development is extremely political as it involves power relationships in its application.

Sustainable development considers short-term economic advantage against long-term benefits. Preservation of resources and biodiversity is weighed against increased production and consumption. New technology is judged for its impact on the environment as well as its economic benefits. Sustainable development concerns the effort to find new ways to protect animal and plant species while still allowing for an appropriate level of economic growth. It requires us to look for ways of managing our economies that are safe, fair, and sustainable.

For purposes of this survey, the following definition applies:

Sustainable Development is change which seeks to meet the present needs without compromising the ability of future generations to meet their needs. It involves social choice at four levels of equity relationships: among generations, between humans and other species, among nations, and within nations.

Note that a great deal of sustainable development thinking hinges on equity issues: among peoples, generations, nations, and species. Equity includes both a sense of fairness or justice and concern for relationships founded upon care, responsibility and nurturing.

Now, please share your opinions:

7. I personally concur with the tenets of sustainable development as expressed above and think this is an important issue in today's world.

   ___Strongly Agree  ___Somewhat Agree  ___No Opinion  ___Somewhat Disagree  ___Strongly Disagree

8. Sustainable development, as defined above should be a part of the educational background of all who enter the teaching profession.

   ___Strongly Agree  ___Somewhat Agree  ___No Opinion  ___Somewhat Disagree  ___Strongly Disagree
9. Information concerning the natural resources and populations of nations should be taught to preservice teachers.

Strongly  Somewhat  No  Somewhat  Strongly
Agree  Agree  Opinion  Disagree  Disagree

10. Advocacy for equity concerning sustainable development by K-12 teachers is inappropriate because it compromises individual rights.

Strongly  Somewhat  No  Somewhat  Strongly
Agree  Agree  Opinion  Disagree  Disagree

And finally, please explain how sustainable development is taught to your preservice teachers (i.e., K-12, all majors).

11. Do you have a course(s) which integrate(s) issues of sustainable development and its pedagogy? (I.e., The "what" and the "how to teach" sustainable development content areas)

_____Yes, we have a course(s) dealing with sustainable development content and pedagogy and it is taken by approximately ____% of our preservice teachers.

_____We have no such course(s).

12. Does your curriculum provide instruction for K-12 preservice teachers in equity issues:

Across Generations?
_____Strong emphasis - a major component
_____Included - not stressed
_____Not included

Between Humans and Other Species?
_____Strong emphasis - a major component
_____Included - not stressed
_____Not included

Among Nations?
_____Strong emphasis - a major component
_____Included - not stressed
_____Not included

Within Nations?
_____Strong emphasis - a major component
_____Included - not stressed
_____Not included
13. Thus far we have asked you to generalize for all preservice teachers. Now we need to determine the relative importance given to four areas of sustainable development instruction for Elementary majors. Please report your institution's coverage of sustainable development content.

Please use the following 1,2,3, DK scale to rank the emphasis of each sustainable development content area.

1 = Strongly emphasized for these majors  
2 = Emphasized, but not a major component  
3 = Little if any inclusion in their preparation  
DK = Don't know with an degree of assurance

<table>
<thead>
<tr>
<th>Sustainable Development Content Area</th>
<th>Elem. Education Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Political</td>
<td>_____</td>
</tr>
<tr>
<td>Ecological</td>
<td>_____</td>
</tr>
<tr>
<td>Technological</td>
<td>_____</td>
</tr>
<tr>
<td>Ethical/Equity</td>
<td>_____</td>
</tr>
</tbody>
</table>

14. Now, please use the same 1,2,3,DK scale to relate the curricular content emphasis for secondary education majors in your science and social studies curriculums.

<table>
<thead>
<tr>
<th>Sustainable Development Content Area</th>
<th>Secondary Ed. Science Majors</th>
<th>Secondary Ed. Social Studies Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social/Political</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>Ecological</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>Technological</td>
<td>_____</td>
<td>_____</td>
</tr>
<tr>
<td>Ethical/Equity</td>
<td>_____</td>
<td>_____</td>
</tr>
</tbody>
</table>
15. All in all, how well prepared do you believe that the typical preservice teacher graduating from your institution is to instruct in the areas of sustainable development appropriate to his/her major, be it elementary, secondary science or secondary social studies?

<table>
<thead>
<tr>
<th></th>
<th>Highly Qualified</th>
<th>Moderately Qualified</th>
<th>Not Qualified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elem. Ed. Majors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sec. Ed. SCIENCE Majors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sec. Ed. SOCIAL STUDIES Majors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If you have any comments you believe would be helpful, please share them below.
Thank You!

Please return to: William Williams
SUNY College of Environmental Science and Forestry
Syracuse, N.Y. 13210

Comments:

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
Appendix Three
Philosophical Basis For A Sustainable Society: 
An Obligation To Life

The significance of the problems facing humans at all levels of societal organization creates the need to address the general philosophical orientation of our society, including our conception of justice. Sustainable development calls into question the values, norms, and principles which form the basis of our present societal organization. In addition, the changes required in the name of sustainability also require questioning and explanation. Our present system of distributional justice emphasizes neoclassical economic theories and meritocratic norms, but will not solve the pathologies of our society. These pathologies devastate both our rural and urban landscapes, and the solidarity of our society. We require more than just minor tinkering aimed at increasing the efficiency of our present socio/economic system to solve these problems. In this section the philosophical basis for change founded upon sustainable development are described.

As Young (1990) suggests, present efforts at development require the expansion of monopoly capital around the globe and the adoption of distributive policies which appease oppositional leaders and diffuse social turbulence. Young goes on to state that inequality and environmental degradation go hand in hand. The conception of sustainable development as outlined by this study requires a break from the traditional neoclassical economic model. A sustainable society involves a more egalitarian
distribution of benefits and burdens with emphasis upon biospheric maintenance over generations. Without a firm philosophical basis, the concept of a sustainable society will lack direction, however. Similarly, the focus required of education that would match the needs of a sustainable society would be lacking.

In this section of the dissertation ethical norms, values, rules and principles which would provide the guidelines for how we ought to live in a sustainable fashion are described. In the first chapter (Appendix 3) of this philosophical section I described the assumptions implied by a sustainable society and illustrate how these assumptions vary from the foundations of present U.S. society. The communitarian aspects of a sustainable society are stressed and the primacy of our obligations to life are described. The relationships of quality, justice, and time as related to sustainability is also described. An epistemology appropriate for ecologically oriented development and an integrated way of knowing is described along with weaknesses of our present system of economic accounting.

The second chapter of this philosophical section (Appendix four) describes the norms and values required for life in a sustainable society. In this chapter I provided a definition of norms and values and describe the norms currently emphasized by U.S. institutions. This chapter closes with a description of the norms and values which are consistent with sustainable development.
The third chapter of this philosophical section (Appendix five) describes the rules and principles of an obligation to life ethical theory. This chapter provides a formalized philosophical basis of education for sustainable development. I took a moderate deontological position in which our obligations to life are stressed, but where the consequential consideration of our actions through the satisfaction of essential needs is also included.

Appendix six provides a response to challenges regarding education for sustainable development. This chapter includes comments on academic critiques of a sustainable society and its philosophical foundations. Included are comments upon the following areas concerning the concept of education for a sustainable society:

1. Sustainable development’s definitional problem
2. Response to liberal educational philosophy
3. Conservative educational philosophy and sustainable development
4. Sustainable development as an extension of Western political ideology
5. Sustainable development as misanthrophy
6. Monistic ethical analysis

Introduction To Our Obligations To Life

Some authors concerned with environmental ethics suggest that no new ethical forms of justification are needed to handle environmental problems (Attfield, 1983; Passmore, 1974). These authors suggest that what is required of us is a more humanistic attitude, or more emphasis upon stewardship. Hargrove (1989) has stated that environmental ethics will probably fade from existence when the problems associated with the environment have
passed and the issues raised by authors concerned with environmental ethics have been subsumed by existing areas of philosophy. In a later writing Hargrove (1992) suggests that until we reach a firmer grasp of how to include the environment and other species into traditional ethical consideration, we probably need all of the different notions concerning environmental ethics. As Hargrove states,

"...it is not necessary that there be just one reason, one justification, to ground these intuitions, beliefs, and practices. There could be several, none of which is sufficient on its own. Each justification could be useful in limited or special contexts. It is even possible for this set of justifications to change dramatically over time." (1992, p. 177)

In Hargrove's analysis an inclusive orientation would allow a more general focus creating a better understanding of how we ought to handle environmental and animal rights issues.

While I agree with Hargrove that environmental ethics will disappear and is only a phase in our conception of morality. I disagree with his inference that environmental ethics will be subsumed under the wing of a presently accepted conception of morality. This study suggests a holistic/pluralistic ethical position meant to guide our actions in a sustainable society. It is intended as more than an environmental ethic. It is a holistic conception of the considerations and layers of meaning we should consider when determining how we ought to live. This type of ethical position is not presently in vogue in the philosophical literature.
It is my position that traditional monistic forms of ethical justification are incomplete and inappropriate for the holistic thinking and behavior required of a sustainable society. The concept of stewardship stressed by Attfield (1983) and others (Barbour, 1980; D.J. Hall, 1985) addresses the right issues, but fails to go far enough because of its atomistic and anthropocentric approach. Similarly, the economic theories of justice are not totally misguided either. However, these theories represent incomplete expressions of the management of ecological systems, fail to fully address the needs of humans, and make erroneous and incomplete assumptions concerning human nature.

A sustainable society must go beyond the anthropocentric and individualistic positions of modern neoclassical economic justification. A sustainable society is only possible if we adopt an ecocentric/holistic position in which the atomistic principles which guide our present actions are subsumed under an inclusive blanket more consistent with our social nature. In other words, we must include the human community as an equal factor along with our individuality in our consideration of ethical norms. In turn, the human community must be subsumed into the web of the systemic relationships and meaning in which we live. The layers of meaning and relationship represented by this type of ethical position require careful consideration of the impact of individual humans upon both the human community and the ecosystemic community.
The pluralism I describe involves a modified deontological position in which both ends and means are considered. This position combines the obligations of both individual and community with the satisfaction of needs. This type of pluralism seeks to balance the absolutes of our obligations with a pragmatic fulfillment of our needs. Obligations, virtues, and outcomes are combined into a normative system which will help guide our actions.

The individual and community are considered equally when determining our obligations and how we ought to live. The community plays a primary role in this conception of morality, however, because of the community’s influence upon the individual through the transfer of norms and values. The reception of communication by the individual makes each of us dependent upon the standards of interaction adopted by others (Habermas, 1992). Our individual rationality which results from our consciousness follows our socialization. In similar fashion, the influence of the social aspects of being human is preceded by life’s relationships. The mental process of reasoning, so sanctified by ethicists, is contingent upon both our ecological and social relationships.

Humans are a part of a more encompassing conception of community in which we are members of the biosphere or, as Leopold (1966) described, the land community. Because of our inclusion in the biosphere and the tremendous impact of our decisions upon that biosphere, we must recognize our obligations to all life and
the abiotic systems which interface with that life. As Rolston (1990) states,

"The end of development, the end of ethics, is more life. A development and conservation ethic must be true to life. In that sense, true development must correspond to the highest human activity that most deeply values life." (p. 63)

This pluralistic position also includes the concept of systemic and species value while combining intrinsic and instrumental values. This inclusion and combination forms the basis of a communal system of value that is prior to the individual, and more basic than either instrumental or intrinsic value (Etzioni, 1988; Pirsig, 1974). Community or systemic value suggests the primacy of relationship and the necessity of taking a more inclusive and holistic approach to morality.

Economic schemes of justice address the existential human need of having. The assumption is that the more resources which flow through a country’s or an individual’s economy, the more well off that country or individual will become. Other human needs such as being, doing, and interacting are only given secondary consideration. Economic theories of justice are limited because of their incomplete conception of human needs, their failure to consider the needs of the biospheric community, and their emphasis upon empiricism regarding quality.

Figure 2 represents an arch metaphor for conceiving the pluralistic nature of the ethical justification of sustainable development adapted from Etzioni (1991). The two pillars which form the arch represent the individual and community. The arch stands because of the support received from both pillars and will
be most stable if both pillars are strong. In other words, both the individual and the human community are considered morally equal. The foundation upon which the arch rests is the ecological community. Without a solid foundation the arch will be unstable and will crumble when stressed. It is also part of this metaphor that if the human condition crumbles the ecological community will be impacted by the debris, but will remain. This pluralistic depiction of the ethical basis of our existence consists of a trinity of considerations which must be considered equally if we are to live moral lives.

**HOLISTIC/PLURALISTIC CONCEPTION OF ETHICS**

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<th>INDIVIDUAL</th>
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**ECOLOGICAL COMMUNITY**

*Figure 2. An arch conception of our moral considerations.*

The holistic consideration of human and biospheric standing suggests the reason why parts of our present conception of ethics are applicable to sustainable development. The layers of our ethical decisions include the individual in this model.
Therefore, the ethical consideration focused upon individual, but adjusted for application to individual members of other species or the environment are not totally inconsistent with this holistic model. The present conceptions of environmental ethics and animal rights are subsumed under a pluralistic/holistic umbrella of moral consideration.

A model of teacher preparation in the area of sustainable development content requires an explanation of the philosophical basis for a sustainable society. This chapter provides an enumeration of the philosophical assumptions and foundations I believe are required of a sustainable society. These assumptions and foundations include: the primacy of obligations, quality and relationships, epistemological foundations, economic assumptions, justice as a cornerstone of a sustainable society, and conceptions of time and the sustainable society.

**The Primacy Of Obligations**

The foremost assumption of sustainable development as described by this study relates to the primacy of life and our obligations regarding the maintenance of life. The review of literature illustrates the varied approaches to sustainable development and the mix of various theories of justice regarding sustainable development. The sustainable development literature involves relationships (between this and future generations, between humans and other species, among nations, and among the people found within nations). Most importantly, the literature demonstrates the need to understand the concept of quality as it
pertains to those relationships. The primacy of life is not an atomistic concept as Callicott (1992b) has suggested in his critique of Schweitzer. Our obligation to life is an inclusive concept involving individuals, communities, and systems which make up life. The primacy of life demands that we understand quality and how life, relationships, and quality are intertwined.

The study of ethics is generally defined as an inquiry into how we ought to live our lives. Ethicists concentrate on the word "ought" trying to avoid the naturalistic fallacy of determining what we ought to do from what is. It is important, however, to define how we should live within the contexts of life. Therefore, our conceptions of reality; human nature; and the needs of humans, other species, and the ecological systems which sustain life are critical to the formulation of how we ought to live. In addition to these factors which influence our ethical formulations, we must consider our ultimate biological and spiritual purpose (Skolimowski, 1981).

Our societal organization must become more responsive to the satisfaction of human needs at all existential and axiological layers (Max-Neef, et al, 1989; Etzioni, 1991) while also being responsive to the ecosystemic needs upon which our lives depend. Figure 3 represents a conception of human needs which allows for a more holistic orientation than the Western emphasis upon materialism. The human need of having is balanced in this conception with being, doing, and interacting.
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Figure 3. Existential and axiological categories of human needs (Max Neef, et al, 1989).

Because of the interaction of all life, the needs of humans and other species cannot be separated. Other species have needs which human choice can greatly effect. If we are to be just, we must balance the needs of humans with the needs of the other species inhabiting the earth. If we accept the interrelationships among all forms of life, the distinction between instrumental and intrinsic value becomes unimportant. Life is prior to my consideration of how I ought to live. It is life with all of its interconnections that must be the primary consideration when determining how we ought to live.

It is impossible for a human to fully understand the needs of another animal. In fact, it is presumptuous to think we can understand the perceptions of members of other species. But, human choices impact the rest of the biosphere dramatically with no ecosystem on earth avoiding impact from humams (GTC, 1990a). Because of these impacts, we must try to recognize and become sensitive to the needs of the members of other species, those
species as a group, and the ecosystems they inhabit. There are some obvious anthropomorphic assumptions and obvious differences between humans and members of other species, but we must recognize that other forms of life have needs. Life is a relationship which is prior to and greater than the sum of the individuals involved. We have been guilty of the atomistic assumption that somehow each individual can be considered separately from the community in which that individual is embedded.

The intrinsic value of all individuals is inextricably tied to a web of instrumental relationships which connect to form a community of value. Each individual should receive moral consideration, but equal consideration must also be afforded the community. This web makes the distinction between intrinsic and instrumental value a mute point. Figure 4 illustrates projected existential and axiological needs of non-humans. This list is meant to include individuals of other species, species as a group, and the ecosystems in which each individual lives. It is strange for us to consider other life forms in this manner. We have only begun to philosophically consider the importance of the community of life which surrounds us (Wilson, 1984). It is through the traditions of our culture and religion that the connections with all life and life processes are denied. These traditions must change if we are to achieve sustainable development.
I believe that our conception of morality/justice, sense of reality, and understanding of human nature require a new focus if we are to live moral lives. Without a firm and complete

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Figure 4. Projected existential and axiological needs of members of other species.

understanding of our complex obligations, and an attempt to live by the ideals which respond to those obligations, we will not be responsive to the consequences of our actions. The choices we must make concerning how we ought to live should result from a melding of our obligations, our ideals, and the consequences brought by our actions. Essential to the change in our focus is the obvious, but often neglected, assumption that without life the consideration of ethics has no significance. As Brennan suggests,

"Lives that are worth living will all be lived in nature and the worth that we accord to our natural context cannot ultimately be separated from the worth of such lives."

(1988, p 221)

In the United States ethicists have tended to focus upon the rights of the individual in determining how one ought to act. The egoistic and utilitarian conceptions of ethics dominate our industrialized culture. I am not critical of these individual and consequential ethical orientations other than to suggest that

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they represent an incomplete conception of how we ought to live.

The debate over abortion provides an example of the incomplete nature of our present conceptions of justice. Much energy is spent in the United States on positions concerning the "right to life." Most people understand the issues involved with this debate concerning the rights of mother, fetus, or parents. However, this example points out the problems of a society which approaches issues of justice with a focus upon rights. The conception of a right involves the obligation of others to recognize and respect that right. A right is defined as the claim to a flow of benefits which is respected and defended by a collective group of people (Bromley, 1991). The important part of this statement is that the obligation of others is required before rights can exist. In other words, without others agreeing to their duties regarding an individual's claim, there are no rights.

The obligation to life that I describe is not an endorsement of the commonly held "right to life" position. Equally important as the consideration of the individual mother or fetus is the obligation due to the community. What impact will another child bring to the community within which the child is embedded? What impact will the child bring to a region, nation, or the global community? Obligation to life requires us to deal more completely with an issue such as abortion. Because community and individuals are considered equally in an obligation to life theory, the issue of abortion involves hard decisions which must
consider all the lives that are involved. The oversimplification and incomplete assumptions of the economic efficiency and individually focused egoistic models of justice which presently dominates our thinking are not adequate to solve the moral dilemma illustrated by the issue of abortion.

An overemphasis upon rights creates a strongly individualistic and fragmented approach to justice. Those who express strong sentiments concerning abortion issues rarely frame their beliefs or values in terms of the obligations owed to future generations, other species, people of other countries, or people within this country. Obligations to the communities within which the mother and fetus are embedded are not the primary concern. The focus rarely moves from the atomistic rights of the individual mother and fetus. These positions follow a male model for justice which doesn’t allow for a full review of all the factors which require consideration. Gilligan (1982), Noddings (1984), and Faludi (1991) in their own way describe an incomplete male dominated conception of morality and suggest an alternative model directed toward relationships, obligation, and care. When we concentrate on obligations, we find ourselves actively pursuing quality in relationships. When the focus is upon an individual’s rights, we typically find ourselves trying to avoid interfering with others (Etzioni, 1988).

Because U.S. citizens concentrate on individual rights and liberties, they seem to lose sight of the importance of their
obligations to community. The balance between obligation and rights are lost. This philosophical loss of balance between obligation and rights finds a sociological equivalent in the loss of balance between community and the individual. Societies have historically punished those who didn't recognize the rights and privilege of others by imprisonment, torture, and death (Faucault, 1979).

The carceral systems found in modern western societies demonstrate not only the balance between rights and obligations, but also the importance of power relationship to that balance. The concept of a sustainable society forces us to investigate the obligations that are required of relationships between ours and future generations, between ours and other species, among nations, and among the people found within each nation. The concept also forces us to recognize and consider the power relationships which are an inseparable part of the rights/obligations.

Sustainable development requires that we consider both the implicit and explicit formulations of power in our society and requires the actors in this power structure to follow a more complete and holistic conception of morality. We must understand and minimize the disparities in power which exhibit themselves in access to land, resources, and wealth; military coercion; and access to knowledge. Although power relationships and inequities in the dispersion of power are part of human social organization, the relationships within which power exerts
its presence must be ethical in orientation.

We are indoctrinated into the belief that the individual's right to life, liberty, and the pursuit of happiness is natural. Our indoctrination has missed the obligations from which our rights extend and the naturalness and primacy of our obligations to all life (Wilson, 1984). The consideration of our obligations must be based upon an integrated sense of reality before an ethical choice of action can be made. The primacy of life forces referred to earlier goes well beyond the concept of a human being's rights and obligations. I believe that humans have an obligation to all life. This obligation extends from the biotic community and must be accorded by all human beings to the biotic community. The blend of intrinsic and instrumental value requires us to meet our obligations to other individuals, species, and ecosystems which sustain us. The use of the word community refers to ecosystems including both its biotic members and the nonbiotic forces which sustain life. The conception of community as human society is important, yet incomplete for the ethical underpinnings of a sustainable society. We must consider both human and the ecological communities along with individuals of all species if we are to have a sustainable society.

Ethicists have not historically accepted existence as grounds for ethical standing (Callicott, 1992b). Kant (1983) believed that rationality was required for standing, Singer (1990) suggests sentience as the defining characteristic of standing, and Regan (1983) describes "a subject of a life" as the
criteria required for standing. "Compassion for life" as described by Albert Schwietzer has been critiqued for its mystical and nonrational orientation (Callicott, 1992b). Yet, Schwietzer's conception of morality takes us in the right direction. Schwietzer's reverence for individual life must be expanded to include the reverence for the community of life within which individuals are embedded.

The metaphysical perspective associated with our present anthropocentric and atomistic conceptions of morality would demand that a pluralistic formulation of norms, values, and rules/principles be criticized. As a result, Schweitzer's conception of morality is not widely accepted, considered, or expanded. His writing is considered well meant and an expression of a compassionate person, but too mystical for serious consideration (Callicott, 1992b).

Schweitzer describes the emotional and psychic attachments to life. As this author states,

"A man is really ethical only when he obeys the constraint laid on him to help all life which he is able to succour, and when he goes out of his way to avoid injuring anything living. He does not ask how far this or that life deserves sympathy as valuable in itself, nor how far it is capable of feeling. To him life as such is sacred." (1989, p. 33)

Schweitzer's emphasis on life's sanctity and relationship is not consistent with the rationally based formulations of value hierarchies. The rationality which dominates our present ethical deliberation must be extended with the emphasis turned toward relationship. Extending our deliberations by integrating biological, mythical, and emotional ways of knowing with the
rationality we now stress will allow us a more complete understanding of our obligations to life. I will include a brief description of the changes in our belief systems which must accompany the development of sustainable societies. This description begins with an examination of quality.

**Quality**

The quality of life's relationships creates the foundation of the fundamental questions asked of us by sustainable development. The choices made by humans greatly impact the quality of life found on earth and the future relationships of life forms on earth (Dryzek, 1987). Human beings have had a dramatic impact upon the quality of life's relationships in a very short period of time (Catton 1982). People in industrialized nations have only begun to consider the impact of their behaviors upon the ecosystems which sustain them. Life is taken for granted.

We value individuals of other species because of the aesthetic value of those individuals (Russow, 1986). What is missing is the understanding that quality (relation) is prior to subject or object. Quality is prior to the mind/matter dualism which we are accustomed to considering (Pirsig, 1974). There are no simple answers when dealing with ecological issues and sustainablity (Dryzek, 1987). Relationship and the concept of quality is prior to, and not subjective to the representation of mind. Life becomes the focus as the event represented by relationship initiatives or supercedes the traditional conceptions.
of mind/matter duality. This conception of reality allows quality to encompass mind and matter, and fosters a more complete and encompassing conception of time and space. As a result, the focus upon relationships places rationality and human beings in a much less pronounced metaphysical position.

Humans are no longer the creators of reality, but interpreters of the relationships we understand as life. The interpretation of the relationship between subject and object is possible only through the event of life. Both subject and object are subordinate to the quality which created them (Pirsig, 1974). The concept of mind so important to modern versions of reality becomes embedded in existence. We must use all of our possible ways of knowing to become sensitized to feel, know, and become that existence (Sheppard, 1982). We must value and protect other species because they share common bonds of quality with us (Wilson, 1984). The recognition that quality precedes us and will follow our existence places the concept of sustainable society in its proper context and clears the way for enhancing the social skills required for sustainable development.

**Epistemology For Sustainability**

Our way of interpreting existence has been characterized by a scientific view of reality with a focus upon technological and material progress. This scientific orientation seeks open inquiry in a structured and publicly agreed upon fashion (Richards, 1987). This way of knowing was a change from the previously accepted religiously oriented basis of knowledge and
inquiry (Merchant, 1980). The scientific orientation of inquiry and knowledge created great changes in the way Westerners viewed the environment. This scientifically oriented cosmology affects our assumption concerning our ultimate purpose, our sense of ethics, the environment we inhabit, and who we are (Sheppard, 1982).

The major characteristics of the scientific revolution were its reductive and empirical nature allowing for objective, impersonal criteria for knowing (Harman, 1988). Knowledge became public and open to question by detached scientific disclaimer. The reductive and postivistic nature of science led us to view our environment as mechanical and controlled by the laws of behavior (Merchant, 1980). Science allowed humans the arrogance to believe predictions and knowledge concerning the mysteries of life (Ehrenfeld, 1981). Essentially, humans became detached from the earth, with nature viewed as dead by means of mechanical analysis (Merchant, 1980). The present gene research represents an extreme example of our reductive way of knowing. This research removes our attachment with life and reduces the quality of existence to minute sections of DNA. Simply, relationships become matters of genetics (Hubbard and Wald, 1993).

Science became ingrained in our conception of progress and our industrial and military orientation (Rifkin and Howard, 1980). Our rationality became tied to our technology and the arrogant belief in the capabilities of science to solve our problems (Ehrenfeld, 1981; Robottom, 1991). Without the
technological progress science brings, our society would lose its efficiency and its competitive edge over other societies. We began to view our social and political problems as technological, and as a result failed to face the ethical decisions concerning equity issues which confront us (Robottom, 1991).

Ethicists are often troubled by the suggestion that other ways of knowing beyond rationality be included in the conception of right and wrong. Even more troubling is the scepticism concerning our invention of morality which threatens the very existence of morality (Nietzsche, 1988). We are torn between the empiricism of logic with reductionist modes of explanation, and the value and faith required of teleological and spiritual explanations. The conception of environmental maintenance and sustainable development lies somewhere between taste and truth, or value and fact. The concept of a sustainable society suggests the need to connect our scientific knowledge with our faith to increase our knowledge base and expand the assumptions used to determine our actions.

The dominance of rationality in our present decision making process creates problems because this frame of reference is so far removed from actual life processes (Etzioni, 1988). Our emphasis upon rationality demonstrates our arrogance in believing that we somehow stand apart from ourselves and our perceptions to know the truth. We believe that mind, through the process of rationality, is beyond the content of experience and relationship (Kant, 1983). It is not that the search for the truth is
irrelevant, quite to the contrary. It is essential that we seek
knowledge and truth, but we must recognize that this search for
truth involves a solid measure of faith. By the time we get
around to making rational decisions, we must have faith in our
perceptions as the reliance on rational decision making is a
reflection upon past experience (Pirsig, 1974). Without faith in
our perceptions, faith that knowledge will help us learn more
about the truth, and faith in our ultimate purpose, we will
become morally lost. In effect, ethics and justice provide a
bridge between science and faith. Even though rationality is an
important part of ethical decision making, other ways of knowing
are equally as important.

We require an integrated knowledge base from which to make
decisions concerning sustainable development. Because we have
focused almost entirely upon rational and empirical forms of
knowing, we have excluded the norms and values that are inherent
to the meaning of life and human nature (Etzioni, 1988). We have
failed to connect objective and subjective formulations of
knowledge. We have failed to recognize biological influences on
our consciousness. Most importantly, we have failed to recognize
that quality is prior and essential to both subject and object
(Pirsig, 1974).

In many ways our reliance upon rationality as expressed
through the scientific method illustrates our failure to
recognize the mythical nature of science itself (Harman, 1988;
Merchant, 1980). Often science and the technology which extends
from that science leads us to deny our biological identities. We produce results from science and the application of technology which allows us a "measure" of control over our existence. This control often provides the illusion that we are separate from the bioshpere, however (Schumacher, 1973).

We don't make decisions on only rational criteria. Our decisions are strongly based upon our other ways of knowing (Etzioni, 1988). The low context component of culture imparts emotion and imagination into our ways of understanding, our behaviors, and our rationalizations concerning how we ought to act (E. Hall, 1976).

In addition to the emotional and mythical component of behavior which extends from our cultural heritage, the biological component of our behavior can't be denied (Wilson, 1975). We have brains which allow us choices in the technologies which impact our lives. How much of this activity taking place within our brains is a product of the hormones and chemical balances of the body which house our brains? There is no place where we can go to separate our minds from the biological entity which houses our consciousness. In similar fashion, there is no separation of a biological entity from the ecological context within which it is housed.

To deny the influences of our biological nature or ecological context is foolishness. However, in the name of disciplinary protection, sociologists deny the importance of biology in our behaviors. Sociologists fear that recognizing a
biological component in our ways of knowing would lead to the inclusion of sociology under the wing of the biological sciences (Richards, 1987). Similarly, biological explanations of behavior are feared as endorsements of sexism or racism. These concerns demonstrate the complexity of life and our inability to fully understand relationships. Rather than applying exclusionary and fragmented studies of human behavior, we require an integrated conception of human nature and community relationship.

Societal norms, values, emotions, biological instincts and ecological balances impact our behaviors and decision making. These factors along with rationality must be combined as essential components of human nature. All of these factors are the difference which makes a difference. All components of our understanding must be included in determining how we ought to live. Our conception of human nature and how we ought to live will be incomplete without a balance between individual and communal aspects of human nature. Our conception of human nature is incomplete without balance between the biological, social, and spiritual aspects of existence. We are not individuals with an insatiable need to maximize pleasure. We are social biological beings whose satisfaction of needs is impacted by norms and values (Durning, 1991; Etzioni, 1988). Societal norms become internalized into strong statements of personal value.

Figure 5 illustrates the integration of biological, mythical, emotional, and rational ways of viewing our existence.
INTEGRATED KNOWLEDGE
FOR A SUSTAINABLE SOCIETY

WAYS OF KNOWING

BIOLOGICAL
MYTHICAL
EMOTIONAL
RATIONAL

INTEGRATED SENSE OF
REALITY

BALANCED SENSE OF HUMAN
NATURE AND HOW HUMANS
FIT INTO ECOSYSTEMS

AN INTEGRATED SENSE OF TIME
AND SPACE

ECOLOGY AND ECONOMICS COMBINED
(HOUSE AND MANAGEMENT OF THE
HOUSE INSEPARABLE)

INTEGRATION OF LIFE AND DEATH

SUSTAINABLE SOCIETY

BALANCED SENSE OF HUMAN AND
BIOSPHERIC NEEDS. BEING, DOING,
AND INTERACTING EMPHACIZED
EQUALLY WITH HAVING

POWER RELATIONS MADE
RESPONSIVE TO INDIVIDUAL,
COMMUNITY, AND ECOSYSTEM
NEEDS

PLURALISTIC/HOLISTIC
CONCEPTION OF HOW WE
OUGHT TO ACT

POWER RELATIONS OPENLY
CONSIDERED, OVERT AND
COVERT COERSION REDUCED,
CONSENSUS STRESSED

AN INTEGRATION OF MEANS AND
ENDS (MORAL OBLIGATIONS AND
NEED FULLFILLMENT)

PRIMACY OF OUR OBLIGATION
TO LIFE

BALANCE BETWEEN INDIVIDUAL AND
COMMUNAL CONCEPTIONS OF ETHICS

Figure 5. An integrated knowledge base as the foundation for a sustainable society
This integration forms the basis for a pluralistic ethical conception of a sustainable society and a balanced conception of human nature. The sustainable society extends from these philosophical foundations by means of power made responsive to the needs of individuals, communities, and ecosystems.

Our present rational perspective of environmental problems cannot serve to show us new directions for our lives and societal organization since it is exactly this fragmented type of thinking that has brought us our problems. Kealy (1990) points out the need for an integrated way of knowing which allows for an omnidirectional consciousness. In this view of consciousness, none of the structures involved with consciousness is allowed to suppress another. The result is an integrated consciousness or understanding of human life that includes: the animal or biological consciousness, the emotional and instinctive unity of all things, the past oriented mythic or imaginatively way of knowing, and the mental or rational way of understanding consciousness. An equal participation of these different structures of consciousness allows a more complete conception of our understanding of reality, along with a more inclusive conception of time and space relationships. In similar fashion, Toffler (1990) states,

"Much knowledge... is unspoken, consisting of assumptions piled atop assumptions, of fragmentary models, of unnoticed analogies, and it includes not simply logical and seemingly unemotional information data, but values, the products of passion and emotion, not to mention imagination and intuition." (p. 82)
The domination of communication, geo-politics, and economic interests by the rationality of the West exacerbates the problem of objectivity in the "development" process (Blake, 1993; Brady, 1993). We lack understanding of the low context elements of our own culture, and an adequate understanding of time (E. Hall, 1976). We also lack the understanding of these elements in other cultures (E. Hall, 1973). In addition, our failure to understand the relationship between cultural and biophysical elements limits any study of development. Understanding the limits of our knowledge and objectivity concerning these elements is essential to eventual delimitation. As Pletsch suggests,

"A more differentiated conceptualization of the world's social phenomena based upon a general awareness of the paradoxes of observation... may be a precondition not only of any quantum leap in the quality of social scientific scholarship, but of any improvement in relations among the societies of the globe." (1981, p. 590)

The cosmology that will help bring about a sustainable society would not turn its back on the positivist orientation of science, nor will it turn back to the scholasticism that characterized the pre-Copernican revolution. The new cosmology must be a fusion of reductive and holistic ways of knowing in which humans are not held apart from nature, but as a part of the living whole which sustains us. As Mumford (1970) states,

"The present analysis of technics and human development rests on belief in the imperative need for reconciling and fusing together the subjective and the objective aspects of human experience, by a methodology that will ultimately embrace both. This can come about, not by dismissing either religion or science, but first by detaching them from the obsolete ideological matrix that has distorted their respective developments and limited their field of interaction." (p. 420)
The science which has given us so much material prosperity must include emotion, subjectivity, values, and ethics. Science and technology must be held up to question by all members of society.

The new cosmology should be one of union recognizing the inseparability of body and mind, society and the individual, humankind and nature, and science and morality. This holistic way of inquiry and knowing will find its basis in principles of ecological harmony. I don't refer to the reductive ecology which evolved in the past several decades to gain scientific acceptability, but an ecology which involves true macroscopic analysis (E. Odum, 1975). Key to this analysis is the prominence of cooperative relationships sustaining life. The competitiveness which characterizes reductive science, nation/state relations, and economic domination will be reduced with emphasis placed upon the more feminine values of cooperation, harmony, and obligation in relationships (Noddings, 1984).

Through this ecocentric way of knowing, harmony and equity will be the focal point among nations, humans, generations of humans, and between humans and other species. Domination, fatalism, the hierarchical structure of science, laissez faire capitalism, and meritocratic social relations will be replaced by empowerment, participatory government, participatory economy, meaningful production, meaningful work, appropriate technology, appropriate organizational scale, and fair access. Human beings will once again become united with nature (Shepard, 1982). The
machine will lose its present omnipotent standing being replaced by an obligation to the earth and all life.

**Economic Assumptions**

One of the tenets of modern neoclassical economic theory is that human beings are rational maximizers of their own well being. According to this economic version of psychological egoism, each individual acts within the market place in such a way to maximize the good consequences to themselves. Economists then twist this psychological theory into a philosophical theory of justice by suggesting that each individual ought to only consider the good consequences to themselves (Hunt, 1986). Utilitarianism extends from these individualistic principles becoming an ethical theory which tells us both how we ought to live and how best to divide the benefits and burdens of our existence. Utilitarianism helps supply the justification for our present neoclassical economic theories of justice. If each individual acts rationally in such a fashion to bring good consequences to themselves, the composite of those individuals’ well being will eventually work itself out to become the greatest ratio of good to evil for the greatest number (Wenz, 1988).

The atomistic and incomplete view of human nature expressed by utilitarianism in its most rigid form only considers the consequence of one’s actions. The basis of this model is the complete knowledge of all factors so that choices can be rationally discerned. It is obvious from many examples of binge buying, emotional advertising appeals, and selective information
processing preferences that a great deal more than rationality is involved with behaviors in the marketplace (Etzioni, 1991). Similarly, telepathy, biofeedback, and intuition illustrate that more than rationality is involved in our behavior (Harman, 1988). Cultural norms and values set the context within which rational economic decisions are made. As Etzioni states,

"Normative-affective factors shape to a significant extent decision making, to the extent it takes place, the information gathered, the ways it is processed, the inferences that are drawn, the options that are being considered, and those that are finally chosen. This is, to a significant extent, cognition, inference, and judgment are not logical-empirical endeavors but governed by normative-affective (noncognitive) factors, reflecting individual, psychodynamic, and collective processes. (1991, p. 93)

Within neoclassical economic theory there is an imbalance placed in favor of the individual member of society over the influence of the community within which that individual is a member (Bellah, et al, 1985). Neither an individual, nor an economic system is separable from the social system within which they function. Individuals are members of society and cannot be studied out of the context of that membership because of the primacy of communication (Habermas, 1992). In addition, societies are more than simply the sum of the individuals comprising that society (Etzioni, 1988). Communities have characteristics which make them more than the sum of their parts (Leopold, 1966). Individuals are products of their communities' values and norms, but also sources of creation and influence. We are capable of going beyond the norms and values imposed upon us by our communities to create and become novel (Copeland, 1988).
The neoclassical economic model of justice also implies that no power relationships are inherent in the marketplace (Etzioni, 1991). Complete freedom in the marketplace is thought the best way to achieve societal justice. In this scheme, freedom becomes defined by an individual’s ability to win the competition occurring in the marketplace (Madsen, 1993). Economists suggest that no person or group should have the ability to impact or coerce a free market (Friedman and Friedman, 1979). This view is totally inconsistent with the nature of social systems, either at a global level (Choate, 1990; Hamilton, 1990; Rifkin, 1991) or at the national level (Domhoff, 1983; Phillips, 1990; J.K. White, 1988). The combinations of varying degrees of economic power in conjunction with the application of political power suggests that there is no such thing as a free market (Barlett and Steele, 1992; Harrington, 1989).

Contrary to libertarian positions (Friedman and Friedman, 1979), exchanges which occur in the marketplace are always between people of unequal power (Etzioni, 1988). Human beings cannot avoid power as all social functions involve a web of power relationships (Burbules, 1986; Toffler, 1990). The creation of sustainable societies depends upon the realignment of these relationships. This change in power must seek to mix intelligent planning and politics with the application of resources (Gore, 1992). Changes in power relations must be based upon holistic ethical principles and not upon incomplete neo-classical economic assumptions, however.
As previously mentioned, neoclassical economists suggest that the market system will work and justice will be served if people are free to enter into the market and are allowed to make rational decisions concerning the application of their resources. This rational decision making process depends upon access to knowledge concerning the market, however. Unfortunately, the equitable distribution of knowledge in both U.S. society and around the world is more pronounced than the maldistribution of wealth, or military power (Toffler, 1990). For any economy based upon knowledge to be equitable, a balancing of knowledge must be accomplished. In addition, great imbalances in knowledge make our social systems unstable. The inequities in power relationships inherent to the control of knowledge must be reduced if we are to create stable sustainable societies (Blake, 1993; Mundy, 1993; Sy, 1993). However, undercontrol of knowledge or power can be as dangerous as overcontrol and centralization (Eckstein, 1989; Toffler, 1990). A sustainable society must find ways to balance the control of knowledge allowing for a mix of bottom up and top down decision-making (Etzioni, 1991).

Neoclassical economic theorists make the assumption that human beings’ wants are insatiable. While it is generally true that our needs require satisfaction, the fulfillment and extent of those needs is culturally set (Argyle, 1987; Max-Neef, et al, 1989; Wachtel, 1983). Beyond the fulfillment of basic physiological needs, the social context within which we find ourselves determines our needs and demonstrates the power of
community and the strongly social component of human nature (Etzioni, 1988; Max-Neef, et al, 1989). While neoclassical economic theory suggests that we need to have more and must increase our production because it fills human needs, it has been demonstrated that human happiness and satisfaction is not strongly related to having (Durning, 1991; Wachtel, 1983).

Neoclassical economic theorists provide an oversimplified view of human nature based upon incomplete assumptions. These theorists error in many areas (Wenz, 1988). First, their emphasis upon the individual over community is unrepresentative of human nature as a balance is required. We are both creative individuals with independent identities and members of communities. Individual choices do occur, but within the context set by the communities within which we are embedded (Copeland, 1988). Second, the overemphasis of rationality in economic decision making over normative and affective factors cannot be substantiated (Etzioni, 1991). Third, economic theorists error by their incomplete assessment of human needs with a primary focus upon having rather than a balance between having, doing, interacting, and being (Max-Neef, et al, 1989). Fourth, power relationships are excluded from the economic model as great inequities exist in knowledge, and wealth (Etzioni, 1991; Toffler, 1990). Military power also plays a critical role in economic process even though this influence is often neglected by economic theorists (Albelda, et al, 1988). Fifth, economic growth, as measured by GNP or other economic indicators, is an
ineffective measure of well being. This assumption of the importance of economic growth suggests that the quality of an individual's life and the general good found in a society can be quantified. This assumption is also incorrect as well-being can not be equated with the level of resource inputs over short periods of time (Daly and Cobb, 1989).

Before the scientific revolution, scholasticism suggested that God guided the world for the benefit of man (Harman, 1988). The scientific orientation of post-enlightenment thinking changed man's ultimate purpose to one of material accumulation with stages of growth implying the evolution of superior humans (Rostow, 1960). Progress became the key to our ultimate purpose with the emphasis upon having on earth (Fromm, 1976). Both our social and personal value became tied to the Protestant work ethic and determined by our place on the paid labor continuum (Harrington, 1986).

The economic principles of sustainable development are based upon a much more complete assessment of human nature than modern neoclassical economic theories. The economic goal of people in a sustainable society is one of meeting our obligations to life and the fulfillment of human needs while functioning as a part of a larger living earth (Lovelock, 1979). The purpose of our lives becomes one of "being" rather than "having" with the emphasis on balancing human spiritual, psychological, and physical needs with the realities of the environment which sustains us (Fromm, 1976). Economic progress and growth is replaced by an economy based on
harmony and ecological balance within our own being, among members of our species, and between our species and the earth. Our social and personal value become intertwined with our instincts, reason, and spirit. This change in the concept of progress might bring us to a reverence for life (Wilson, 1984).

**Justice**

Justice and equity must play a primary role in shaping a sustainable society. Societies apply principles of justice to mediate between individual rights and societal obligations. There are several conceptions of justice which point us in the right direction. Rawls (1971) stressed the importance of justice and the balance between individual rights and community solidarity. Rawls elaborated upon two primary components of justice: (1) each individual should have extensive liberties extending to the limits of compatibility with the same liberties for others, and (2) inequalities among individuals should be treated by a society in such a way that the greatest benefit would come to the least advantaged, and that all societal positions be filled through a process of fair equality of opportunity.

Power relations are critical to concept of justice as people find ways to balance the inequities between them. In effect justice is the method accepted by individuals to protect themselves from the subjugation of others (Reiman, 1990). In other words, justice involves the principles, values, and norms by which power relationships are established and solidarity may
be achieved. Justice goes beyond the individual to include community in the conception of how we ought to live. Both positive and negative conceptions of freedom are evoked by this interpretation of justice. As Reiman concludes,

"Justice is the set of principles regulating behavior that it would be reasonable for all human beings to accept to best protect themselves against the threat of subjugation each poses to the others." (1990, p. 4)

Justice may also be conceived as a dynamic balance between the concepts of liberty, equality, and solitarity (Copeland, 1988). The freedoms of the individual and the capacity of the individual for creativity demand a community which allows for the expression of that individuality. Solidarity involves creative individuals working freely together for commonly shared purposes. Equality is critical to both liberty and solidarity as a means of allowing individuality while creating a backdrop where creativity might be shared. Equality in the interchange of ideas and knowledge is critical to the solidarity of the community and ultimately the creativity of the individual.

Many conceptions of justice are at work in our lives. But, in the U.S. justice is primarily based upon a male oriented meritocratic model which stresses the protection of individual rights (Gilligan, 1982; Noddings, 1984). A meritocratic system serves to justify the normative rules by which we live. These norms combine the standards typically associated with Judeo-Christian teachings, a strong sense of egocentrism, and a rigid system of merit.
We cherish individual liberty as a bastion of freedom and a symbol of the American spirit or dream (Bellah, et al, 1985; De Tocqueville, 1956). This individualism uses merit to defend the inequities existing among people. By the principle of merit, opportunities for success will be afforded an individual if that person is honest, hard working, persistent, talented, and thrifty (Newman, 1988). Liberty is essential to this secular version of Puritanism as each individual needs to be free from the interference from others. Liberty allows the personal qualities which provide success in the marketplace to materialize. Those individuals who fail to achieve material well being deserve their plight. Had they worked harder, been more intelligent, or thrifty success would have followed them. The society which results from this type of mentality will be superior if enough of the individuals comprising that society are meritorious. The frontier mentality represented by this type of society depends upon the strength of its individuals and their control over their own destiny (Tucker, 1980).

The meritocratic system stresses the abstract, avoids relationships, and finds justification in the assumption that the individual makes decisions based on their best interest (W. Ryan, 1981). Those people with more talent, or making more effort should receive more reward. It is assumed that all have an equal opportunity to compete for the benefits or rewards of achievement. Unfortunately, opportunities are not equal, and as a result the meritocratic model of equality justifies the
inequality which exists in our society (Domhoff, 1983; Edsall, 1984; Lapham, 1988; Phillips, 1990; W. Ryan, 1981; Stevens and Wood, 1987). This system of fairness fits the hierarchial, elitist organizational patterns which characterizes the decision making processes in our government, industry, schools, and in the management of the environment in which we live. The system relies heavily upon a competitive conceptualization of fairness with little or no realization of the importance of cooperation, sharing, and specific relationships (Kohn, 1986; Noddings, 1984).

Our meritocratic system is consistent with the development of ethnocentrism and prejudice. It forms the basis of our nationalistic assumptions and the creation of foreign policies based upon the tenets of social Darwinism (Newman, 1988). For instance, we can exploit the resources of other countries because we work harder and are more talented, while the people in these lands are somnolent and unable to make decisions concerning their resources on their own (Bodley, 1982). Social Darwinism holds that one group of people is superior to another by evidence of superior performance and efficiency in competitive situations. Although social Darwinism if often rejected intellectually, the evidence of our actions demonstrate that the theory is closely followed (Hancock, 1989).

The meritocratic system also justifies the anthropomorphism which places humans above other living species. We have multiplied in numbers as a species because we can out compete other species. We are therefore more deserving of life than
other species (Wenz, 1988).

Finally, the meritocracy justifies the egocentrism found in our assumptions concerning human nature and laissez faire capitalism. The individual is viewed as independent, separate and more important than human society. The system stresses the differences in humans with the strength of the individual's character as the primary mover in success. This egocentric, and typically utilitarian orientation creates problems in even thinking about the rights of future generations of human beings, let alone the rights of other biological entities or the earth itself (Wenz, 1988).

Because opportunities are not equally distributed but typically a right of birth, the rich are allowed to remain in control while increasing their share of the benefits of societal production (Domhoff, 1983; Phillips, 1990). The meritocracy justifies the corporate executive officer of a company "making" $14 million a year while workers in the company are laid off because of low company productivity. The meritocracy answers the question: Why is a CEO worth on the average 70 times more after taxes than another person working in the same company (Reich, 1992)?

A society which bases its distribution system heavily upon the conception of merit must emphasize not only liberty, but equality of opportunity (Bell, 1973). A system of distribution based upon merit is unjust without an even chance to achieve the benefits and avoid the burdens of life in a society. Without
equal opportunities the most meritorious people may be not able to achieve the material well being and socially esteemed positions (W. Ryan, 1981). If the race to acquire a larger piece of the benefits is fixed, liberty becomes tarnished. Freedom becomes oppression and merit hollow. Without equality to balance liberty and communal solidarity, a system of distribution based upon merit must use illusion and coersion to perpetuate itself as just (W. Ryan, 1981).

As human population grows and resources and access to land become more scarce, the importance of equality of opportunity becomes more important. Inequality and problems with a distribution system based upon merit are primary reasons that present U.S. societal organization is not sustainable. As our solidarity is strained by increasing numbers of people who face an inequality of opportunity, our system of distribution must change. The imbalances in power found in the U.S. expresses itself through the illusion of merit, opportunity, and equality. These imbalances must be recognized and challenged because of the instability they bring to our solidarity and threat they bring to our liberty.

As suggested by the definition of sustainable development, change is a critical component of an orientation toward sustainability. Change usually involves some measure of compliance and a realignment of power relationships within our societal organization (Burbules, 1986). Sustainable development also implies the need to change the basis for decisions.
concerning the distribution of individual and communal benefits and burdens.

The change toward a sustainable society requires a combination of implementation strategies. The command and control strategies of top down directed change will become increasingly ineffective. Resistance to the coercion inherent with these strategies will make compliance costly (Etzioni, 1991; Glasser 1990). Similarly, bottom up strategies conceived to achieve a societal consensus of values are generally impossible (Eckstein, 1989). A combination of strategies from both directions is required for change in the direction of a sustainable society. Changes in power relations are inherent to the changes required of sustainable development. Fundamental changes will also be required in our economy and the conception of economic justice.

Sustainable development provides an alternative to the meritocratic justification of the norms found in United States. This notion of development challenges the meritocracy by suggesting the importance of sharing, cooperation, and obligation. The ethical system which supports a sustainable society depends upon changes in our system of fairness to one based upon equal access to production’s benefits and a sharing of negative impacts of production. This fair shares system recognizes the differences in individuals, but emphasizes the similarities of our human needs and conditions (W. Ryan, 1981). Fair shares does not extract the individual from society, but
stresses that people are inseparably individual and social beings. This approach to ethical justification goes beyond our present system by stressing the importance of nurturing, caring, sharing, and relationships (Noddings, 1984). This more female orientation toward morality remains hidden by the male dominated meritocratic system we presently employ to decide what "ought to be" (Gilligan, 1982).

The fair shares system of equal access focuses on the importance of "we" more than "I", "ours" more than "mine", cooperation more than competition, and consensus rather than fiat or coercion (W. Ryan, 1981). The sustainable society involves a new combination of values and norms stressing both ecological stability and obligation to life. A fair shares approach to these norms and values provides a socially oriented justification system which moves us away from the egocentric, elitist orientation of our present meritocratic system. Fair shares provides the basis of a more egalitarian society in which all might flourish and justice might be served. This type of society would find a more effective balance of liberty, equality, and solidarity.

**Time**

A more inclusive conception of time is an essential component of a sustainable society. When most people think of the environment, conceptions of space usually come to mind. But, time and space are inseparable. As Piaget suggests,
"Space is a still of time, while time is space in motion - the two taken together constitute the totality of the ordered relationship characterizing objects and their displacement... when it comes to time, we cannot abstract the spacial and kinetic relationship, i.e. we cannot ignore velocity." (1969, p.2)

This statement illustrates the importance of time in environmental issues as the concepts of entropy and sustainability depend upon the understanding of time's relationship with space (E. Hall, 1976; Rifkin and Howard 1980).

E. Hall (1984) writes of the various types of time suggesting that time includes concepts, events, and rhythms; not just the constant that Newton suggested. Hall describes the different time orientation used by various cultures in his description of monochronic and polychronic time orientation. The informal, low context, nature of time orientation makes such a simple element such as time difficult to understand. We learn about time through process. It becomes part of us, part of what we are. As a result, people learn life style patterns at an informal level by living from day to day. Because our conception of time is part of our living process, we need to analyze time to more fully understand its relationship with the environment.

The development theory behind policies in much of the world today is based on a purely linear perspective of time. The *Stages of Growth* by W.W. Rostow (1960) exemplifies a classic example of linear time orientation applied to development. Rostow, an influential economic advisor in the Kennedy White House, widely applied his views of development through his influence on American policy. This type of linear approach,
called time’s arrow, is tightly aligned with the Western notion of progress (Gould, 1987; Rifkin, 1987).

Western man creates a dichotomy between linear and cyclical conceptions of time. The development of a sustainable society includes both time’s arrow and time’s cycle, but in a combination that become neither, but more. Time is conceived as what Gould (1987) describes as deep time. Deep time includes rhythmical, cyclical, linear, ecological, and historical notions. It is internal to all of us and internal to the universe (Kealey, 1990; Shepard, 1982)

A more complete understanding of time is critical to the reorientation of the Western idea of progress which has dominated developmental strategies for the last two hundred years. Progress becomes a value laden concept that extends from the Western philosophy of material well being. This notion of progress involves a linear perspective of time. Rifkin states,

"Western civilization was thrust into a new time orientation, complete with a new set of symbols and images. The new god was science and technology; the new salvation, material progress; the new church, the industrial order; the new idol, the clock and watch; and the new ritual, the daily schedule." (1987, p. 170)

The neoclassical economic model forming the basis of most Western schemes for development assumes the inevitability of the linear model of progress and of Western capitalism. Progress is essentially based upon the level of material consumption and is measured by neoclassical economic analysis. This type of analysis views resources as products of human ingenuity in the extraction and production processes (C. Hall, et al, 1986).
Julian Simon goes so far as to suggest that man is The Ultimate Resource and the measure of all time,

"And there is no meaningful physical limit - even the commonly mentioned weight of the earth - to our capacity to keep growing forever." (1981, p. 346)

Ethnocentrism is also part of the neo-classical notion of progress as cultures are consumed right along with resources. Bodley (1982) states that Western cultures make the following types of assumptions:

1. Materialism is universal
2. Needs are not met by traditional cultures
3. Industrial goods are superior to hand crafted ones.

An ecological model of development needed for a sustainable society judges progress in terms of ecosystem stability and equality of resource use in a sustainable fashion over time. Put in terms of energetics, progress represents the maximazation of energy investment sustainable over time. As a result, the criterion used to judge progress and the definition of development coincide.

In this study I envision an alternative to the linear march of Western capitalism. Wilkinson (1973) suggests that an ecological model of development doesn't equate progress with material gain. This author suggests that in an ecological model of development "we no longer need to invoke ignorance as the explanation of the persistance of primitive modes of production in some societies" (1973, p. 103). In a sustainable society time and space are intertwined and harmony and sustainable relationships over an indeterminate time period are the focus.
Appendix Four
Philosophical Basis For A Sustainable Society
Norms and Values

There are no easy or simplistic ways to describe the philosophical foundations of sustainable development. The complexity of ecological relationships and imprecision involved with issues of quality make the concept of a sustainable society complex and problematic. Layers of incommensurable meaning and value cause difficulty while our inability to define quality also adds to our philosophical limitations. The orientation of a sustainable human society rests upon relationships and ethical decisions which are based upon our best consideration of quality. Yet, our rationally dominated system of knowing and ethics depends upon precision and absolutes. Present theories of justice are simply inadequate to explain what is required of life in a sustainable society. This is not to say that these theories are incorrect, but to suggest that they don’t go far enough to include all of the layers of meaning and relationships which must be considered.

In similar fashion, the rules and principles that are associated with formal ethical justification don’t go far enough to explain the way in which we make decisions concerning how we ought to live (Etizoini, 1988). In this chapter I describe the norms and values which should be emphasized by a sustainable society. The combination of norms and values with the rules and principles described in the next chapter provides a more complete
philosophical basis of education for sustainable development.

I will first define norms and demonstrate how our present system of institutionalized norms impact our behaviors. I draw examples from work, politics, family, and school to illustrate how our norms are indicators of our mechanical world view. The norms that would be consistent with sustainable development are then described using examples of how those norms would extend from the institutions which touch our lives. The chapter concludes with a description of the individual values which would be consistent with sustainable development and life in a sustainable society.

**Norms And Values Defined**

Our social institutions provide us with norms which influence the creation of our individual values. These norms impact the type of information we receive, the way in which we receive information, and process through which information is gathered and filtered. As a result, norms play a significant role in our belief systems, the individual values we hold, and the decisions we make (Etzioni, 1991).

A social norm is an accepted mode of behavior which guides our behavior when confronted with specific situations (Rokeach, 1973). I use the word norm to represent the accepted behaviors or procedures followed by societal institutions. Norms apply to all bureaucracies: family, work, school, church, recreation, the military, the media and the other institutions found in our human community. In essence, norms are the communal expressions of
accepted guidelines for our behavior. Norms are imparted to us as part of culture and we often comply with them without consideration (Bellah, et al, 1985; E. Hall, 1976).

I use the word values in this study to represent a more internalized and personal guide to behavior. Values go beyond the modes of behavior that are specifically prescribed by societal norms to describe a conviction toward an outcome or generalized conduct which is more appropriate than other outcomes or conduct (Caudto, 1985). Values are extensions of our belief systems and attitudes toward our existence. As such, they are directly influenced by societal norms but are personalized interpretations of those norms and have cognitive, affective, and behavioral expressions (Caudto, 1985; Etzioni, 1991).

The normative concept of progress provides an example of how norms play an integral part of our conception of justice. Norms and values play a critical role in our lives, but often go unquestioned as simply part of what we do (E. Hall, 1976). For instance, most of us in the United States, never question the notion of progress (Rifkin and Howard, 1980). This notion is very often tied to our work and the importance of getting ahead. Success at our job means more money and status. We perceive that moving ahead at work is essential to our personal progress. We often give family and personal relationships secondary status to work relationships because progress is so important (Newman, 1988). Anyone in the United States that works in a bureaucracy knows the importance of being moved from an office having windows
to a smaller windowless office. Status has been lost, but more importantly, progress within the system is not being accomplished.

We understand that progress means having more, which we assume means a higher quality of life (Bodley, 1985). We follow the axiom that the more our country grows economically, the more we are progressing. As a result, in the U.S. the use of resources is often justified in the name of progress. Adding value and order to resources is considered a measure of progress and provides the basis of our materialistic way of life. We become extensions of the objects we possess and want to have more as a demonstration of our personal progress (Bodley, 1985; E. Hall, 1976).

Imagine a presidential political candidate not endorsing economic growth. The norms established in the United States would make this type of endorsement political suicide. This is because our political, economic, and media institutions follow the reasoning and assumptions of neoclassical economic theory and stress the importance of progress. We rarely question the importance of economic growth because it is so ingrained in the institutions which strongly impact our belief systems (Bodley, 1985; Milbrath, 1989).

The norms in the United States stress the unrestricted right of an individual to enter into market agreements. Economic progress depends upon this individual right and all of our institutions recognize this norm. It is no wonder in this nation
that autonomy and liberty are cherished above all other values (Bellah, et al, 1985). Because our values are processed from the communication we receive, our societal institutions play an important role in establishing the field of possibilities from which we develop our individual values (Durkheim, 1973; Etzioni, 1991; Habermas, 1992). The example of progress demonstrates that the norms of our society cannot be separated from the values we hold (Etzioni, 1991).

In the remaining portion of this chapter, I will briefly describe the dominant core of norms presently found in the United States and more completely describe the norms and values that would be associated with sustainable development. This description is meant to provide an overview of normative behavior, it is not meant as a complete listing or analysis of norms and values.

**Norms Presently Found In The United States**

The societal institutions within which we function in the United States play a strong role in the maintenance of our mechanical world view. What follows is a listing of the core norms found in our society and a few examples of how those norms are promoted by the institutions which shape our lives. The norms stressed in addition to progress by U.S. society include: anthropocentrism, liberty/autonomy, patriarchy, merit, paternalism, and rationality.
Anthropocentrism

The United States is extremely anthropocentric in societal orientation as humans are viewed as the source of all value and consideration. This norm of being "man centered" is so much a part of our institutional lives that we rarely consider anything but the importance of our actions to humans.

An example of our anthropocentric orientation is illustrated by the protection of tropical rainforests. The reasons for protecting these areas are typically anthropocentric in orientation. For instance, tropical rain forests are valued because the species found there can provide medical cures for human diseases (WCED, 1987). Ecosystems are destroyed in the name of progress as these areas provide the resources for economic profit which will eventually improve the human condition (GTC, 1990a). This will be accomplished through the economic growth and industrialization which will eventually follow the growth of capital within the nation containing the tropical forest ecosystem. These immediate economic considerations are weighed against the value of maintaining the ecosystem as a laboratory for furthering human understanding of ecosystems, medical research, and for the stabilization of climate (GTC, 1990a; WCED, 1987).

All of these considerations are made to promote the human condition and are argued in language that emphasizes the rights of human beings. These rights include: the rights of local residents versus government intervention in the use of the land,
the rights of national governments to determine how best to use the resources within its borders, the rights of multinational corporations and the international community to dictate resource use through trade agreements, the rights of environmentalists to speak out against what they perceive as abuses to the land.

Through all of the controversy concerning deforestation in the tropics it is clear that the primary consideration is the impact of that action upon human beings. How might tropical ecosystems be best used for human benefit? Ecosystemic value is usually only considered through the concept of stewardship (Passmore, 1974). This means the humans must accept the role of caretakers and managers of God’s creations (Barbour, 1980). Although the concept doesn’t have to take on religious connotations, stewardship does represent a separation of humans from the ecosystems which humans impact (L. White, 1967). Rather than consider other species or ecosystems because of their own inherent value, stewardship focuses upon human centered conceptions of value. We humans should decide what is of value and which relationships should be preserved.

Individuals stressing inherent ecosystemic value in debates over tropical deforestation are on the fringe both philosophically and politically (Scarce, 1990). Although an ecocentric position is not taken seriously, it cannot be ignored because of the enthusiasm and perseverance of the individuals taking this position (Manes, 1990; Scarce, 1990). Ecocentric arguments are not taken seriously because they impinge upon the
anthropocentric norms through which we conceive justice and because these arguments represent a challenge to those in power positions within our institutions (Lohmann, 1990; Sachs, 1990). There are no institutions in the U.S. today which are not anthropocentrically oriented. All of the government agencies charged with environmental protection and management are anthropocentric in focus (Henning and Mangun, 1989). These agencies typically make decisions which favor economic uses of resources, but even at their most environmentally sensitive moments the consideration is always anthropocentric.

**Liberty/Autonomy**

The liberty of each individual to act without interference from others is another normative benchmark found in U.S. institutions. Liberty includes autonomous types of action in which an individual determines their own course of behavior in conjunction with their own plan (Beauchamp and Childress, 1979). Although we live in a society which impinges upon our negative rights by redistributive tax schemes and entitlement programs, the principles of laissez-faire capitalism and libertarianism are part of the mix of norms which drive our institutions. These principles stress the boundaries between people which must be protected at all costs and never crossed (Harrington, 1984). All of our institutions demonstrate the importance of individual liberty and autonomy to our culture (Bellah, et al, 1985). Examples from health care, education, and the movies provide illustrations of this norm.
The present debates over health care delivery in the U.S. are limited by the importance of each individual having the liberty to make a choice freely among various health care providers. The concept of good health is depicted in our culture by the absence of individual illness. The individual must be able to buy the health care which will extend their lives. The use of resources and the application of medical technology and expertise is not dispersed with the health of the community as the primary motivator. Individuals who can pay are afforded the treatments regardless of the fact that the medical community's efforts would bring more well being if community based preventative medicine was practiced.

We practice the norm of autonomy when we insist upon informed consent in the practice of medicine (Beauchamp and Childress, 1979). Even when the consent of the individual is not critical to the well being of the community, the medical profession uses informed consent. This norm includes the disclosure of information to the individual, comprehension of information by the individual, voluntary consent to procedures undertaken by medical practitioners on an individual, and the competency of the individual to provide consent (Beauchamp and Childress, 1979). The practice of medicine provides an example of the importance U.S. society places upon liberty.

An additional liberty issue in the practice of medicine is the freedom of doctors, hospitals, lawyers, and insurance companies to make as much money as the health care market will
allow. The term socialized medicine is avoided by political leaders because of the importance of autonomy and liberty to the U.S. public. The assumption is that economic theories of justice can fit our health care system. Unfortunately, health care defies the application of market mechanisms. For instance, taking a series of 10 cent antibiotics could save an individual’s life. In our society human life is not considered equal in value to the cost of these antibiotics.

The liberty to choose our own medicine is not only the norm for the health industry, but is seen as a cure for our ailing schools (Chubb and Moe, 1990). The freedom to enter the marketplace stressed by both efficiency and libertarian models of justice is viewed as the answer to the inefficiency and ineffectiveness of U.S. public schools. This is not the only place where our emphasis upon liberty and autonomy are demonstrated in our schools, however. In U.S. schools students spend most of their time working quietly alone (Goodlad, 1984). The hidden curriculum stresses autonomy as students are inculcated with the belief that a group is a composite of individuals. We are told that a group is only as strong as its weakest member. Teachers typically can’t figure out how to evaluate group projects because of the stress on individual competition, while students rebel at a grade which comes from group projects (Kohn, 1986).

Our heros also reflect our emphasis upon individual liberty and autonomous action. Our movies portray the effective problem
solver as an individual who is a maverick working on the edge of societal organization. These individuals are free thinking and free acting who pursue justice on their own terms. Examples from recent movies abound: Clint Eastwood's character Harry Hallahan, Mel Gibson's portrayals of a unique cop in the "Lethal Weapon" movies, Kevin Costner's portrayal of a soldier who finds life's meaning in "Dances with Wolves," Tom Cruise's character Maverick in "Top Gun."

Each of the movies listed above were viewed by millions of people and were box office successes. Each of the characters in these movies were males with a strong personality who find the individual courage to fight oppression on their own terms. The characters portrayed by these leading men are part of a long tradition of strong, independent, out of the main stream men who protect liberty by means of autonomous initiative. John Wayne, Gary Cooper, and Steve McQueen are examples of actors who have played these types of heros in earlier films. These examples provide evidence of the institutionalization of liberty and autonomy as well as the strongly held norm of patriarchy found in the United States.

The over emphasis on liberty disturbs the balance required of a sustainable society between equality, solidarity and liberty. As implied by the descriptions of liberty/autonomy as a societal norm in the movies, the liberty we stress often serves as an illusion of individuality. As Boorstin (1987) states,
"What ails us most is not what we have done with America, but what we have substituted for America. We suffer primarily not from our vices or our weaknesses, but from our illusions. We are haunted, not by reality, but by those images we have put in place of reality." (p. 6)

**Patriarchy**

The feminist movement in the U.S. has greatly increased the recognition of the patriarchal nature of U.S. society (Faludi, 1991). Male dominance in our society expresses itself in our schools, health care system, business and industry, and transportation industry. Historically, school administrators have been almost exclusively male (Tyack and Hansot, 1982). Our environmental leaders as represented by writers expressing environmentally oriented perspectives are primarily male while activists are women (P. Simmons, 1992). Our doctors are primarily male while our nurses are primarily female. Airplane pilots are male but the comfort of the passengers is the responsibility of females. Our elected officials at local, state and federal levels are usually male. Our religious leaders are primarily male.

Financial renumeration also reflects the patriarchal nature of our society. Women typically earn less as compared with their male counterparts in similar occupations. For instance, the average male high school graduate still earns more than the average female college graduate (Faludi, 1991). These observations are examples of the impact of patriarchy but say nothing about how the patriarchy has been established as an institutionalized norm.
Studies have demonstrated that the type of questioning given males varies from that received by females in classroom settings. Males are given more time to answer and are asked questions which require a greater depth of consideration. This questioning is often done by female teachers who are not aware of the bias they are imposing upon children. Rationality is stressed while the importance of relationship for male students is minimized (Gilligan, 1982). Gender stereotyping is represented in textbooks as social and occupational roles are reinforced (Stevens and Wood, 1987).

Television also institutionalizes patriarchal relationships. Sporting events covered by television are almost exclusively male dominated. College and professional football, and basketball are mainstays of television sports. Professional baseball and hockey are also covered. None of these events involve coverage of women’s sports. In fairness to the television industry, the networks would probably cover women’s sports if sponsors would pay for advertising and there was a substantial audience. However, the unspoken message is that women’s athletic participation is not as worthy of our consideration as male participation (Kohn, 1986).

The national news provides another example of the institutionalization of patriarchy. These major network broadcasts are almost exclusively provided by males. Female reporters may be used as correspondents "on the scene," but the national level news is spoken by males. Females are also under
represented in news coverage as only 10 per cent of television news involves women (Paranti, 1986). The unspoken message that is provided is that serious consideration requires male consideration.

**Merit**

Merit is the established U.S. norm which maintains status and justifies inequity. The concept of the meritocracy has been described earlier, but the degree to which the meritocracy has been institutionalized and used to rationalize injustice should not be underestimated (Bowles and Gintis, 1976; W. Ryan, 1981). We might distribute the benefits and burdens of our productive system in several ways: equal shares for each person, to each person in accordance with their needs, consideration of the social contribution of the individual, according to individual effort, and by individual merit (Beauchamp and Childress, 1979). This study has suggested a different conception of justice which would consider needs at a plurality of levels beyond the individual human. Presently, in the U.S. the concept of merit dominates our normative system of justice.

The meritocracy is evident in our health care system as those who are most able to pay receive the best health care. Although lottery systems are established in many places for organ transplants, the basic rule is that those with the money deserve the best care. This rule applies through our whole lives, from pre-natal care to acceptance into nursing homes (Beauchamp and Childress, 1979).
We can see the system of merit at work in our schools as those who are the most meritorious are separated and promoted as special and deserving of more attention, awards, and opportunity (Apple, 1979). The educational practice of tracking and gifted and talented programs exemplify meritocratic justifications for inequities in teaching (Giroux, 1981).

Meritocratic norms are demonstrated in several ways in U.S. schools. Teachers spend more time with bright students than with average and below average students because of meritocratic norms (Bowles and Gintis, 1976). A great deal of the system of control and motivation found in schools is based upon grades (Purpel, 1989). Whether it is gold stars or a place on the honor role, grades are used to illustrate not what has been learned, but the superiority of one person over another (Kohn, 1986).

Meritocracy is served by this type of competitive type of evaluation even though learning may be stifled (Kohn, 1986; W. Ryan, 1980). In addition, the appearance of material well being will get any individual in the U.S. better treatment than those with dirty or tattered clothing (E. Hall, 1976; Paranti, 1986).

The meritocracy plays a major role in the ethnocentrism and prejudice which is so prevalent in the U.S. (W. Berry, 1989) For instance, the breakdown of black families in the inner city areas of the United States is often viewed as resulting from a lack of character (Edelman, 1987). What else would you expect of people with such low moral fiber? Viewed more holistically the breakdown of family structure can be associated with the norms
that are dictated by a meritocratically based economic system which is struggling to maintain itself (Bowles and Gintis, 1976).

The breakdown of the inner city family can be viewed as an extension of a culture which prizes material well being above the interaction and nurturing of a closely knit family (Collard, 1989; Malcolm X, 1964; Noddings, 1984). How many adults in the United States drag themselves from day to day working jobs so that they won’t miss their payments to the bank? Certainly this problem confronts people from our inner city areas, but there is another side to this problem. The residents of our inner cities have the problem of working many hours to meet their rents and payments as well as the inability to even get loans. Black workers are not paid as well as white workers on the average and are often denied financial assistance (Durning, 1990; Edelman, 1987).

If a man is not able to find nondemeaning work in our society, that man will probably be unable to maintain a sense of self worth (E. Hall, 1976; Newman, 1988). When this man disassociates himself from his family, is the problem one of character, or a problem stemming from economic alienation brought on by a system of meritocracy? If children are not nurtured and cared for, is it surprising that they will grow up with values that express themselves in less family oriented behaviors (Collard, 1989; Noddings, 1984)? The answers to these questions are complex and depend upon a number of factors, but societal norms have a great deal to do with our eventual behaviors (W.
Ryan, 1981). Societal norms, in turn, are directly influenced by the ecological factors which form the texture of our lives (Bradford, 1989; Wilkenson, 1973). The inner city environment in which many black families find themselves provides a backdrop of filth, decay, and pollution (Easton, 1993; Ember, 1992). These factors foster a downward spiral of poverty which reinforces the class orientation of our meritocratic system of justice (Black Panther Newsletter, 1991; Durning, 1990; Scheer, 1988a).

**Paternalism**

The institutionalized norm of paternalism is integrated with elitism, expertise, and the exuberance for the technological fix that characterizes our society (Ehernfeld, 1981). The top-down, command and control management style so often found in U.S. bureaucracies is an illustration of the paternalistic fashion in which people in the U.S. are managed (Etzioni, 1991; Jackall, 1988). Environmental policies from the time of Teddy Roosevelt and Gifford Pinchot have followed a paternalistic model (Hays, 1959). In this model decisions concerning what should be done with the nation’s resources would be made by an elite group of scientists trained in efficient applications of scientific management for the purpose of achieving economic goals. Although the political atmosphere has changed, the paternalistic attitudes endorsed by Pinchot are still prevalent today (Hays, 1987).

The most blatant extension of paternalism comes in our nation’s schools and colleges. High school and college students have so little to say about the schools they attend, the
discipline received, course content, curricular structure, the way in which they are taught, and the evaluation process they are forced to endure (Purpel, 1989). We teach these students about democracy in civics classes, but they live through an extremely undemocratic process. When students graduate they don’t take part in elections and look for government to take care of their problems (Milbrath, 1989). They are indoctrinated into passively accepting patriarchial and paternalistic societal organization (Bowles and Gintis, 1976).

Another example of paternalism is the militarism which drains resources, destroys life, and creates great habitat alteration (Kennedy, P., 1987; GTC, 1990a). The U.S. public is removed from decisions concerning the military because of elitest and paternalistic notions of national security. The dropping of atomic bombs at the end of World War II were done in the name of national security and saving American lives. This decision demonstrates the pornography of power in which reason is used to justify the destruction of life (Lemons, et al, 1990; Scheer, 1988b; Schell, 1982). As Arney suggests, the decisions concerning the use of atomic weaponry "might be called the madness or rationality, on one hand, and the rationality of madness, on the other" (1986, p. 213) Elitist decision making ties the meritocracy, power, paternalism, and rationalism into a package of institutional norms which lead to the obfuscation of responsibility and obligation to life.
Rationality

The use of rational choice mechanisms is pervasive in the U.S. policy making (Dryzek, 1987). The academic disciplines of political science, economics, psychology, and sociology all have their own version of a rational perspective as applied to problem solving within their sphere of interest (Zeh, 1992). If these models or perspectives of decision making are correct, they should closely coincide with reality and human nature. This is not to make the assertion that we change from what is to determine what we ought to do, but to make our theoretical models as adequate as possible. Zeh (1992) lists ten assumptions of the rational perspective of decision making which form the basis for our present societal emphasis upon rationality.

1. "The individual is prior to and independent of the group
2. Humans are only self-interested;
3. Humans act only out of rationality;
4. Value is subjective;
5. Humans are utility-maximizing;
6. Utility is subjective;
7. Neoclassical view is value-neutral;
8. The individual is the appropriate unit of analysis;
9. Organizations function rationally; and

In these perspectives of decision making the role and impact of norms and values is underestimated while the importance of efficiency and utility is overstated (Dryzek, 1987; Etzioni, 1991). It often appears that in our society the principles which extend from neoclassical and libertarian economic theories of justice are applied to all problems (Wenz, 1988). The application of economic theories and the lack of correlation of the assumptions listed above with reality result in inappropriate
problem definition and a limited range of solutions (Dryzek, 1987; Zeh, 1992). The complexity of our problems often results in a lack of relevant information being made available to individual decision makers (Bobrow and Dryzek, 1987).

The notion that emotion is involved with policy decisions or that humor should play a role in our problem solving process is foreign to our rational way of thinking (Carpenter, 1988; Katz and Lawyer, 1985). We are unable to accept that our mechanistic and rational way of thinking will not be able to solve all of the mysteries which surround us (Harman, 1988).

The treatment of Islam by U.S. television provides an example of our emphasis upon rationality and our rejection of the unknown (Said, 1981). The separation of church and state in the U.S. represents a norm of separating the irrational nature of spirituality from the rational nature of business and government (Barbour, 1980; Paranti, 1986). The media portrays the many sects of Islam as irrational because of the overt inclusion of religion in the affairs of state. The policies of Iran are depicted as being despicable because the country is headed by an irrational religious leader. Because a country blatantly includes spirituality with its obvious irrational orientation, the U.S. media portrays the policies of that country as misdirected and foolish (Said, 1981).

Another example of the emphasis upon rationality are the norms promoted by television news. The "news team" on most channels may allow a frivolous sports reporter or a humorous and
wacky weatherman, but the real news must be presented in a
controlled, unemotional, rational fashion. A rational
explanation of the days events allows the viewer an appraisal of
the progress which is being made (Hachten, 1987). The hint of
neutrality is often demonstrated by the presentation of opposing
view points, but the values of those selecting the news and
hiring the help are rarely questioned (Bagdikian, 1987; Paranti,
1986).

Norms For A Sustainable Society

We require an ethic that encompasses humans both as
individuals and as communities. This pluralistic model of how we
ought to live embeds both individual and community in a larger
and more complete ecosystemic conception of life. Ecocentric
norms guide the fulfillment of needs. Without consistent and
understandable ecocentric institutional norms to guide our social
participation, our morality will continue to be incomplete and
inconsistent with our obligations to life on earth.

The following is a list of norms which would be accentuated
by the institutions of a sustainable society. These norms
include: ecocentrism, appropriate technology, collaborative
decision making, ethical accountability for organizations,
liberty, equality, and solidarity.

Ecocentrism

This explanation of the philosophical basis of sustainable
development does not assume that ecological stability is a moral
norm specifically applied to human action. However, the
environmental context dramatically influences our world view and conceptions of morality (Rifkin, 1991; Wilkinson, 1973). Without consideration of ecological factors, humans will be unable to make ethical decisions concerning layers of meaning which their choices impact. We shape and are shaped by our surroundings (Merchant, 1989). An ecological perspective will help us understand this shaping process and aid us in directing our institutional norms toward a sustainable society (Milbrath, 1989).

A sustainable society must change its orientation away from the anthropocentrism which dominates our present social organization. Humans must become a less prominent actor in the ecosystems which sustain them (Devall, 1988). The impact of resource extraction and the pollution must be included in our deliberations and strongly emphasized in our choices (Daly and Cobb, 1989; Dryzek, 1987). Humans must still make choices which are oriented toward their ultimate biological and spiritual purposes and needs but, these choices must be moderated and balanced by choices at other layers of decision making (Keekes, 1992; Stone, C., 1987).

Ecology is a study of the relationship between biotic and abiotic entities (Whittaker, 1975). It is a study of the house in which we are embedded and which sustains us. Economics might be described as the study of the management of that house (E. Odum, 1975). Unfortunately, modern economic theory rarely attempts a full accounting of ecological factors (Brennan, 1988;
Daly and Cobb, 1989). We are separated from nature by means of our technology, societal organization, and our mechanized worldview (Merchant, 1980). For instance, the problems of our inner city alluded to previously are not viewed as ecological in scope. Unhealthy ecological relationships combined with unjust and coercive societal relationships yield individuals who will not be able to fill their own needs or the needs of the community where they live (Easton, 1993; Ember, 1992; Harrington, 1984). The result of these relationships is an unstable and unsustainable society.

Taylor (1986) describes and rejects three types of justification for anthropocentrism and human superiority over other species. First, this author rejects the Judeo-Christian belief that man was created in the image of God and therefore superior or higher on the chain of being than others. Second, the Cartesian dualism of body and soul is rejected. Decartes believed that animals are "automata" having no souls, humans are therefore superior, he reasoned, by virtue of our spirituality (Harrison, 1992). Third, Tayor rejects the criteria of rationality as a criteria for superiority.

Envisioning humans as part of life’s community and another species focused upon life’s relationships, provides ample justification for the denial of human superiority. As Taylor (1986) suggests, the rejection of human superiority over other living entities is an intial step toward respecting nature and meeting our obligations to life. Taylor’s orientation leans more
toward an individualized or biocentric ethical position rather than an ecocentric position, but some of the arguments certainly apply to ecocentrism (Wenz, 1988).

The first step toward rejecting human superiority may be even more basic than Taylor suggests, however. We may first have to accept our ignorance concerning life’s relationships (Arney, 1991). When we begin to cope with all that we don’t know and will never be able to understand, we may take the first step toward ecocentrism. This first step might also be the movement needed to combine faith and spirituality with science and rationality into an integrated and ecological way of knowing.

An ecocentric position implies the denunciation of the dualities which are characteristic of industrialized Western Cultures (Merchant, 1980; Plumwood, 1992). These dualities include: male/female, intrinsic value/instrumental value, spirit/matter, competition/cooperation, sensuality/spirituality, mind/matter, subject/object, life/death, and human/nature. An ecocentric position allows us to reduce the tension between these dualities and to view them as part of a web of relationships making up a spontaneous whole.

Ecocentrism involves an identification with the richness of the rest of life (Devall, 1988). It is an awareness and orientation which will change our life style from the ego-centered anthropocentrism we presently feature. As an institutionalized norm ecocentrism would balance our levels of consideration between individual and community, human and non-
human, biotic and abiotic, dominance and subjugation. An ecocentric norm would focus upon long term sustainability and the need for compassion as we balance our actions against the needs of other species, other generations, and natural systems (Brennan, 1988, Snyder, 1990).

Human population limits provide an example of an ecocentric norm applied to our institutions. Without limits upon human population growth and the resource appropriations made by human beings, we are destined to destroy the very foundation upon which human life rests (Catton, 1982). Our present anthropocentric norms and morality make it nearly impossible to consider anything but the rights of human beings. Ecocentrism would allow us the opportunity to consider our limits as well as the earth’s limits and balance our actions in accordance with ecological principles. We would become neither victims or dominators of nature, but part of an ecological balance of life (Merchant, 1989). For instance, the policy of the U.S. regarding population control in other nations should represent these ecological principles and not the positions represented by corporations producing baby formula. Family planning and the right of women to control contraception in Third World countries should not be limited because the country in which the family lives allows abortion (Charlton, 1984; Hartmann, 1987).

The problems of human population growth are not just limited to Third World countries, however. It does little good to improve the efficiency in the production process and internalize
all forms of pollution into our economic accounting if our population continues to rise (Ehrlich and Ehrlich, 1990). People in the U.S. consume many times more resources and create many times more pollution than individuals in other countries (World Resources Institute, 1990). It is not misanthropic to suggest that there are too many people in the United States. Similarly, it is not un-American to suggest that power relationships between countries are involved with human population growth and that U.S. policy plays a major and not always positive role in those relationships (Hancock, 1989; Hartmann, 1987). We need to change our policies concerning human population to represent ecocentric norms.

Our concerns for the growing human populations of Third World Countries are not misplaced, but the problems facing the people of those countries may be fewer than the problems facing the U.S. because of its growing population. This is because the people of the U.S. become part of a culture of consumption. In our culture the appropriation of resources becomes excessive when viewed in relationship to the needs of other species and the land community, and when all of our existential needs are considered (Bodley, 1985).

Incentives and disincentives need to be institutionalized which would promote a decline in our national population. For instance, our present method of assigning grant money for college students involves a formula in which the more dependent children in a family the higher the grant money. The formula recognizes
the financial problems of parents with many dependent children
and makes sense if we are not concerned with the number of
children in each family. If the emphasis of our state and
federal governments was on lowering human population, the formula
might be changed so that the financial incentive for parents was
to have fewer dependents.

Emphasizing early childhood care and nurturing in our
society would also reduce the population. The attention to early
childhood care in the U.S. is generally at a pathetic level, both
in terms of money spent and emphasis (Edelman, 1987; Noddings,
1984). Children need to know that they are a part of a caring
community which values their existence (Lickona, 1988). The
alienation and disrespect shown our children through despicable
day care leads to alienated and disrespectful adults who lack
self esteem and concern for their communities.

Because parents fail to make enough money to fill their
material needs and desires, they often take short cuts looking
for the least expensive day care possible. States usually begin
their educational programs at the age of five. This arbitrary
beginning to a child’s education needs to be moved to months
after birth if the parents choose. By being sent to ill
designed, equipped, and financed day care; the child learns some
ugly lessons concerning U.S. society. The message is that the
child is insignificant compared to a parent’s work, the
acquisition of money, and material well being. The child may not
be able to articulate that notion, but the seed is planted and

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the fruit will bear the scars of the lack of care and nurturing.

We need to pay for the care of our children. This care will be expensive and should serve as a disincentive for parents to bear more children. It has been suggested that many teenagers have children as a source of self esteem, and self gratification (Edelman, 1987). If these teenagers were nurtured more through their childhood by their parents and their communities, there would be less of a chance that they would take actions which would be harmful to themselves, their parents, or their communities.

Another example of ecocentric norms involve the limitation of our appropriations upon the land community. Were we to live lower on the food chain, we could feed ourselves much more efficiently. We would need much less land to provide us nourishment and would lessen the strain of water resources in many Western states (Robbins, 1987). The habitat destruction from our present appropriations (Vitousek, et al, 1986) limit our ability to meet our obligations to life. Ecocentric norms could involve meatless days in schools, prisons, and hospitals.

The media could help in limiting our appropriations of energy and resource by adopting ecocentric norms. Just as tobacco and liquor advertising has been removed from television, the advertisement of beef and poultry could be banned. Government tax policy could provide a discentive for eating extensively from the top of the food chain by taxing beef and poultry in the fashion that tobacco and liquor are now taxed.
Once again, the efficiency gained by eating lower on the food chain would allow us to appropriate less land to feed our population. We could then reduce the amount of land placed in industrialized monocultures allowing more habitat for other species, reduced soil erosion, and more stable ecosystems.

Norms for transportation in the U.S. could be changed to follow ecocentric patterns. For instance, incentives for saving energy could be accomplished through extensive government support for mass transit, cyclists, and pedestrian travel (Fairlie, 1993; Whitelegg, 1993). Just as the government presently subsidizes the automobile and oil industries by providing a system of roads and bridges, the support of cycling or mass transit could lead to less use emphasis upon individual travel by means of the automobile and eventually much less stress on ecosystems (Fairlie, 1993). Progressive taxation on gasoline consumption by means of a credit card system could reduce our consumption of ghost energy sources, and provide a disincentive for excessive consumption. This card system could easily change the tax assessed at the pump from the present rate to two, three, four, or five dollars per gallon when the card holder went over set consumption limits.

An ecocentric position must involve a consideration of all layers of needs and obligations. A part of this consideration is the reduction of human demands upon the earth's ecosystems and local habitats. Ecocentrism must include norms which will serve to reduce human appropriations of resources. Individual human
rights should be considered only within the framework of community obligations and ecological context. The weighing of obligations has never been easy or avoidable. Ecocentrism forces us to include more than humans in our deliberations.

**Appropriate Technology**

Scientists, political leaders, and all members of society need to consider the long term ecological and ethical impacts of the technologies humans use in their daily lives. Decisions must be at the level of sustained fulfillment of needs versus temporary wants. We need a more complete understanding of technology and how it fits into our lives. Technology should involve the use knowledge applied to the creation of physical objects and organizational patterns which serve to fill our needs and obligations.

Technology should be considered a union of the creative and innovative portions of being human with the ecological influences which impact us. Instead of technology being an instrument of exploitation, we should conceive of technology as part of our relationship with nature (Barbour, 1980; Schumacher, 1973). Conceived in this fashion, technology can become appropriate only if it fits within and maintains ecological stability. Schumacher (1973) stresses intermediate technologies which allow humans to fill their needs yet still maintain ecological connections and integrity. Schumacher states,

"The technology of production by the masses, making use of the best of modern knowledge and experience, is conducive to decentralization, compatible with the laws of ecology, gentle in its use of scarce resources, and designed to serve
the human person instead of making him the servant of machines. I have named it intermediate technology to signify that it is vastly superior to the primitive technology of bygone ages but at the same time much simpler, cheaper, and freer than the super-technology of the rich." (1973, p. 154)

The agenda of all three political candidates in the past presidential election suggests that GNP must grow to secure equity and well being. All three candidates concerned themselves primarily with the management of our economy and how technology might be used to solve our problems. Although George Bush’s rhetoric at times took on a libertarian view of justice, all three candidates followed a neoclassical economic efficiency model for justice and well being for the citizens of the United States. All three candidates stressed the stimulation of new technologies that might be sold in global markets or that might be used to increase efficiency and profits for U.S. companies. It is alarming that the only options offered the U.S. public involved improving the quality of life through technological progress, having more, and consuming more. As Nietsche stated,

"Once we possess that common economic management of the earth that will soon be inevitable, mankind will be able to find its best meaning as a machine in the service of the economy - as a tremendous clockwork, composed of ever smaller, ever more subtly adapted gears... It is clear, what I combat is economic optimism: as if increasing the expenditure of everybody must necessarily involve the increased welfare of everybody." (Arney, 1991, p. 14)

The U.S. presidential debates demonstrated that we are not asking the right questions relative to our problems. As a result, we are extremely limited in the solutions which we contemplate. Our society has been led blindly into a consensus
for solving problems which can only involve mechanical applications of knowledge and technology (Erenfeld, 1978; Rifkin, 1984). Most projections of U.S. population involve a doubling within the next century (Ehrlich and Ehrlich, 1990). We know that we will have increased problems resulting from the drawdown of energy supplies from ancient sources (Catton, 1982). We know that pollution will continue to be a problem. It must be assumed that somehow we believe that through the ingenuity of the human mind and the application of technology, we will solve these future problems (Simon, J., 1981). It seems that our present consumptive life styles are not possible without the assumption that technology will save us.

One way for technology to become more appropriate is through the use of inclusive energy analysis which considers all costs and benefits of production and consumption. Our societal institutions must undertake a more complete quantification of benefit cost analysis such as Daly and Cobb’s (1989) Sustainable Welfare Index. Although the quantification of quality is problematic, we should evoke a more inclusive accounting system to bridge the transition from a mechanical world view to one concerned with ecological sustainability. The use of inclusive energy analysis would help make decisions concerning the sustainability of technology used for transportation, military, nutritional, and health systems.

For instance, the ecological impact of a U.S. diet with so much caloric intake located high on the food chain must be
considered. The costs of industrialized agriculture must be weighed against the benefits (W. Berry, 1977). The sustainability of all agricultural methods must be considered along with the level of appropriation of energy and resources used to feed human beings. When this type of energy analysis is undertaken in conjunction with a full accounting of the benefits and burdens of our technologies it will become obvious that a new diet and more appropriate agricultural technology is required (W. Berry, 1977; Paddock, et al, 1986; Robbins, 1987).

**Power Assessment**

Power relations and institutions which maintain power relationships must be assessed with disparities in power balances minimized. Unless we assess the web of power which surrounds us we will not come to realize the lack of boundaries between the actors in life's relationships. We must consider the environment in our analysis of global security exactly because of this lack of boundary. For instance, pollution doesn't recognize the boundaries of property lines. Similarly, when considering the long term well being of human beings, the boundaries between inherent value and intrinsic value are indistinguishable.

We can no longer separate the components of our safety and well being. It seems that we have become both executioner and victim (Arney, 1991). For example, the nuclear deterents we think will keep us safe will also be the source of our annihilation and dispair. The economic relationships which bring us material prosperity also is the source of dangerous pollution,
climate alteration, and equally dangerous imbalances in global power. Security is no longer just a military consideration but an inclusive ecological concept. As former Soviet President Mikhail Gorbachev stated,

"International economic security is inconceivable unless related not only to disarmament but also to the elimination of the threat to the world's environment." (Global Tomorrow Coalition, 1990a, p. 287)

The inequities in power can not be eliminated as they are a part of the relationships which define our existence. By understanding and analyzing power, however, we may be able to make the imbalances in power less destructive and the lack of power less debilitating. This analysis and reduction in power inequities must be accomplished at all levels of societal organization. Although power can never be controlled or eliminated (Arney, 1991; Burbules, 1986; Faucault, 1979), we will never be able to balance liberty, equality, and solidarity without achieving some balance in power relationships. Subjugation must be limited at local schools, hospitals, and access to land or housing if we are to achieve justice in human relationships (Reiman, 1990). Likewise, global agreements such as GATT and the North American Trade Agreement which reek of power inequities must be dissected and reconsidered (Ritchie, 1990; Shrybman, 1990; Weissman, 1991).

Both explicit and implicit means of subjugation must be understood, exposed and limited. This is to suggest that the use of merit to implicitly justify patriarchy and ethnocentrism is not acceptable. Power relationships are involved when we
consider individuals as being equal only to the extent that those people display talent or excellence. The abuse of merit takes place in the U.S. when talent or excellence is equated with gender, race, or family heritage.

As an institutionalized norm, power assessment would ask the questions: Whose needs are being met? What are the costs of meeting those needs? Who makes the decisions concerning these benefits and burdens? Who is producing and transmitting the information which helps us frame our solutions? What are our obligations relative to these considerations? These basic questions would lead to a better understanding of the implicit web of power in which we are embedded. The questions would also make us consider the distinction between want and needs. Taking this type of approach to change and decision making would lead to an understanding of the assumptions that form the basis of the solutions we seek. Asking these questions would also help us combine the outcomes we seek with the moral standards required to maintain our liberty, equality, and solidarity.

An example of the normative use of a power assessment is provided by looking at the educational classroom and asking the question concerning whose needs are being filled. Meeting the needs of the children through active learning methods is the emphasis of most liberal educators (Dewey, 1902). However, most classrooms feature passivity as teachers lecture, and students listen or work quietly alone (Goodlad, 1984). Perhaps the needs of the teacher are more effectively being filled in the
classrooms Goodlad (1984) describes. It is also plausible to interpret this research as implying that the needs of society are more important than the needs of individual children. Schools must produce passive workers and citizens who will accept the inequities in which they are embedded.

When we use an analysis of power to determine whose needs are being filled, we must investigate the organizational structure of education, the teaching process itself, and the content covered. This type of analysis could lead to a collaborative effort of need fulfillment. We cannot escape power relationships, but assessing whose needs are being met will help us to focus our behaviors in a more balanced fashion thereby filling needs and meeting obligations at all layers of consideration.

**Collaborative Decision Making**

Part of institutionalizing a norm of power assessment is to include principles of democratic inclusion into the decision making and change processes. All members of our society should be allowed to participate in choices which impact their lives. The process of inclusion brings up the importance of scale as the motivation to participation requires the satisfaction of knowing that our participation is integral to the problem solving process (Hungerford and Volk, 1990; Sale, 1985). Equally as important as participation is the exposure to different ideas. Democratic inclusion must allow the voices of those with differing viewpoints to be heard (Etzioni, 1991).
The principles of democratic inclusion allow change to be approached from both a top/down and broad base/up approach. Without this type of dual action involving the vision of our leaders and the insight of the members of our society, change will be ineffectual and reform resisted or rejected (Eckstein, 1989).

There is a need for our society to become responsive to the needs and morality of its people. Unfortunately, our present system of governance is stagnated by the power of special interest groups who block any change which negatively impacts their narrow band of interests (Etzioni, 1991). The power of special interest groups also influences governmental politics effecting education (Moran, 1989). The power and influence of these special interest groups need to be contained by limiting the financial influence they can exert upon our elected officials.

Because we often approach problems upon a scale which doesn't allow an individual a voice or the perception of meaningful participation, special interest groups have become a vehicle through which power may be applied (H. Smith, 1988). Much of this influence could be avoided if the decisions concerning such things as education, security, health care, and environmental protection were made at a local level or regional level (Sale, 1985). When decisions which should be made at the local or regional level are transferred to the national level the influence and power of special interest groups become

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debilitating and change improbable.

Conflict resolution involves skills which include the ability to listen to others and demonstrate that their voice is understood, the skill to express your own feelings concerning the conflict in a non-abusive and non-abrasive fashion, and the ability to seek solutions in which all of those effected by the conflict can benefit (Katz and Lawyer, 1985). The style presently featured to resolve conflicts in the U.S. results in a we/they perspective characterized by resentment and resistance. This adversarial style is prevalent in our court system, our schools, and our business management (Everhart, 1983; Glasser, 1990; Katz and Lawyer, 1985).

Collaboration in conflict situations is possible if power relationships are balanced, coercion limited, and a "we versus the problem" attitude attained (Katz and Lawyer, 1985). The interests of all layers of consideration must be included rather than just exclusively considering the position of those in power or those resisting that power (Johnson, 1991).

**Integrated Ways Of Knowing**

Integrated ways of knowing should be stressed in our decision making processes (Kealy, 1990). We must get away from the overemphasis upon rational analysis and mechanistic types of decision making. How we think about our ecological problems greatly impacts the solutions we find (Crowell, 1989). The questions we ask are an extension of the ways in which we think and understand (Bowers, 1993). An ecological and holistic
perspective is not possible without adopting an ecological or integrated way of contemplation (Kealy, 1990). An ethic of obligation upon which a sustainable society might rest depends not just upon rationally based rules and principles, but also upon ecologically based contemplation (Milbrath, 1989). If the different levels of our consciousness are allowed to dominate one another we will fail to achieve a balanced and ecological founded ethic. As Kealy states,

"...any contemporary philosophical construction of an ethic which neglects the improvement of consciousness or intelligence is not going to provide the basis for a truly ecological lifestyle." (p. 100)

Emotion must not be viewed as a negative human factor, but as an essential part of being human. Myth through local stories, family stories and histories must become part of our sense of reality (Beringer, 1990). Humor should be used to recognize the ambiguities of the power structure and the limits of our understanding (Arney, 1991). Imagination and creativity should be as important as rationality and mechanical procedures. Our biological instincts and our oneness with the biosphere must not be ignored or minimized (Skolimowski, 1981; Wilson, 1984).

If we are to apply an ecologically oriented obligation of life philosophy to our lives, we require an ecologically based form of consciousness and intelligence. An integration of the various levels of our consciousness into the deliberations over our problems is a step toward forming the ecological basis of a sustainable society. A norm of integrated analysis should be required for our teachers (Kealy, 1990). Without self reflection
upon the structure of our consciousness, an integrated way of knowing is unlikely. Teachers won’t be able to serve the needs of communities which have to handle environmental problems that defy anthropocentric solutions. Our present utilitarian and deontological forms of morality rationally push us toward egocentric and anthropocentric ends (Bowers, 1993). These rationally based rules and principles will become less dominant as our integrated and ecologically based consciousness leads us toward more ecocentric lives (Kealy, 1990).

**Ethical Accountability For Organizations**

The moral nightmares found in many U.S. bureaucracies provide an example of the need for integrated ways of knowing and the inclusion of moral accountability for an organization’s actions and policies (Jackall, 1988). Bureaucracies are based upon the assumption that efficiency is increased through a rationally based system of centralized control (Beniger, 1986). Bureaucratization of our society is demonstrated by our hierarchies of administrative control; standard policies for work, behavior, and appearance; strictly adhered to linear time schedules, and the fragmentation of knowledge by means of specialized experts (Jackall, 1988).

The hierarchy of control allows for the insulation of decision makers from their human obligations when moral dilemmas occur (Edsall, 1984; Jackall, 1988). The centralized administrators who control a bureaucracy may be responsible for all actions taken by their organization, but insulate themselves
from the blame for immoral actions (Jackall, 1988, H. Smith, 1988). This is done by means of the organizational layering of control and function (Weber, 1946). In the modern bureaucracy the individual’s consideration of ethical action is tempered by the desire to succeed and move up the chain of command.

The goals of the corporate bureaucracy and the state bureaucracies which serve them are economic first and foremost (H. Smith, 1988). Occupational stability and promotion depends almost entirely how well the individual serves bureaucratic maintenance and the economic success of the bureaucracy (Seidman, 1986; Simon, et al, 1986). Morality, responsibility, and obligation are of little concern as each individual’s concern becomes promotion and the approval of superiors who demand allegiance, productivity, and increased efficiency. The fragmentation of procedures made possible through the specialization of expertise also often insulates those lower in the chain of command from blame (J. White, 1988). As Jackall states,

"What matters in the bureaucratic world is not what a person is but how closely his many personae mesh with the organizational ideal; not his willingness to stand by his actions but his agility in avoiding blame; not his acuity in perceiving falsity or errors but his adeptness at protecting others; not what he believes or says but how well he has mastered the ideologies and rhetorics that serve his corporation; not what he stands for but whom he stands with in the labyrinths of his organization." (1988, p. 193)

Bureaucracies must be flattened with the actions of the bureaucratic institution held consistent with philosophical foundations and goals of a sustainable society. The ethical
consideration of everyone’s actions must be taken into account. The members of every bureaucracy must be introduced to the word "no" (Arney, 1991) Everyone has an obligation to life and everyone is accountable for their actions. We must stop passing the blame.

The scientists who created the bombs dropped on Japan at the end of World War II barely considered the moral implications of their research (Arney, 1991; Scheer, 1988b). The bomb exploded at Hiroshima killed 75,000 people and injured another 100,000. It should be remembered that 245,000 people lived in Hiroshima at the time of the bombing. It should also be remembered that the present capacity for destruction and death is more than a million times the capacity of the bomb which struck Hiroshima (GTC, 1990a).

The people who make the decisions concerning nuclear arms are scientists, military officials, a few politicians, and a few intellectuals who all speak the techno jargon of nuclear weaponry (Scheer, 1988b). These people function in government and military industrial bureaucracies and are called upon to make rational judgements about deterence and defense. Unfortunately, these people rarely consider the magnitude and significance of the topics they discuss. They are forced to think rationally about something which is totally irrational. Members of U.S. society are insulated from the actual meaning of these deliberations by the use of technological language which obfuscates the message (Hays, 1987). Similarly, the people
making the decisions concerning nuclear arms are insulated from criticism by layers of bureaucracy which limits access and diffuses responsibility and blame (Arney, 1991).

The madness of nuclear deterance is brought about by the dominance of rationality upon our consciousness and upon the organizational structures upon which we depend (Arney, 1991). Our rational and mechanistic science brings us to this insanity because of our failure to recognize our ethical obligations to life. Our indoctrination into "value free rationality" has lead us to deny our moral responsibility to "just say no." We become both executioner and victim by means of the madness of rationality (Arney, 1991). Our emphasis upon rationality has allowed us a bureaucratic system of organization in which the blame can be shifted to others, and where our values and obligations to others are left out of our deliberations (Jackall, 1988). Organizations in a sustainable society would be held accountable for actions.

Equality

The inequality of opportunity found in the U.S. is institutionalized and communicated to individuals through messages justifying meritocratic relationships. This institutionalization of inequality lessens the need for overt communal coersion and saves resources (Foucault, 1979). It is a strange twist of reasoning that in our present meritocratic system of allocating societal benefits we blame the victims for inadequacies in our system of production (W. Ryan, 1981). Fixing
blame to victims requires less of us than changing the organization of our communities and our modes of production. An even more twisted form of reasoning and application of efficiency to social processes is the mentality of these victims blaming themselves (Newman, 1988).

Merit should be part of our system of justice as each individual is provided the freedom to creatively pursue excellence. The exhibition of excellence provides the impetus for celebration, but doesn't make one individual deserve more consideration than another. Theoretically, the system of merit is meant to allow those with more ability and those exhibiting more effort to receive more rewards (Stevens and Wood, 1987). This system of distribution and justice depends upon equality of opportunity, however (Bell, 1973).

It pleases us to consider the U.S. a land of opportunity. This conception of opportunity has been a tradition of the frontier spirit with which our forefathers attacked the expansiveness and wealth found in the land (Nash, 1980; Tucker, 1980). The notion of limitless opportunity extending from both nature and human ingenuity combines with our meritocratic norms to form the American Dream (Bellah, et al, 1985; Simon, J., 1981; White, J.K., 1988). This frontier spirit in combination with the Greek conception of merit has provided a mindset conducive to the rapid use of resources and the promotion of a spirit of excessive individualism (Bellah, et al, 1985).

The meritocracy is flawed in several ways regarding
opportunity. First, the wealth and possibilities that extend from the land have limits. At the point where resources become limited, the inegalitarian division of benefits and burdens becomes extremely unjust as the essential needs of those with less merit cannot be filled. Second, it is apparent that the meritocracy is extremely anthropocentric in its application (Wenz, 1988). Merit is accorded human beings, and only secondarily to species to whom we can see human traits. Third, the starting point at which members of the present generation begins its quest for merit is affected by the position of the past generation from which they descended. As a result, the equality of opportunity associated with the American Dream is played on an uneven field of possibilities (Ryan, W., 1981; Stevens and Wood, 1987).

The answers to several questions will help to illustrate problems with meritocratic ways of thinking. What is it that makes an individual with one type of talent more deserving of a disproportionate amount of benefits than a person with another type of talent? A sports hero commanding millions of dollars in salary and advertising revenue may have gambling problems or be a drug addict. This sports hero will probably still be paid handsomely regardless of his transgressions. Another person could be a caring and loving parent who makes everyone with whom they come in contact feel good about themselves and their community. This person might deserve merit because of the content of their character, yet holds a social worker's job which
pays minimum wage.

I describe a sports hero and a social worker to illustrate the inadequacy of our meritocratic system of distribution. An individual may have the physical assets, emotional intensity, and intelligence to play a game, but is that individual worth 100 times more than an exceptional social worker from the city where they both work? People pay the ticket prices and buy the endorsed products, but at what costs? The resources used to pay these sports figures could be used to meet our obligations to the community in which they live.

This example serves to demonstrate several characteristics of our society. First, the overemphasis on "having" in our society. The individuals with more merit are allowed to have more rather than do more, be more, or interact more. Second, the passive orientation of our society as we sit and watch others rather than interacting or doing ourselves. Third, our orientation toward winning and competition. We too often look past the transgressions of an athlete at any level of competition if it is believed that the individual will bring victory. In a sustainable society the existential needs of being, doing, and interacting require fulfillment as well as our need to have.

It is a strange and inequalitarian society which pays its heros, corporate executive officers, and bankers at a rate hundreds of times greater than its workers. The homelessness and poverty affecting children points out the extent to which we have applied the meritocracy and the extent to which distribution on
merit is unjust (Lappe, 1990; UNICEF, 1989). Each individual deserves equal consideration and a fair share of the benefits of our societies production (Lappe, et al, 1987). The shares can never be equal, but the discrepancies between classes must be moderated (W. Ryan, 1981).

A question of equal opportunity plagues systems of justice based upon merit. The opportunities available to the people of the U.S. are limited by a system of justice that justifies inequality (Collard, 1989; Edsall, 1984). We make the assumption that equality can grow from seeds of inequality. The inequality of reward received by one generation improves the starting position and the opportunities of the next, however. In addition, our society has never relinquished the prejudice and subjugation of slavery (W. Berry, 1989). Our system of merit simply serves to perpetuate the inequality present in past generations. As Malcolm X stated in his autobiography,

"This pattern, this 'system' that the white man created, of teaching Negroes to hide the truth from him behind a facade of grinning, 'yessir-bossing,' foot-shuffling and head-scratching- that system has done the American white man more harm than an invading army would do to him.

Why do I say this? Because all this has steadily helped this American white man to build up, deep in his psyche, absolute conviction that he is 'superior.' (1965, p. 274)

When inequality of opportunity becomes based upon the historical possession of property and affluence, gender, or race; our society will suffer the symptoms of power imbalances, loss of freedom, and loss of solidarity. These symptoms express themselves as the rebellions found periodically in our urban
areas, drug abuse and addiction, violent crime, family breakdown, and the perpetuation of an underclass of citizens. Why are there more black males in prison than in institutions of high learning in the United States (Mazrui, 1993)? Another characteristic symptom is the token representation of minorities and other subjagated segments of our population in management positions, political leadership, and in influential positions in the communication industry (Blake, 1993; Paranti, 1986). These imbalances must be exposed and eliminated. The racism, sexism, nationalism, and speciesism which pervades our society must be openly addressed and corrected.

The meaning of a fair shares system of distribution of benefits and burdens must be considered and debated (W. Ryan, 1981). One way to accomplish this is to address the difference in financial renumeration between the top 20% and the bottom 20% of our population (Durning, 1990; Lappe, 1990). What figure would represent a fair difference between these two segments of our population? We should also address the lack of representation of women and minorities in positions of power. Is a quota system any different than the implicit restriction of an individual’s rights presently being imposed by our meritocratic system? The racial bias of our penal system should be addressed. Why is our system of restitutive justice so racially skewed?

The appropriation of energy, habitat, and resources for human production and consumption is increasing both as a result of growing human population and the extensive consumption
patterns in industrialized and semi-industrialized societies (Lipietz, 1987). What is a fair share of energy, habitat and resources for humans to appropriate?

The answers to these questions will not be easily determined. However, it is wrong to continue the illusion of equality of opportunity as a justification for an inegalitarian society. Equality in a sustainable society requires more of us than our meritocratic conceptions of equality of opportunity. We must face up to the need for equality in all phases of our organization. We must find a balance between equality of opportunity and equality of results.

**Solidarity**

Sustainable development should focus upon what humans and other life forms have in common. What factors bring us together into a community. It has been stressed throughout this writing that the concept of community is more basic than the individual, and that a sustainable society would balance the needs of individual and community. Solidarity is the concept that expresses our connections, our oneness with the land community (Harrington, 1989; Leopold, 1966).

What norms and procedures might a sustainable society employ to move toward a balance of power? Exposing the norms of a program or institution by means of the following considerations will help apply a system of justice oriented toward filling our obligations to life. These norms also provide a view of the relationships on the continuum which examines exceptualism and
universalism (W. Ryan, 1981). They test our solidarity. These considerations are adapted from a list of questions W. Ryan (1981) used to analyze the ideological basis of programs and policies.

The first norm involves allowing each individual in our society a voice in decisions that impact their community. As stated earlier, scale is extremely important as individuals lose a sense of relevance and competence when handling problems beyond their sense of community (Sale, 1985). Because a sustainable society depends upon an active democratic processes, problems must be solved within the communities in which they occur. This is not to say that outside influences cannot be involved, but solutions cannot be imposed from outside the community. The imposition of solutions without the active involvement of the impacted community will lead to resistance and a lack of problem resolution (Katz and Lawyer, 1985).

Second, decisions must be oriented toward the well being and the fulfillment of general communal needs. If the decision making process is focused upon specific categories of people, the actions will probably result in exclusionary conceptions of individual's rights rather than the inclusionary concept of communal obligation (Harrington, 1989). Our institutions must oriente themselves toward goals which facilitate the well being of the general community. Freedom within this scheme involves the capacity of the individual to meet obligations to the community (Madsen, 1993). Individuals are important and must be
considered, but we have too long excluded consideration of the
general community from our deliberations.

The third norm involves the responsiveness of our
representatives to the public whom they represent. Not all
problems are local as many of our society's problems require
regional or national attention. To this end, the representative
levels of our republic must be required to become responsive to
the needs of all communities and of all people. Equal
participation in decision making and an open and public debate of
the issues must become the emphasis. Decisions which must be
made at a representative level should apply to all areas within
the jurisdiction of the representative body and avoid being
exclusionary and specific. Pork barrel politics must become a
thing of the past. The influence of special interest groups upon
representatives must be limited (Etzioni, 1991). When the money
and resources which flow from these special interests affects the
position of the representative of a community or region, our
democracy is diminished.

Fourth, a sustainable society would stress preventative
goals versus remediation. Regional and national goals would
focus upon filling the needs of all communities (Lappe, et al,
1987). Stressing prevention allows for proactive involvement,
saves resources, and lessens the impacts of potential problems.
Our present health care system demonstrates the devestating
impact of not stressing prevention.
Drug companies, insurance companies, and hospitals are multimillion dollar organizations which depend upon illness. These types of organizations often talk of prevention, but stress remediation. As a result, the focus become illness and not good health and well being. The views expressed by organizations with special interests regarding health care do not always represent the best interest of preventative medicine and the best interests of the general public. Organizations with both strong opinions and influence upon health care received by individuals in the U.S. include: The American Medical Association, The Health Insurance Association of America, The Pharmaceutical Manufacturers Association, The National Federation of Independent Business, and The American Hospital Association. It is not necessarily in the best interests of the people represented by these organizations that prevention be stressed over remediation.

Another example of the need to stress prevention over remediation is found in environmental issues. Environmental remediation has proved to be expensive and debilitating to business concerns, yet required for the long term health of the community (Milbrath, 1989; L. Brown, 1990). The analysis of what should be done about toxic waste problems can be divided several ways (Stevenson, 1993). There are moral issues which involve arguments concerning property rights and the right of government to impose restrictions upon the liberty of individuals to use their property. Viewing toxic waste issues from a moral perspective involves questioning the general welfare of the
public and of the land community versus the rights of the individual (Schapiro, 1992). There is more to these moral deliberations, however, as the production process which brings us pollution has also brought us jobs, material goods, and affluence. A second form of analysis involves the definitional problems concerning risk (Rifkin, 1984). How do we determine what is harmful? Exactly what is toxic, and what amounts of toxicity are to be allowed? Risk assessment is difficult and often involves a good measure of valuation involved in the first form of analysis. The third type of analysis of toxic waste problems involves the facts of the situation. This analysis seeks to discover what happened and why.

It is obvious from the costs of remediation and the movement of industry away from urban locations formerly used for industrial production that the consideration of toxic cleanup weighs heavily upon industrial decision making. The technological ability to sense toxicity has become much more acute while our legislated standards for toxic allowances have remained the same. If we had considered toxicity prior to industrialization the costs to the well being of the bioshpere would have been reduced. The costs of remediation are so great that many areas will never be recovered (Hennigan, 1990). If we are to learn from past mistakes regarding our uses of the land, we must stress prevention above remediation.

Fifth, a sustainable society would also stress open public planning and initially avoid voluntary individual compliance.
When planning is done in a private and exclusive fashion our decisions become extensively oriented toward the goals of those who yield power (H. Smith, 1988). Unfortunately, many of our representatives do not want their record made public because of their allegiance to sources of money which make their re-election more possible (Edsall, 1984; H. Smith, 1988). These allegiances often require representatives to take positions which are not in the best interests of the general public whom they represent.

Voluntary compliance simply works in favor of those who don’t comply (W. Ryan, 1981). The distribution of burdens is extremely unequal unless compliance is established through institutionalized norms and individual value systems. This type of compliance involves a slow and gradual process in which changes can be observed over generations. Compliance to new restrictions upon individual actions requires the force of publicly legislated sanctions if the burdens imposed by those restrictions are to be fairly distributed.

Sixth, experts would combine in the decision making process with those who are impacted by those decisions (W. Ryan, 1981). Part of the power of experts is the use of language which excludes the non-expert from the discussion (Bowers, 1993). Because the decisions concerning the use of technology and the goals of our society are ethical, the language used by experts must allow all to enter into the debate. Elite, or expert input should be no more valued than the input of those effected. As a result, the elitist and meritocratic orientation emphasized by
the ruling class in the U.S. today would be minimized.

The seventh norm involves the indoctrination of our children into a caring and nurturing society (Noddings, 1984). Equality of opportunity should emphasize the possibilities and potentials of our children. Programs which focus upon equality must be started before a child’s birth. The U.S. presently has an inhumane system of health care because of its lack of preventative childhood medicine. Prenatal care for women of lower economic status is often non-existent or a low priority. The education and care of our young children would be a priority of a sustainable society. Children learn respect, care, love, and esteem, by being treated with respect, care, love, and esteem. Presently, our next generation is growing up learning alienation, violence, hatred, and disrespect for themselves and their communities.

Prenatal care, day care and early childhood programs must stress the equality of opportunity. The self-esteem of the child is a priority as is the indoctrination of the child into a caring and nurturing society (Lickona, 1988). Every child must be a part of this system of care and opportunity regardless of race, religion, or nationality. Meeting our obligations to the essential needs of our children will allow these children to feel the esteem their community holds for them (Berman, 1990). This commitment from a child’s community will foster a sense of obligation to future generations and community. These types of early childhood programs will cost much more than the amount of
money presently paid by our society. We can not afford not to meet our obligations to care for our children, however. Our security and sustainability as a society is tied more to the care of our children than any type of military protection.

An eighth norm also involves children. Our taxation schemes and the amount of family payment for services which their children receive must be progressively rated. Families with more children must pay substantially more than families or individuals with few or no children. The norms which extend from our governance must encourage restrictions upon the number of children that are born. The people of the U.S. must face the reality that human population growth severely limits the sustainability of our society. The growth of human population endangers the security of humans all over the earth. We must not hide from the moral issues of population growth through debates about abortion. Consideration of the individual rights of mother and fetus are important, but pale in comparison to the moral issue of failing to limit the growth of human population in societies at all levels of industrialization.

Change oriented toward stressing the community and the social aspects of our lives has already begun in the United States. From the reforms in social and governmental organization brought about by the F.D. Roosevelt administration, the U.S. has been on a social democratic path. Although resisted by capitalists and especially libertarians, social democratic changes in the U.S. have made our society more humane by making
capitalists aware of the positive rights of all humans (Harrington, 1989). These changes have not brought this country to socialism, but have generally helped the public recognize that the market is not the cure for all ills.

Liberty

It is rare to hear disagreement in the U.S. on an abstract level concerning freedom and liberty. Most people believe in liberty. We believe that all deserve the right to "life, liberty, and the pursuit of happiness" as spelled out by the founders of our nation. However, the notion of liberty becomes much more difficult to agree upon when considered in concrete terms rather than the abstract (Ryan, W., 1981).

There are several complaints that would be registered regarding sustainable development by those favoring the meritocracy and our present system of distributional justice. First, the equality of result is determined to be no substitute for the equality of opportunity (Bell, 1973). It is suggested that if we concentrate on equality of opportunity, the results will take care of themselves (Friedman and Friedman, 1979). Second, an individual's negative rights and liberty are impinged upon if merit is not used to determine distributional justice. An individual has the right to expect non-interference from others regarding his personal affairs and her ability to enter the market for profit (Friedman and Friedman, 1979). A society which restricts an individual's liberty through profit restrictions is thought by libertarians to be unjust.
Our present inegalitarian system of justice is defended in the name of liberty. In this system we are ensured negative rights of non-interference by the constitution; our positive rights are ensured by the freedom to exercise our own initiative in the market place. If we all have equal opportunity to gain our share of property, justice will be served by the market. As a result, the assumptions and principles of economic efficiency are applied to nearly all phases of our societal relationships. In our present system, freedom is defined in a concrete sense as the right to unfettered accumulation (Lappe, 1990).

Sustainable development would answer these complaints concerning the impingement upon liberty by stressing the primacy of our communal existence. If one person’s liberty is another’s oppression, a society cannot be considered just. A system of justice which is predicated on scarcity is going to become more and more inegalitarian in nature as scarcity increases. The limits of property and resources amplify and limit the pragmatic applications of liberty in a meritocratic system of distribution. A system of justice will be unfair if one individual is afforded the unrestricted liberty to pursue the accumulation of property, and that liberty impinges upon the ability of others to sustain their lives (Lappe, 1990; W. Ryan, 1981).

The liberty to pursue unrestricted accumulation becomes extremely unjust when reviewed by ecocentric rather than anthropocentric norms. Liberty in a sustainable society would focus on the rights and obligations to develop relationships
which involve life's quality and fill all existential needs. This type of liberty would enhance our expression and participation (Lappe, 1990). Liberty might become a principle involving the obligation to quality and meaning infinite possibilities for all.

The achievement of absolute liberty is impossible, but a balance between liberty, equality, and solidarity affords the brightest prospects for liberty and justice for all. There is no reason to expect that there be exact equality of result. However, fair shares requires us to question and balance our distribution of benefits, burdens, and power (Copeland, 1988; Lappe, 1990; W. Ryan, 1981).

Values and Beliefs For A Sustainable Society

There is an important connection to be made between the values held by the individual and the norms expected by societal institutions. Although society shapes the pathways through which human needs are filled, there is a great deal of individual creation regarding the values and beliefs associated with the fulfillment of those needs. What follows is a list representing some of the values and beliefs that individuals should hold if the society of which they are a member is to become sustainable.

A. Ecocentrism must replace anthropocentrism. Our obligations to the biosphere are primary.

B. The focus is upon cooperation and group affiliation. Belonging and membership are the watchwords as we can't become complete as humans without social participation.

C. Caring and compassion must be included as an accepted and superior expression of morality.

D. A sense of community and solidarity is valued equally with the liberty of the individual.
E. Active involvement is valued over passive receptiveness

F. Humor and emotion are valued forms of expression.

G. The creation of beauty and the enjoyment of aesthetically pleasing landscapes extends from an emphasis upon the quality of existence. Quality is emphasized over quantification.

H. Diversity is celebrated as an extension of liberty and the compassion of communities which are obliged to encourage and value the diversity of all life.

I. Work is more than a means of having more. A sense of belonging, interaction, and creation must become valued as part of work. Meaningful production meeting ethical and ecological standards must become the focus.

J. Leisure and idleness must become as valued and recognized as industriousness and hard work.

K. Children should be reverred but limited. The sustainability of our society depends greatly upon how well we treat our children. Prenatal care, and day care need to become societal priorities. The quality of human life and the maintenance of habitat required for sustainable societies demands that the number of children be limited. Without attention to both consumption patterns and human numbers and the relationships between these factors, our obligation to life will be impaired.

L. Death should be viewed as an interconnected part of the process of life. When viewed holistically life must include death. The pain that is associated with suffering and unjust human conditions must not necessarily be associated with death. Death should be conceived as a biological transition and part of a larger ecological context of balance. Because we have such a fear of death in our society, we have mistakenly separated life from death. Our obligation to life requires that at an individual level we love life, but other layers of meaning and context must be considered and balanced.

M. Humility should be a part of our value system. We should understand the limits of human knowledge and that much of life’s relationships are beyond complete human understanding (Rasmussen, 1994).

N. Frugality should be valued as those in industrialized nations consume with much more moderation than is now practiced (Rasmussen, 1994).
Appendix Five
Philosophical Basis For a Sustainable Society
Rules And Principles For An Obligation To Life

The rules and principles approach to ethical analysis should provide a concise and understandable set of guidelines for judging our actions. This methodology might then be used for creating the ethical foundations of a sustainable society. Ethical rules and principles represent a formalized way of considering our decision making. I will describe an obligation to life theory and the principles which form the basis of that theory. The principles are broken down further into rules which are standards by which we can determine how we ought to act (Beauchamp and Childress, 1982). The hierarchial organization of theory, principles, rules, and judgements allow a systematic consideration of the changes required of sustainable development and the formalized justification of education for sustainable development based upon the obligation to life theory.

This method of analysis demonstrates the considerable difficulty of solving our problems with the use of only formalized and rational standards. Too often rules and principles become absolute and restrictive, not allowing the full range of consideration a norms and values approach provides. The excessive dependence upon rational and linear thinking can lead to unbalanced and restrictive decisions regarding how we ought to live (Nash, 1987). This problem may be as much a result of the incomplete nature of monistic ethical positions, as the over emphasis upon rationality, however (Kealy, 1990; Stone, C.,
1987). More will be added on the challenge of monistic thought to the concept of ethical pluralism in Appendix 6.

A rules and principles approach to ethical problems added to the consideration of norms and values can provide a balanced description of how we might solve the moral dilemmas associated with sustainable development. This attempt to balance the process by which we solve our moral issues combines ends and means through the consideration of both the satisfaction of essential needs and moral obligation at different planes of meaning. Our ethical choices regarding ends and means are strongly affected by the norms of the social institutions in which we are embedded. These norms have a vast influence upon the values we hold as individuals. It must be stressed, however, that each individual creates a personalized set of values which also impact our choices. The rules and principles we endorse evolve from our norms and values to become the formalized system of normative justification used to explain choices concerning moral dilemmas.

In this chapter I describe a formal rules and principles approach for a moral theory of obligation to life. It is from this theory that the philosophical basis of sustainable development and a sustainable society described by this study evolves. I take a moderate deontological position in which our obligations to life are stressed, but where the consequential consideration of our actions through the satisfaction of essential needs is also included.
I begin the chapter with a brief description of the obligation to life theory. I emphasize the limits of our knowledge and an integrated method of inquiry to fit a holistic ethic. Our scientific and technological exuberance must be balanced by the veil of ignorance which shrouds our pursuit of wisdom. I then describe the psychic and ecological alienation from the relationships which sustain our lives. Wisdom requires that we accept our intellectual limitations and a more limited role in the land community. The rationale for an obligation to life follows this discussion of our intellectual limitations. In this section, I provide the rationale for a pluralistic conception of morality.

The description of our intellectual limitations and rationale for an obligation to life theory is followed by a discussion of the rules, principles, and judgements associated with our obligations. I describe the four principles which comprise the theory: the principle of sustainability, the principle of need fulfillment, the principle of balance, and the principle of democratic inclusion. I amplify these principles with the description of rules and judgements applying to our obligations. Figure 6 provides a summary of the principles, rules, and judgements comprising the obligation to life theory. Cases concerning sustainable development are used to help explain the judgements made by use of the rules and principles which form the theory. The chapter ends with a brief discussion of retributive justice, obligations, and the sustainable society.
Foundations For Our Obligations To Life

The obligation to life theory of ethics provides the foundation of sustainable development presented in this study. This normative theory of duty provides a set of rules and principles for communal existence in the complete sense of the word community (Leopold, 1966). Sustainable development evolves from the obligation to community and from the relationships which create and sustain life. The basic premise of the obligation to
life theory is that we must act in such a way that we fill our
duties to promote and sustain life’s relationships. Our
obligation to the quality of life requires us to respect,
promote, and protect all of the aspects of the relationships upon
which life depends.

Choices concerning quality must be made through a process
which considers all of our obligations. These obligations cannot
be ordered in such a fashion as hierarchial lists of moral
standing. We have the obligation to promote the wellbeing of:
our self, our family, our species (both as individuals and as a
group), other species (both as individuals and as a group), the
ecosystem within which we live, and the ecosystems which help
support us. We should base our promotion of life’s quality upon
choices made with the long term wellbeing of the entities
considered. The interdependent relationship between all layers
of life makes our choices difficult. This relationship blurs the
distinction between instrumental and intrinsic value.
Accordingly, this blurring diminishes the importance of formal
heirarchial schemes of value.

Balance and sustainability require that choices will be made
which have an adverse or limiting impact upon individuals of all
species (humans included). As a result, the impacts of our
decisions must be tempered by compassion, long term habitat
protection, maintenance of life’s diversity, the avoidance of
the taking of life where ever possible, the preservation of
beauty, and systemic balance. This complete recognition of our
obligations includes death as a part of life’s cycle and includes humans within that cycle. It also recognizes the inadequacy of separating inherent and instrumental value when considering life’s relationships.

The needs of all species must be recognized and filled through the promotion of ecosystemic harmony and balance. Our obligations to life extend the consideration of value beyond the boundaries imposed by our skin by recognizing the value of whole communities, species, and ecosystems (Johnson, 1991). The obligation to life theory changes the defining theme of a moral life from rationality to relationship. Atomistic consideration is not diminished by this form of morality, but is encompassed within a holistic/pluralistic ethic.

Knowledge And Wisdom

The complete recognition of our obligations is possible only with a maximization of knowledge concerning the biosphere and our ultimate purpose (Orr, 1992). An omnidirectional investigation into the physical, biological, sociological, and spiritual aspects of existence is required to allow a more balanced conception of our place in the biosphere (Kealy, 1990). This type of inclusive study will also help balance the decisions we must make concerning the future of life on earth (Lovelock, 1979).

Without the inclusion and equal respect of all forms of inquiry we will be unable to make wise decisions regarding different levels of consideration (Harman, 1988; Kealy, 1990).
It is integral to sustainable development that we educate all members of society in this more inclusive means of investigation. However, this is not to say that everyone must obtain the same level of intellectual achievement. Each member of society must be imprinted with a basic holistic understanding and must be capable of implementing holistic forms of inquiry (Robottom, 1991). In addition, we must become aware of action strategies which will allow us to act upon the results of our investigations (Hungerford and Volk, 1990).

We need to understand and apply these action strategies and base our choices upon an integrated understanding of ecosystemic relationships (Hungerford and Volk, 1990; Orr, 1992). This will result in a society whose members understand the ethical ramifications of science and technology and will function according to that understanding. Education might lessen the coercion of those controlling the information as participatory decision making and non suppression of ideas become guiding rules (Etzioni, 1991). The allowance for democratic participation reduces resistance, increases efficiency, and would raise the levels of liberty and solidarity found in our society (Reich, 1991; Sanchez, 1976).

We must continue the scientific investigation which brings us so much material well being and technological exuberance. Microscopic and specialized investigation is an essential part of our knowledge and should be continued with enthusiasm. But, microscopic and reductive science must be balanced by a
macroscopic and holistic study of life. We must learn how the parts fit together to make a more complete and encompassing whole. The "round river" of energy and nutrients which flows through the soil, plants, animals, and back to the soil must be our primary educational concern (Leopold, 1966). The complexity of the relationships that support life can only be understood through holistic types of study (Brennan, 1988; Orr, 1992).

Our inquiry should include macroscopic and microscopic orientations (E. Odum, 1975); all of the ways of knowing available to us (Kealy, 1990); and the ethical, cosmological, and eschatological aspects of life (Skolimowski, 1981). We must also recognize that there are many formats through which we may inquire. Traditional educational institutions are not the only locations for inquiry, but are critical because of their influence on the transmission of formalized language and cultural patterns (Bowers, 1993). Leopold's comment on ecology and education, aptly stated fifty years ago, still applies.

"One of the requisites for an ecological comprehension of the land is an understanding of ecology, and this is by no means coextensive with education; in fact, much higher education seems deliberately to avoid ecological concepts...whatever the label, ecological training is scarce." (1966, p. 262)

Balance is also required concerning the exuberence with which we apply our knowledge (Crowell, 1989; Robottom, 1991). A review of the past one hundred years illustrates the arrogance with which humans apply the technology extending from their scientific advances (Ehrenfeld, 1978; Fuller, 1981; McKibben, 1989). We live our lives as if we actually do believe that we
are the ultimate resource (Simon, J., 1981). The assumption behind this arrogance suggests that all problems are solvable by humans. Human arrogance has been the norm of our industrialized society (Ehrenfeld, 1978; Robottom, 1991).

A norm for a sustainable society would involve the acceptance of human intellectual limitations. The scientific method has helped us solve many problems but there is a great deal of life that will remain a mystery to humans. Although there is still much to learn and much that can be learned, without the acceptance of the unknowable and a faith in our ultimate purpose we are destined to continue the illusion of technological control. One way to learn more about ecological relationships is to seek the wisdom of indigenous cultures concerning other species and ecosystemic balance (Bodley, 1982). The knowledge of indigenous people is a key to our understanding of biodiversity as well as ecosystemic and agricultural processes (Chambers, et al, 1989).

We are incapable of knowing what came before us, or our future as we can only speculate about our evolutionary past and future. Evolution is a life centered process in which diversity, stability, creativity, and dynamic interrelationships dictate the trends (Goldsmith, 1990a). Evolution is not directed (Goldsmith, 1989; Ruffie, 1986). In other words, human beings are not the result of a goal directed process which has reached fruition with the creation of humanness (Goldsmith, 1990a). Evolution is not only the process of adaption, but a process of cooperation as the
diversity of life modifies its relationships to sustain life (Wynne-Edwards, 1991). Within these relationships death is included as part of the process of life.

Consistent with this less competitive, non-directed, and non-anthropocentric view of evolution is the dismissal of social Darwinism (Goldsmith, 1989; Ruffie, 1986). This concept places a society, or group of individuals above another because of the merit gained by societal membership (Arney, 1991). Historically, the most powerful societies are those who maximize the amount and efficiency of energy use (Cottrell, 1955). It is logically and ecologically problematic to assume that the amount of energy which a society pushes through its productive system, and the amount of energy that society can mobilize in warfare necessarily makes it superior (Bodley, 1982; Chomsky, 1988; Ruffie, 1986). Extreme energy consumption only suggests that a society is functioning with a lack of ecosystemic balance, not that it is superior (Cowley, 1989; Goldsmith, 1990a). As a result, merit by way of power maximization loses its evolutionary justification (Goldsmith, 1990a; Ruffie, 1986).

Another facet of our intellectual limitations stems from our failure to question and understand the relationships upon which our lives are founded (Goldsmith, 1990b; Leopold, 1966; McKibben, 1989). We fail to question the assumptions of life in an industrialized society. We neglect the critical analysis of the technology which fosters a separation of human beings from the biosphere (Ehrenfeld, 1981). We are so impressed with our
technological accomplishments and material accumulations that we fail to consider how little we know, how much we have to learn, and the limits of our understanding.

Scientific investigation provides us with knowledge, but wisdom demands more of us. Wisdom produces the acceptance of the unknowable and our incapability of totally understanding life’s complexity. The concept of ethical pluralism described here is confounding because it includes levels of consideration that we are incapable of totally understanding. We have not forced ourselves to consider meaning at these levels; perhaps the fear of the unknown frightens us.

Our obligation to life requires an active and holistic inquiry into ecological relationships as well as an understanding of the interests and needs of other forms of life. To this end, our technological and intellectual arrogance must be balanced by the recognition of the veil of ignorance which we cannot escape (Arney, 1991). The veil that I am describing is not the imaginary scenerio suggested by Rawls (1971), but recognition of our actual intellectual limitations. We need to recognize how little we know about ecological relationships, the impacts of our actions upon the bioshpere, and the interests and needs of other forms of life. Our incomplete consideration for future generations often results from our ignorance concerning the impacts of our actions on bioshperic interrelationships (Miller, 1991).
Our ability to use science and technology to greatly alter ecological relationships is staggering and must be carefully considered. Technology is not neutral and will not save the earth as many popular "how to" guides for environmentally sound action suggest (Earth Works Group, 1989). The earth was here prior to our application of technology and will continue if humans become extinct. These guides for action are describing how we might minimize our impact upon the environment so that we won’t have to make any major changes in our consumptive way of life. They are calls for more efficiency to sustain our culture of consumption, but don’t address the source of our problems: our psychic alienation from the relationships upon which our lives depend and extend (Goldsmith, 1989; Shepard, 1982).

We have deluded ourselves into assumptions concerning other forms of life. As previously stated, we imply that we are the ultimate product of evolution. Through our Western heritage, we have assumed that evolution is equivalent with competition, superiority, and progress (Goldsmith, 1990a; Ruffie, 1986). Humans are therefore superior to all other forms of life. Rationalizations that non-human individuals or species have no interests, don’t fit within our schemes of moral standing, or only have minimal moral standing (Johnson, 1991). We fail to recognize that interests and moral standing are human creations and expressions of our limited understanding of other life forms and relationships. We lose sight of the social nature of our being and our connections with the land (Johnson, 1991). Our
value system reflects a psychic madness which expresses itself in our sick society (Fromm, 1976; Shepard, 1982). This psychic madness can only be rectified by the reinsertion of the individual human being back into the land communities which support them (Leopold, 1966). Sustainable development represents an attempt to heal our present individual and societal ill health, and change our anti-evolutionary ethic by establishing a balanced relationship with the land (Goldsmith, 1989). But, the acceptance of our obligations to the quality that precedes and includes mind and matter requires faith in our ultimate biological, evolutionary, and spiritual purpose.

Our inability to understand and predict the impacts of our actions must be carefully considered. As we evaluate our obligations and the concept of a sustainable society, we must balance our exuberence and intelligence with the acceptance of our limitations. If we accept our own intellectual fallaciousness and our incomplete understanding of quality, wisdom and logic would dictate that we make conservative choices in how we live (C. Hall, et al, 1986). This acceptance makes sustainable development a conservative concept. By minimizing the impact we have upon the biosphere we are accepting our limited ability to solve problems. I am not suggesting a genetic fatalism which predicts the crash or extinction of our species (Catton, 1982; McBibben, 1989; Miller, 1991). We must balance our intelligence, our ability to adapt with our inability to understand life’s complexities, and our inability to predict the
impacts of our technologies. This balance requires the application of an evolutionary ethic, a new system of ethics which matches a new social structure. Our obligation to life and the concept of sustainable development requires no less of us.

**Rationale For Our Obligations To Life**

Obligation to life ties the fulfillment of essential needs with the fulfillment of our moral obligations. The concept of a sustainable society depends upon a rationale for guiding the interaction between these two facets of our lives. This involves a balance between rights and obligations regarding individual and communal relationships. The rationale follows:

**Assumption 1** - Life involves relationships, which is to say that all life is interrelated and interdependent.

**Assumption 2** - Life is to be valued.

**Conclusion** - Our lives are valuable and we are obligated to maintain our life because of its value. Because all life is interrelated we are obligated to recognize the value in life's relationships as well as the value of our own life.

**Assumption 3** - To maintain our own lives we must meet our essential needs. Wellbeing results from the meeting of these needs.

**Assumption 4** - Our essential needs can't be separated from the essential needs of all life because of life's interdependence.

**Conclusion** - We are obligated to consider the essential needs of all life because of this relationship.

**Assumption 5** - The fulfillment of essential needs requires that other life and relationships be effected.

**Conclusion** - We are obligated to minimize the negative impacts upon these relationships. These obligations include:
1. Maximization of knowledge concerning life’s relationships

2. Recognition of our intellectual limitations in understanding all of life’s relationships, therefore making our choices conservatively regarding impacts upon these relationships.

3. Conservative action to minimize human impact upon other species and habitat, biodiversity, evolutionary processes, and beauty.

Assumption 6 - Our intellectual limitations and the limits of rationality require us to balance our own perceptions of appropriate actions with those of others.

Assumption 7 - We will be best able to balance our actions if we do not discriminate. All members of human society must be allowed to participate in choices and the formulation of the norms which guide those actions.

Assumption 8 - We will be best able to make balanced decisions if we allow all a voice. We must not suppress ideas which are not consistent with our own rationales. It is through the expression and consideration of ideas that wisdom might be achieved.

Conclusion - The democratic process best suits the consideration of our obligations to life. These processes should be evoked to help guide our decisions concerning our obligations.

We are obligated to sustain life. Moral actions involve balancing our obligations to maintain and sustain life in such a way as to minimize our impact upon life’s relationships. The obligation to life theory rests on the premise that relationship (life) precedes human agency (subject). As Brennan states, "...the ecosystem places, produces, and promotes individual things" (1988, p. 152). Our right to life extends from this obligation to all life’s relationships.
Rights to life, which is to say the right to meet our essential needs, are given to us by others who recognize their obligation to life. Our obligations to life come from the interconnections we have to all life, and are a part of both our evolutionary history and our psychic connections with nature (Shepard, 1982; Wilson, 1984).

The obligation to life ethic changes our societal orientation from anthropocentrism, with its focus on individual human rights, to an ecocentric orientation stressing our obligations to all layers of consideration including ecosystemic relationships. It is not wrong to fix moral standing with human beings. However, this conception represents an incomplete conception of standing. To limit moral standing to the boundaries of skin is to limit morality. The arbitrary placement of moral standing with items of interest denies the life forces present in species, communities, and ecosystems.

**Principle Of Sustainability**

The principle of sustainability stresses the importance of our obligations to future generations of all species and ecosystems. As the definition of sustainable development states, the word sustainable refers to an undetermined future (Robinson, et al, 1990). Alterations presently taking place in ecosystems around the globe are occurring at such a rapid rate that changes in relationships between all species and ecosystems are inevitable (Mckibben, 1989). The principle of sustainability would help guide our judgements to minimize and slow that change.
This would allow us the time required to gain wisdom concerning the relationships upon which we depend. We might then have the time to make the appropriate changes in our societal organization and technologies which would help us balance the impacts of our lives.

The principle of sustainability provides a forward projecting focus and an inclusive review of past knowledge and practice. As a result, the principle recognizes the importance of past generations in making decisions concerning our futures. Without a balanced perspective and the attempt to understanding our past we will be unable to make wise decisions concerning how we ought to live (Merchant, 1989).

Sustainability requires that we reorient our ways of knowing from being dominated by rationality. The world view consistent with sustainability would stress integration and relationality (Kealy, 1990; Bowers, 1993). This change involves discarding the conception of progress as economic accumulation (Goldsmith, 1989). As relationships form the basis of our metaphysical orientation, the notion of quality becomes primary while quantification assumes a secondary status. The principle of sustainability involves two general areas of consideration: minimum impact, and the combination of life and death.

**Minimum Impact Upon Relationships**

We must live in such a way as to exact a minimum impact upon other life and other relationships. Minimum impact involves more than compassion and sympathy for other forms of life, however.
The words compassion and sympathy imply nice things to do rather than required action. The minimization of impacts involves rules concerning habitat maintenance, the protection and maintenance of biodiversity, the concept of process harm, and the maintenance of beauty.

Habitat maintenance

The importance of maintaining habitat can not be overemphasized if we are to minimize the impact we will have upon other species and ecosystems (GTC, 1990a). Habitat is primarily altered by the growth of human energy and resource appropriations. Increased consumption and production in the industrialized nations along with increased human population growth in all nations causes this increased appropriation. Unsustainable agricultural and forestry practices, the need for firewood, and inappropriate technology are primary human causes of habitat alteration (Bodley, 1985; GTC, 1990a). In addition, our habit of eating high on the food chain in the U.S. makes inefficient use of habitat for food production (Rifkin and Howard, 1980; Robbins, 1987).

The words habitat alteration are used in place of the words habitat destruction. Alteration implies that relationships will continue in spite of our actions. Habitat will remain habitat, but will be altered to a state where it cannot support the present living relationships found there. Living relationships will continue, however. The principle of sustainability assumes that alterations in habitat are inevitable, but should be
minimized so that the inherent value of all present relationships can be maximized. Relationships will continue in spite of the decisions humans make. Our obligation to life places value in life's present relationships and recognizes our intellectual inadequacies in understanding the impacts of human actions on living systems. Conservative choices concerning habitat are indicated (C. Hall, et al, 1986).

As stated earlier, habitat alteration is a direct result of human appropriations of resources and energy and the application and residual effects of technology. If we seek to minimize habitat alteration we need to adopt policies, regulation, and behaviors which will:

1. reduce human appropriations of resources and energy by reducing human population and our consumption of resources and energy.

2. allow local residents access to local resources (land).

3. limit technology to that which promotes sustainability of presently non-human dominated ecological relationships.

4. create trading policies which consider the impact of trade upon all habitat.

Protection and maintenance of biodiversity

There are approximate a million and half living species that have been scientifically named. About one half of these species are insects while 41,000 are vertebrates. Estimates of presently unidentified species range from five to thirty million, most of which are insects (GTC, 1990a). We can only guess at the number of species which presently exist, what the extinction rate is, and what the extinction rate was before the rapid growth of human
population. It seems fair to state, however, that the growth of human population along with the rapid increase of consumption in industrialized nations has altered enough habitat that rapid changes are taking place in the distribution of other species (Ehrlich and Ehrlich, 1983; WCED, 1987).

Many reasons are offered for promoting and preserving biological diversity. Instrumental values are often stressed by stating that biological diversity provides a reservoir of chemical combinations for solving our health and medical problems (Ehrlich and Ehrlich, 1983). These combinations account for a substantial portion of the drugs sold in the U.S. today as well as 40 billion dollars in revenue (GTC, 1990a). The use of biodiversity as a genetic bank for agricultural production is also stressed (Miller, 1991). The breeding of crops with genetic material from wild plants often makes these crops more resistant to pests. Biodiversity is also instrumental to humans for the raw materials that it provides. Plant and animal products are used extensively in our homes, transportation, and business. In addition, communities dominated by monocultures tend to require more maintenance and resources than communities with more diversity (W. Berry, 1977; Chambers, et al, 1989).

The obligation to life theory includes all of these reasons to maintain biodiversity, but also includes the inherent value of the individual plants and animals, species, and ecosystems. The interconnection among all forms and systems of life requires that if we value our own lives, we must value all life. But, the
theory also provides for the fulfillment of needs for which other forms of life must be used. Relationships will be impacted as needs are filled and well being served. For this reason, we must distinguish between our wants and needs. As we become more adept at these distinctions, the conservative nature of the obligation to life theory and sustainable development will become apparent regarding the maintenance of biodiversity.

Akin to the preservation of biodiversity is the recognition and value of cultural diversity. The ecological model of development explained by Wilkinson (1973) stresses the importance of a society finding an ecological balance with the ecosystems that sustain them. One of the keys to understanding the biodiversity found in tropical areas is the knowledge and traditions of people indigenous to the tropics (S.H. Davis, 1977; GTC, 1990a). The understanding and wisdom of these people will prove to be critical to maintaining the ecological balance in these areas (Cowley, 1989). When the focus of development switches from economic growth to sustainable ecological balances, the tolerance and promotion of cultural diversity becomes obvious. The diversity of human culture and the knowledge of how to live in a sustainable fashion must not be ignored or destroyed (Bodley, 1985).

Another consideration concerning biodiversity involves biogenetic technology. If biological diversity were the only objective, humans should choose to create as many new species as possible. The principle of sustainability and the rule of
maintaining biodiversity requires that our impact upon biological and ecological diversity needs to be minimized. With relationships as the primary focal point and given our limited knowledge of complex relationships, we would be wise to minimize the amount of biological engineering we attempt (Miller, 1991; Rifkin, 1984).

**Process harm**

Process harm involves the minimization of impact upon the process of evolution. This rule strongly relates to the maintenance of habitat and biodiversity. There are two aspects of process harm that require mention. The first involves the appropriation of resources for human consumption, thereby limiting the resources available to other species as previously mentioned. This is a common feature of ecosystems as the numbers of different organisms rise and fall in cycles that depend upon the resources available to them. As humans appropriate increasing amounts of the earth’s nutrients and the sun’s energy, less is available for other species. The reduction of available nutrients and energy along with the alteration of habitat because of pollution reduces the life support system for many species. The result has been a rapidly increasing level of extinction of other species (Ehrlich and Ehrlich, 1983). Although the rate of extinction is only speculation and involves taxonomic questions, the extinction rate seems to be following an ecologically consistant progression that mirrors the geometric increase in human consumption (Catton, 1982).
Slowing the extinction rate requires that humans reduce domination of world ecosystems by lowering consumption patterns and reducing human growth rates. We must learn more about ecosystemic interrelationships and act in such a way that we limit our interference with ecological processes (Goldsmith, 1989). We must learn how we endanger other species and then change those behaviors. Another judgement is that we must coordinate local, regional and global efforts to protect habitat and migration areas. This also involves a coordinated effort to enforce the judgements that would protect these areas. Finally, trade pacts must include stipulations for the protection of both habitat and species preservation (Peng, 1990; Rifkin, 1991; Ritchie, 1990).

The second part of process harm involves the creation of new species. Genetic engineering must be carefully considered and regulated (Miller, 1991; Rifkin, 1984). Biotechnology has become big business. Instead of the use of biogenetic research and development to help ecosystems, other species, or the health and well being of humans; research and development efforts generally focus upon a profit or power motif (Hindmarsh, 1991; Miller, 1991). The important questions are: Who should benefit from this research? How should the research be regulated? and most importantly, Should we do this research in the first place?

During the Reagan and Bush administrations there was a 60 fold increase in the amount of U.S. spending on research and development for the purpose of biological warfare (Miller, 1991).
Humans have historically bound together for protection and power maximization, but the use of bioengineering for warfare is at best dangerous to all life relationships as we know them (Miller, 1991). Biotechnology is just a different expression of an older problem. For instance, a physicist named Robert Oppenheimer supported the creation of a hydrogen bomb because of its technological sweetness (Richards, 1987). This example provides a solid precedent for the need to combine ethics and scientific endeavors. The application of process harm would result in the decision that biotechnology for warfare cease immediately.

The problem with biotechnology for use in human health and agriculture is that there are huge limits to our ability to predict the impact of technology (Hindmarsh, 1991; Miller, 1991). Biogenetic engineering has the potential of having profound impacts upon ecosystems, biodiversity, and the evolutionary process. Our obligation to life requires that the application of biogenetic technology must only be applied under the principle of sustainability. This means that long term effects must be considered and testing of possible impacts must be performed on a long term and closely controlled fashion (Hindmarsh, 1991). If we cannot meet these criteria, the research should be discontinued. These constraints would make the application of biotechnology only for profit unfeasable. For this reason, these types of constraints are presently vigorously opposed by biogenetic and petrochemical lobbies in our legislative bodies (Hindmarsh, 1991).
Humans impact evolutionary processes through the appropriation of resources, habitat alteration, and biogenetic engineering. These factors greatly influence the sustainability of ecological relationships as we know them. Humans must have significantly less impact upon evolutionary process. We must also strive to understand evolution from a systematic perspective (Goldsmith, 1990a). Conservative choices that promote the diversity of life increase well being and promote the quality of life. Wisdom would dictate that we limit human intervention, protect habitat from alteration, and promote biodiversity.

Maintenance of beauty

The principle of sustainability also involves maintaining the beauty of life, natural sceneries, and relationships which are not dominated by human beings. For the past three centuries humans have valued the earth’s beauty and the beauty of other species. This value was accorded regardless of the utility those landscapes and life forms might serve to humans (Hargrove, 1989).

John Muir was one of the most well known and influential individuals stressing the beauty of landscapes for their own ends. It was the dispute between Muir and Pinchot which brought attention to the conflict between utilitarian use and scenic preservation in the Hetch Hetchy Valley (Nash, 1967). Muir sought preservation of the valley for its own beauty and saw spiritual qualities in the mountains.

"The white, rayless light of morning, seen when I was alone amid the peaks of the California Sierra, has always seemed to me the most telling of all the terrestrial manifestations of God." (1979, p. 153)
"More and more, in a place like this, we feel ourselves part of wild Nature, kin to everything." (1911, p. 243)

Although many do not recognize the spiritual qualities of scenery in the extremes described by Muir, there is historical recognition of the aesthetic value of wilderness. Aesthetic value has fared very poorly when competing with instrumental economic values, however (Hargrove, 1989). The principle of sustainability makes the preservation of beauty for its own sake a priority and suggests the need to improve our understanding and evaluation of quality.

**Combination Of Life And Death**

The principle of sustainability includes death as part of our conception of life. Life and death must be viewed as an interconnected and inseparable part of our ecological, biological, and spiritual purpose. Our obligation to life requires the realization that death and life are two interconnected parts of a whole. Life forms from the same place death takes place. As Muir stated,

"One is constantly reminded of the infinite lavishness and fertility of Nature - inexhaustible abundance amid what seems enormous waste...It is eternally flowing from use to use, beauty to yet higher beauty; and we soon cease to lament waste and death, and rather rejoice and exult in the imperishable, unspendable wealth of the universe, and faithfully watch and wait the reappearance of everything that melts and fades and dies about us, feeling sure that its next appearance will be better and more beautiful than the last." (1911, p. 242)

The Western conceptualization of death is strongly influenced by the individual focus of our morality and the linear orientation of our spirituality (L. White, 1967). With the
individual as the source of value and the primary consideration in ethical deliberations, the well being of each individual human dominates the Western world view. In accordance with this doctrine, we base much of our behavior on the pursuit of pleasure and the reduction of pain. It is assumed that death must be the ultimate pain. As a result, we separate life from death, and fail to include death as part of the relationship which is life.

The dissolution of the duality of life and death into a flow of relationship and change in biological state requires, as Muir suggests, a measure of faith. The essence of this faith is the belief in the endurance of life's relationships and the biological and spiritual connection of all life. It is faith that will allow the acceptance of death as a biological transition and a part of life.

**Principle Of Need**

The fulfillment of needs are included as a principle in this theory of obligation as a means of attending to the consequences of our actions. Needs are considered both at the individual, species, and community level. Human needs are inextricably tied to ecosystems and the communities which establish our norms. The consideration of the needs of species, human communities, and ecosystems are foreign to us because we are so accustomed to only considering individual human needs framed by the conception of human rights. It should be recognized that we still live in a world where the needs of white males hold primary consideration (Collard, 1989). The needs of
females, members of other races, and members of other species are only just beginning to figure seriously in our moral deliberations (Nash, 1989).

No simplistic model of human needs has been agreed upon, yet without the satisfaction of our needs, both as individuals and as communities, we are incomplete. Unfortunately, there is great confusion between the recognition of needs and the satisfaction of needs. It is my belief that human needs are classifiable, universal, and consistent over time. There is a dynamic mix of interacting needs, but the same needs are always present in all cultures and in all historical periods (Max-Neef, et al, 1989).

What changes across cultures, across historical periods, and ecological contexts is the way in which needs are satisfied (E. Hall, 1976; Max-Neef, et al, 1989). Changing ecological contexts or subjective individual decisions may change the way in which needs are satisfied, but the needs themselves remain constant. Our understanding of the needs of others, different species, and communities is at best limited. We should be careful of making presumptions about other species, but I suspect that the needs of different species and ecosystems are also classifiable and universal. Unfortunately, our investigations of needs have been limited by the individualistic and anthropocentric questions we have asked.

Theorists such as Maslow (1970) have placed great importance on non-material goods at higher levels in their hierarchial structure, and stressed material goods at lower levels. Maslow’s
model is culturally biased toward Western industrialized societies, with their economic systems focused upon material consumption. Because these societies stress having, the members of these societies will be more able to move on to fill the needs associated by Maslow with higher levels of fulfillment.

Another problem with needs theories is that many theories include security or safety as a primary human need. It is apparent, however, that humans willingly accept risk which seems to contradict the need for security (Weigel, 1989).

Perhaps the biggest problem with Maslow's theory is its individualistic orientation, however. Maslow believes that the need of belonging as lower on the hierarchy than individual self esteem or self actualization. Our social nature is not denied, but it is minimized as compared to the importance of the self-actualized individual.

Needs are often not included as an integral part of ethical decision making. Perhaps they are excluded because of the ambiguity involved, or because of our problems distinguishing between satisfiers and actual needs (Max-Neef, et al, 1989; Weigel, 1989). It is important to recognize, however, that the fulfillment of needs corresponds with wellbeing, and therefore is associated with good. In this way, the fulfillment of needs provides a direction for our actions and is part of a comprehensive theory of how we ought to act. A need is certainly a difficult thing to quantify while the relationship between needs at different levels of consideration leads to choices that
defy hierarchial organization. For this reason need fullfillment cannot stand alone as the sole determinant of ethical conduct. The principles of sustainability, balance, and democratic inclusion must provide direction for the choice of satisfiers used to fill needs. The combination of these principles allows for a directed pluralistic conception of our ends and means. This combination takes us from a theoretical philosophical model to applications of ethical conduct which are almost always political and involve power relationships.

The principle of need is supported by several rules which support its application. The rule of essential need helps us distinguish between wants and needs. As Mahatma Gandhi suggested, the earth has sufficient resources to fill everyone's needs, but will not be able to fill everyone's greed (Bhasin, 1993). The rule of synergic satisfaction provides guidelines for the efficient and effective satisfaction of essential needs. I will explain these rules in the remainder of this section.

**Essential Needs**

If we are to direct our lives toward well being through the fullfillment of needs, we must become much clearer on what those needs might be. Existential needs include having, doing, being, and interacting. Axiological categories of needs include subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom. The fullfillment of needs represents wellbeing, while failure to fill needs will result in a poverty. If there is extensive failure to fill need
the resulting poverties combine to create individual and societal pathologies (Harrington, 1984; Max-Neef, et al, 1989).

Needs should be conceived as a highly related and interactive system. We can describe needs in existential and axiological terms which are finite and consistent over cultures and time. Variations between cultures and among generations relate to the ways in which our needs are satisfied (Max-Neef, et al, 1989). The full consideration of our needs will allow a better conception of what ends our obligations should serve, and what is required of sustainable well being. This type of consideration will also provide a better perspective when considering the needs of living entities at the other layers of meaning.

Pathologies result from a productive system which doesn't satisfy the needs of its people (Harrington, 1984; Max-Neef, et al, 1989). We require change when poverty and the individual and societal pathologies which extend from these poverties become overwhelming (Wilkenson, 1973). Typically, change results because of reduced resources, increased consumption, increased negative effects of production, increased population, or any combination of these factors (Wilkenson, 1973). All of these factors impact wellbeing and need fullfillment.

Our political leaders provide us with a continual barrage of rhetoric about technological advancement and the importance of technology to our economy. These leaders fail to conceptualize solutions to problems that include existential factors other than
having, justice in other than economic terms, and alternatives that go beyond a technological fix. Our present visions of a future American society emphasize facets of our lives which could only partially satisfy our needs (Max-Neef, et al, 1989).

Distinction between needs, satisfiers, and economic goods is critical to the assessment required of ethical pluralism. As we move toward a more balanced and complete understanding of needs, the relationship between satisfiers and needs will become easier to determine. We presently live in a society in which human needs are not understood and addressed because of the emphasis placed upon satisfiers and economic goods (Fromm, 1976).

Needs are a part of biological, psychological, spiritual, and ecological relationships and relate to our ultimate purpose. Satisfiers are represented by various forms of being, having, doing, or interacting. Satisfiers are the structures through which our needs find expression. Economic goods are physical expressions or objects representing a culture's system of artifactual value (Max-Neef, et al, 1989). Both satisfiers and economic goods are determined by a society, but the needs they serve remain constant and finite.

In present Western society, economic goods and services are stressed to the point that the satisfiers involving "having" dominate our existence. In modern neoclassical economic theories human desires are believed to be infinite and insatiable (Wenz, 1988). This conception of needs as insatiable desires is pervasive, taken for granted, but incorrect. Rather than
concentrating upon our needs, our present economy focuses our attention on satisfiers and economic goods.

When we recognize the difference between our wants and needs, we are suggesting that satisfiers have taken on too much emphasis, and needs are not being filled. The result in the U.S. is often a pathology which Wachtel (1983) describes as the "poverty of affluence." If all existential needs are considered, the satisfiers related to "having" through the acquisition of economic goods are placed in a more balanced perspective. As we focus attention upon our existential and axiological needs, satisfiers and economic goods become subservient to wellbeing, rather than the opposite.

The principle of need demonstrates the inseparability of means and ends. This principle requires the recognition that the consequences that are most appropriate to consider are those which most closely coincide with wellbeing through the fulfillment of needs. We must adjust the satisfiers we choose to coincide with the obligations which will sustain life. To this end, the principle of need must include the needs of ecosystems, species, and humans as individuals and communities.

**Synergic Satisfiers**

There is an important association to be made between the fulfillment of needs and our moral obligations. The decisions we make concerning needs, and the means used to fill those needs cannot be separated. The fulfillment of our needs, therefore is more than the fulfillment of our hedonistic desires - more than
pleasure. The manner in which we fill our needs is critical to our obligations to life. In addition, our consideration of needs at all layers of meaning, and the manner in which we attempt to understand those needs is imperative. This manner involves our acceptance of ethical standards which affirms our position within the ecological and human community. We can not separate ends and means. We are obligated to fill our needs and the needs of all other layers of meaning in conjunction with our obligations to life. When we fill our needs we must also consider the commitment to sustain the ecological community from which life eminates.

The most efficient means of satisfying needs is through synergic satisfiers which are actions filling or contributing to the satisfaction of more than one need (Max-Neef, et al, 1989). For instance, breast feeding fills subsistence needs as well as needs for protection, affection and identity. Direct democracy fills participation needs as well as the needs for protection, understanding, identity, and freedom (Max-Neef, et al, 1989).

The imposition of satisfiers through authoritarian top/down sources are not efficient means of filling our needs (Burbules, 1986). For instance, food distribution programs provide subsistence, but fill few other needs. Welfare checks provide money for lodging and fill subsistence needs, but often have negative consequences upon the individual recipient and society in general. The arms race provides a deterrent for others and as a result fill our need for protection, but impairs the
satisfaction of subsistence, affection, participation, and freedom needs. Similarly, censorship protects us but impairs the satisfaction of the need for understanding, participation, leisure, creation, identity, and freedom (Max-Neef, et al, 1989).

Although our needs are universal and categorical, the means of filling our needs is socially constructed (E. Hall, 1976; Max-Neef, et al, 1989). Unless our decisions concerning the means of filling our needs are guided by our sense of obligation to life, our methods of filling our needs and our responses to our ecological context could have extremely detrimental impacts upon our lives.

If we only consider our obligations to life we would allow too little for ourselves. Ultimate compassion for life would suggest that we could have no negative impact upon other forms of life. The melding of our obligations at all levels of consideration and the consequential satisfaction of needs provides a balance allowing us to fill our ultimate purpose.

An obligation to life involves the satisfaction of essential needs, but also requires that we consider how those needs are filled. For instance, industrialized societies must find ways of ensuring that the employment which helps satisfy all of our existential needs can be accomplished without having excessive ecological costs because of emphasis upon GNP growth (Gleazer, 1993). Many of our problems come from the negative outcomes associated with false need satisfiers, and our failure to distinguish between satisfiers and needs (Max-Neef, et al, 1989).
These problems suggest the reason why the satisfaction of needs is in and of itself an inadequate measure for determining how we ought to live. We require a system of obligations to balance the process of satisfying our needs. This system also helps us distinguish between our wants and needs. We are obligated to choose synergic means of satisfying needs which are the most effective and efficient over the long term.

Needs involve different intensity levels. They may be strongly felt and urgent, or mildly desired and relative. They may require a major or minor outlay of energy or commitment to fill. But, the fulfillment of our needs is critical to our obligation to life, sustainable development, and the formulation of a sustainable society.

Without the good that comes from filling our needs, our societal organization is incomplete and inadequate. The layers of incommensurable meaning inherent to ethical pluralism makes the distinction of satisfiers, economic goods, and needs significant. We must choose and judge our actions not just by the principles of sustainability, balance, and democratic inclusion, but also the ends that are served.

**Principle Of Balance**

The principle of balance is critical to ethical pluralism as a method of reconciling the well being of all living entities and systems. Our obligations involve relationships and the consideration of ecological balance as well the consideration of individual needs (Mische, 1992). Balance requires that we are
open to all of the planes of meaning and relationship, and consider the most complete information possible when making our choices. As a result, the principle of balance also requires that we apply balance to the integration of knowledge. The principle of balance requires us to ask questions regarding relationships that consider more than just human value.

Balanced consideration and actions are required of ethical pluralism, but how are we to accomplish this daunting task? The incommensurable planes of meaning described in the obligation to life theory demand that we balance our actions regarding the complexity of our existence. The question of how we might balance our actions across these complex layers is difficult and not easily answered. We will require different types of norms and values from those required of an industrialized society with the goal of maximizing production. In addition, we will require a participatory form of decision making where attention to appropriate scale will allow the individual a voice and society a responsive answer.

The layers of ethical consideration and meaning are depicted by Figure 7. This configuration represents an ecocentric orientation from which human choices extend. Because the ecosystemic conception of community forms the base from which life eminates, the ecosystemic community is placed in a central and prominent position in the model. This position also reflects the belief that humans are not the focal point of existence. Humans should not be the only recipients of moral consideration.
It should be recognized that this model is not misanthropic. Ecocentrism suggests layers of value and consideration beyond humans, but doesn’t exclude humans. I believe that all layers must be considered, but not necessarily in an egalitarian fashion. This doesn’t mean, however, that humans will always receive more consideration than other species or ecosystems. Context is critical to our deliberations as needs are a dynamic and interactive system. The principle of balance doesn’t make the theory of obligation relativistic as there are specific guidelines to follow, but these principles and rules must be applied according to the context being considered. The inclusion of context allows for some flexibility in the application of the rules and principles which guide our actions.

LAYERS OF ETHICAL CONSIDERATION

INDIVIDUAL HUMAN MEMBER

HUMAN COMMUNITY
   a. FAMILY, LOCAL, BIOREGION, GLOBAL LEVELS OF ORGANIZATION
   B. MIXED COMMUNITIES

COMMUNITY AS ECOSYSTEM

INDIVIDUAL SPECIES

INDIVIDUAL MEMBERS OF SPECIES
   a. DOMESTIC INDIVIDUALS
   b. AUTONOMOUS INDIVIDUALS

Figure 7. The layers of ethical consideration and meaning.
The incommensurable layers of meaning extend outward from the ecosystemic community to include the human community and other species. On the outer parts of the model are the individuals which make up each species. It is important to note that the human community is tied to other species not only through its embeddedness in the ecosystem, but through the inclusion of domestic animals to form a mixed community (Midgley, 1992).

Our conceptions of how we ought to live shouldn't depend upon what is. However, our ethical considerations will only be appropriate if they correspond with our reality and are pragmatically applied to our existence. Human nature and the nature of ecosystems are a part of that reality. Ecology is a study of the systemic productive processes enabling the lives of individuals. This study assumes that the ecosystem is prior to the individual and essential to the productivity of that individual. (Holmes, 1987). However, this assumption involves a different conception of value, norms, and ethical rules.

There is a standard concern in ethical deliberation over instrumental versus intrinsic value. Instrumental value suggests that something is used as a means to an ends. Intrinsic value refers to something being an ends in and of itself (VanDeVeer and Pierce, 1986). The pluralistic conception of consideration and meaning which I describe lessens the distinction between ends and means into a more holistic approach to life. The distinction
between intrinsic and instrumental value takes on much less meaning.

Taylor (1986) includes the principle of self defense in his theory of respect for nature because of the recognition of the intrinsic value of life to the individual. The quest for life exhibited by living entities is a characteristic that demonstrates the intrinsic value of the individual. But, to suggest that individuals should not use other life or systems as a means to an end is totally out of touch with nature. All of us use others as instruments for our own well being. We are a system of intrinsically valuable individuals using the production of other intrinsically valued individuals.

As a result, we continually meld instrumental and intrinsic value. For example, humans must use other humans to receive communication which shapes their individual perception of reality. This communication is never neutral, but rich in cultural context (E. Hall, 1976). The sender is always encoding societal norms and expressing a personal version or interpretation of the values which evolve from those norms (Goffman, 1959). At this basic communicative level we use all of the individuals whom with we come in contact to our own ends.

The key to our consideration of value involves a change of focus from the individual to the relationship. These relationships involve four general areas: the biosphere, the technosphere, the sociosphere, and the sphere of spirituality (Mische, 1992). Both subject and object receive secondary
consideration to the centrality of relationship. Quality becomes the defining philosophical building block upon which a sustainable society might be built. It is prior to and encompasses both subject and object.

**Principle Of Democratic Inclusion**

The sustainable society must balance individual liberty, equality of opportunity, and solidarity. The individual and community components of humanness must be equally considered. A sustainable society does not extend from the Lockeian conception of autonomous individuals who give up some of their autonomy to form a society. Nor, does a sustainable society form by means of the Hobesian conception of a group of subordinate individuals banning together for the purpose of security. A sustainable society combines both the individual and community in a dynamic tension in which neither component is dominant, both are essential for the continuation of human life, and both must be equally considered (Etioni, 1988).

In this view, a sustainable society is not the composite of self-actualized individuals, nor a necessary burden placed upon individuals seeking to maximize utility for their own purposes. A sustainable society is based upon a system of shared norms in which the individual is immersed. The individual can not escape the influence of these norms by rational choice. In addition, the influence of others goes well beyond the conception of human community to include the ecosystemic sense of community. The relationship between the individual, human community, and land
community creates a shared sense of meaning and quality which colors the rationality we emphasize. In a sustainable society the emphasis is changed from rationality to relationship. Quality becomes the watchword while quantification takes a subservient position.

Humans beings must make choices concerning the qualities which should be stressed. These choices should extend from two characteristics of democracy which will allow for both active participation and selection among a full range of choices. The two rules underlying democratic inclusion are non-discrimination and non-repression of ideas and possibilities.

**Non-Discrimination**

All members of the human community must be allowed to freely participate in the choices which the society makes. A democratic inclusion of all societal members cannot exist in our present elitist and meritocratic framework, however. We require the freedom of participation and equality to voice our positions. Equality must not be qualified by hierarchy or merit (W. Ryan, 1981; Sanchez, 1976). Equality for all members of the human community means that the power relationships presently making some of us more equal than others must change to allow for non-discrimination (Harrington, 1984). Money, prestige, or position simply don’t make one person superior to another. The demographic changes presently occurring in the United States also have dramatic implications for the principle of democratic inclusion and the rule of non-discrimination (Gleazer, 1993).
Scale is critical to the active participation of individuals in the decisions made regarding sustainable development. In the U.S. this involves moving many more decisions to a level where participation makes sense. Motivational factors such as attention, relevance, competence, confidence, and satisfaction are important in discussion of scale (Keller, 1983). The dispersion of information which makes motivation and participation more conceivable cannot be overstated (Toffler, 1990).

The present top-down management style of decision making used in the United States must be balanced with bottom-up voice and participation (Glasser, 1990). The autocratic adversarial model of decision making through command and control doesn't allow for honest inclusion of voice and illustrates inequitable power relationships. This elite versus citizen model of decision making and management must be changed. Although the process of choice becomes more involved when a bottom-up and top-down approach are melded. The paternalistic conception of the elite manager making decisions on behalf of others must be modified (Glasser, 1990). This modification involves a change from the elitist and adversarial form of decision making we presently feature. We must move toward a process which allows for an even exchange of ideas and possibilities. This process must focus upon developing collaborative efforts and limit the coercion often associated with compliance (Katz and Lawyer, 1985).
Representative democracy must be changed to allow for equal opportunity of representation. The influence of interest groups upon representative decision making is distorting the quality of our democracy (Etzioni, 1991). The money/favors used to influence decisions must be limited. There needs to be a waiting period between public service and private employment in sectors in which there is a strong connection. The cost of election is dangerous to our democracy and provides the impetus for influence peddling, greed, and non-representative government found in the U.S. today (H. White, 1988).

**Non-Repression Of Ideas**

The rule of tolerance and allowing others a voice involves the exposure of people to different ideas and viewpoints. The community needs to allow all points of view with no individual being denied exposure to a viewpoint regardless of the position or belief that viewpoint represents. As the many conceptions of justice found at work in the United States would indicate, there are presently many culturally acceptable ways to consider what is equitable and ethical. Decisions concerning how needs will be filled does not require ideological conformity, however. Representative democracy should allow for the consideration of options and ideas regardless of the position taken. Although we cannot be neutral in our positions, we should attempt to be open and receptive to the voice of others.

Acceptance of non-neutral presentation of ideas involves the acceptance of our subjectivity in processing and sharing
information. Without the recognition of the indoctrinative nature of the communication we receive, we will continue with the illusion of objectivity (Ellul, 1965). In addition, the U.S. scientific community has a political and economic orientation not only affecting the reporting of results, but more importantly, the questions asked (Milbrath, 1989; Rifkin, 1991). Neutrality in science is impossible because of the norms and associated values of the educational and scientific establishment (Miller, 1991). As Hays states concerning the politics of science,

"...scientific institutions were, in fact, political institutions. Acceptable scientific knowledge was acceptable precisely because it was agreed on... Both the scientific establishment and the corporate world now sought to reduce the range of that input and gain control over the process of fashioning scientific consensus in order to shape public policy." (1987, p. 362)

Balanced scanning of viewpoints and ideas is also critical for our ability to handle the information which we will use in decisions concerning sustainable development. Because of the incredible amount of information and viewpoints which we could receive, there is a need to scan the range of possibilities (Etzioni, 1991). Without the scanning of different ideas, the concept of non-repression of ideas and viewpoints could render us dysfunctional as both individuals and a society (Etzioni, 1991).

Acceptance of the seeds of democracy's demise is another part of the non-repression of ideas. The principles of non-repression and non-discrimination involve the potential that individuals, out of their own volition, could choose to live in a repressive and discriminatory society. This statement points out
the importance and inevitability of power relationships within society. The web of power relationships within which we are embedded is neither good or bad, but part of our existence (Burbules, 1986; Toffler, 1990). The possibility of achieving a non-repressive and non-discriminatory society is impossible because of the influence of power and the non-neutral ways in which we receive information (Paranti, 1986). However, the acceptance of non-discrimination and non-repression rules makes democracy a dynamic form of organization in which liberty, equality, and solidarity might be balanced.

**Retributive Justice, Obligations, And Sustainability**

To this point, I have concentrated on our obligations regarding the distribution of societal benefits and burdens. The assumption is made that by meeting essential needs by means of the appropriate principles, we would be less inclined to require retributive justice. By stressing obligations in the formulation of societal norms, individual values, and formal rules and principles, we would become less conscious of the differences which divide us, and more concerned with the nurturing, care, and cooperation required of effective communities (Noddings, 1984). As a result, the consideration of security, control, and retribution becomes less critical. However, it is unrealistic to assume that the need for retributive justice would be totally eliminated. How would a sustainable society handle those individuals who do not meet the obligations to other members of society and to other layers of moral consideration?
There is no easy way to evaluate the criteria used to judge the extent, level, and amount of the restitution demanded of individuals not filling societal norms. Without question our present system of incarceration and retribution is ineffective at both reform and deterrence (Harrington, 1984). The present system is also not sustainable in regard to financial costs and reflects another expression of our failure to balance the inequities of power found in our society (Harrington, 1984; W. Ryan, 1981). Humans will resist and rebel against the coercive use of power and control (Burbules, 1986). Our country was founded upon this very resistance, yet we have implicitly and explicitly applied the coercive nature of power by means of limiting voice and distributing opportunity unfairly (Harrington, 1984; W. Ryan, 1981).

Retributive justice certainly must involve the weighing of the gravity or impact of the act in question and the culpability of the individuals and organizations involved. In addition, the deterence achieved by penalties and the possibility for reform must be considered. Unfortunately, the weighing of these factors is no easy matter.

Taylor (1986) states that the principle of restitutive justice be applied to reconcile the inequality of treatment between humans and non-humans after the principles of distributive justice and minimum wrong have been applied. This author suggests that two rules be applied regarding retributive justice. First, the extent of the compensation should be
proportional to the extent of the harm. Second, greater concern should be placed upon restitution to the community and ecosystems than to individuals regarding breeches of morality.

Leopold (1966) hinted at principle of retribution by stating,

"The mechanism or operation is same for any ethic: social approbation for right action, social disapproval for wrong action." (p. 263)

Unfortunately, when the analysis of power is applied to our present system of retributive justice, we get an ugly picture of racism, inequality, and the coercive application of power (Harrington, 1984; W. Ryan, 1981). Applying Leopold's (1966) operational ethic to our present society suggests our social approval of racism, sexism, nationalism, and speciesism through the application of meritocratic thinking and neoclassical economic assumptions.

We will never become a responsive society without recognizing our obligations to fill the needs of all of our citizens along with the needs of all non-human members of our community. Our obligations change the way we think about things like violence, drug use, and the vandilization in our communities. We will view them as pathologies of a society which isn't filling the needs of its citizens. We will view these issues as symptoms of disenfranchizement and a result of an ineffective meritocratic system of justice. These symptoms are also expressions of a society which fails to care for its children and lacks effective role models for them to follow

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A system of retributive justice based upon our obligations to life assumes that people are inherently good. Life is positive, to be enjoyed and celebrated. People join together into communities because of our social nature. Because people are basically good, the signs that people are not meeting their obligations are probably symptoms of deeper problems in our social organization. Changing behaviors to meet our obligations requires that we look beyond the symptoms and focus upon the deeper problems which impact our communities. The communication received by each individual from parents, family, community, and media play a critical role in the values and sense of obligation felt by that individual.

For instance, violence is pervasive in U.S. society. Should the retributive system focus upon the incarceration of those individuals who perpetrate violence, or should we focus upon the societal norms which foster violence? Would our society be better served by more jails and prison guards, or should we use resources to provide better day care, remove violence from television, and remove violence from the discipline children receive? I believe that over the long term it will be much more effective to provide strong support for the institutions which provide care and nurturance for our children. If our children learn that the society in which they live respects them enough to provide a clean and loving environment, they will learn self respect and the discipline required to meet their obligations.
In this way we can more effectively handle the violence and crime which pervades our society.

The lessons of violence learned by the children of Northern Ireland, the Middle East, and U.S. urban areas are very strong. These lessons will not be unlearned by incarceration and violent intervention. The only way of turning the cycle of violence around is by changing the system of justice which perpetuates the feelings of disrespect for self, other individuals, the communities in which we live, and the land community upon which we depend. Unfortunately, our societal norms guide our creation of value and help perpetuate an inegalitarian system of justice in which racism, sexism, nationalism, and speciesism are featured.

A system of retributive justice based upon the obligation to life theory must first observe the principle of sustainability with its judgements concerning minimum impact upon other life and relationships. Second, we require a retributive system because needs are not being filled. Unless we act to fill the essential needs of the members of our society, we will continue down a path that will require more and more effort and resources to maintain our present conceptions of justice. Members of our society won't accept the inegalitarian and coercive fashion in which they are treated, and will unfortunately respond with violence and hatred. We must equitably meet the needs of all members of our society to reduce the need for retribution.

We also require a retributive system because the norms
communicated to our children fail to teach them the discipline required for meeting our obligations. Care, respect, obligation requires discipline, yet this type of discipline is not being imparted to our children. Parents are not able to provide that discipline because of their exhaustive efforts to fill material desires. Communities fail to provide that discipline because efforts are primarily focused upon economic goals. Because our only unit of analysis, responsibility, and control is the individual, the community becomes ineffective as a means of imparting the required discipline. Television fails to communicate a sense of respect and care as its messages often reinforce violence and the myth of the American Dream through portrayals of exceptional individuals and meritocratic justice.

Retributive justice requires a balance of our obligations to both the individual and community involved. The costs of retribution to the individual who has failed to meet their obligations, and the cost of imposing that retribution to the community must be considered. The consideration of community would change the focus of our criminal justice system from emphasis upon individual rights to our obligations to all those involved. In this system it is possible that an individual's rights would be deemed of less importance than the harm done to community.

The consideration of other species and the land community must be seriously included in our penal system. If a corporation is guilty of endangering the health of communities beyond
acceptable standards of risk, all of those involved with that
corporation must be held accountable (Jackall, 1988). Corporate
leaders should be fined and incarcerated and all employees of the
corporation should be held accountable through payroll deductions
until penalties are filled. All those involved in bureaucracies
whether business or public must be held morally responsible for
their actions and the actions of their organizations.
On any day we can expect to read or see news concerning environmental devastation, AIDS, drugs and associated crime, the travesties of war and poverty around the globe, the threat of nuclear devastation, poverty and homelessness in our country, failures of our health care system, and increased trade in military weapons among the nations of the world. We could view any of these issues as significant problems requiring resolution and our undivided attention. It may be more instructive, however, to view these issues as symptoms of a more inclusive problem. These headlines are similar in that they illustrate human societies out of balance. Viewing these events as symptoms suggests that power maximizing societies have thrown communities all around the globe out of balance with the environment which sustains them.

The events also demonstrate conflicts within the web of power relations and the associated problems of finding justice within an increasingly troubled and interconnected world. Injustice is evident at all levels of societal organization from local communities to international relationships (Bookchin, 1980). Unfortunately, societal injustice and disharmony only represent part of the problem. Injustice and disequilibrium are also apparent between the present generation and the next, and between our species and others. Regardless of political
organization, industrialized production both in the East and West represents a disruptive force (Bahro, 1986; Horvat, 1982; Milbrath, 1989; Rifkin, 1991). Through this form of production, humans mobilize great energy sources and resources while creating extensive material well-being and military strength (Bodley, 1982; Kennedy, P., 1987). The extensive use of resources along with increased human population in industrialized nations results in extensive ecological disequilibrium and injustice, however (Ehrlich and Ehrlich, 1990; GTC, 1990a).

Sustainable development brings the concept of justice together with the conflicting power relationships which inevitably impinge on justice. Sustainable development requires us to question the ecological and societal disequilibrium that surrounds us, and consider future generations and other species. Our obligation to life provides an ethical framework for how we ought to live while sustainable development suggests the political nature of power relationships and the importance of including ecological relationships in our deliberations.

This chapter addresses the challenges to an educational organization that might help create change toward a sustainable society, and the arguments that challenge the philosophical conception of sustainable development. Many of the arguments presented in this chapter are philosophical and abstract in orientation, but the application of these philosophies is drenched in the realities of power relationships. The ecological model of development suggests that the events described in our
newspapers represent signs of ecological disequilibrium, and what Merchant (1989) suggests is an impending ecological revolution. This position is not commonly held by American political or educational leaders (Bowers, 1993; Holtz, et al, 1989; Paehlke, 1989). In addition, the philosophical assumptions described by this study are removed from the mainstream of modern philosophical thought (Hargrove, 1989; McKibben, 1989; Nash, 1989). This chapter is meant to answer some of these challenges and further explain the positions represented by this study.

The chapter begins with the significance of the debate over sustainable development's definition. The failure to reach consensus concerning sustainable development is viewed as a constructive force in the movement toward sustainable human societies. I then describe the challenge of liberal educational philosophy to the concept of education for sustainable development. The third challenge to education for sustainable development comes from the tenets of conservative educational philosophy. Because conservative educational philosophy plays an influential role in the direction of education in the U.S. (Holtz, et al, 1989), this philosophical orientation toward education is divided into traditional, economic, and fundamentalist approaches. I then briefly describe the position that views sustainable development as misanthrophy. The chapter concludes with a response to the challenges of monistic forms for ethical analysis.
Sustainable Development’s Problem with Definition

An ecological model for development assumes that change and development result from the motivating factors of poverty and disequilibrium (Wilkenson, 1973). This model uses ecological factors faced by human societies as the basis for change not the economic efficiency model’s assumption that development accrues from the application of capital and investment (Gillis, et al, 1987; Rostow, 1960). The political economy model of development adds another option to the conception of development by suggesting that the underdevelopment found in Third World nations is the product of institutional and power related factors existing between nations (Frank, 1978; Knox and Agnew, 1989). In effect, the political economy approach states that the material wealth of the industrialized North is accomplished by exploiting the nations generally found in the Southern hemisphere (Roxborough, 1979).

The vision of what a sustainable society might look like is certainly cloudy and up for debate (Redclift, 1987). The different versions of development demonstrate the various approaches to this vision and are deeply embedded in our different conceptions of justice (Weaver, et al, 1989). Neoclassical economic formulas for development are the most pervasive and influential around the globe (Gillis, et al, 1987; Hill, 1986). Many environmentalists find their vision of development and the path to sustainable societies grounded upon the assumptions of these economic efficiency models. A popular
example of this phenomenon is found in the environmentally oriented report of the World Commission on Economic Development (1987) entitled Our Common Future. This report states the importance of social and economic justice and suggests that justice will be accomplished by industrialized nations’ GNP growing at 3-4% annually to fuel the 5-6% growth GNP growth required in non-industrialized nations. Development based upon this type of economic efficiency model usually suggests that societies will progress through various stages toward modernity (Rostow, 1960).

An ecological model of development uses the criteria of energy flows and ecological equilibrium to evaluate societal direction. As opposed to the economic efficiency model’s temporal conception of the march to modernity, the ecological model involves both time and space in a cyclical conception of a society’s search for balance within the environment which sustains it (Wilkenson, 1973). The ecological model avoids the ethnocentric notion that societal progress follows a linear predictable path to modernity as suggested by Rostow (1960) and Marx (1919). In the place of modernity, the ecological model of development places ecological balance and societal harmony at the heart of societal progress (Bodley, 1988).

All societies are modern, regardless of their state of industrialization. The ecological model of development suggests that a society in equilibrium with the environment which sustains it will require no changes in its mode of production (Bodley,
1982). If disequilibrium becomes overwhelming, the members of the society will change their patterns of production to fill their needs (Wilkensen, 1973).

This description of models of development is important to the discussion of sustainable development because the conception of change and assumptions inherent to each of these models affects the questions we ask and the evaluations we make of societal problems and possible solutions. Development in the ecological model combines the needs of each member of society into a social ecology which grounds itself upon an ecological base. This web of relationships creates layers of meaning and forms the basis of evaluating human behavior.

The different conceptions of development and change illustrate the difficulty of capturing the complexities of ecological relationships with simplistic models. The orientation of development directly impacts what sustainable development might involve and how we might strive to achieve a sustainable society. Yet, consensus concerning sustainably oriented development is not imperative, desirable, or possible in anything but a academic setting stressing the theoretical (Sagoff, 1986). A sustainable human society would involve dynamic relationships with the environment which sustains it, regardless of definition. The chances of achieving definitional uniformity of a concept involving justice and power relationships is probably not even theoretically possible. But, striving for the unobtainable goal of sustainability brings us to question how we ought to organize
our lives.

The observation that sustainable development is an oxymoron provides less of an obstacle than a compelling reason for focusing upon this concept. A vision of an unobtainable, although desired future, opens the door for debate concerning the layers of individual, societal, and ecological relationships. This debate allows us to envision justice in terms including, yet beyond the narrow spheres of anthropocentric, meritocratic, libertarian, and neoclassical economic conceptions. It also allows us to move beyond our present emphasis upon the existential need of having to understand human nature as including being, doing, interacting, and having (Fromm 1976, Max-Neef, et al, 1989). The debate over the path to a sustainable society moves us toward a more communitarian approach to problem solving.

Having served on college curriculum committees it is easy to understand the reluctance of any college level educator to want to change a curricular structure or teaching process to focus upon sustainable development. Definitions are critical to teaching lines and the protection of academic disciplinary turf. Most traditional academics cower before the flexibility required of holistic studies and the diversification required of instruction in the applied ethics which sustainable development entails (Bok, 1990). In addition, the impossibility of definitional clarity conflicts with the scientific orientation of traditional academic inquiry found in North American colleges.

The different definitions of sustainable development demonstrate the pluralism existing in regard to our conceptions of justice (Wenz, 1988). A problem facing the U.S. today involves the number of individuals qualified to understand this debate. If we are to move away from an elitist, top-down form of societal organization and problem solving, everyone in our society must understand what is at stake. The movement toward a sustainable society is blocked both by those who blindly obey the tenets of economic efficiency, with all of its individualistic assumptions and by those who frame the path to a sustainable society only in economic terms. Directed education and other forms of communication are required to illuminate the extent of this blindness (Bowers, 1993; Orr, 1992). We need to share new conceptions of the balance between individual freedom, social equality, and the land-community. These new visions might allow for the meaningful creation of new relationships among nations, people within nations, present and future generations, and between humans and other species.

**Response To Liberal Educational Philosophy**

At a conference of environmental educators in 1991, Jickling recited a paper stating his resistance to education for sustainable development. At the heart of his argument was the assumption that knowledge and truth is of individual formation. The primacy of the autonomous creation of knowledge shines through Jickling’s descriptions of education’s purpose. In the
Greek philosophical tradition, Jickling suggests the importance of personal reflection while Greek meritocratic assumptions pervade Jickling's descriptions. It is suggested that if a child were to receive the objective truth about sustainable development, an intelligent child would be in the best position to decide the proper course of action. After sufficient reflection the individual will then understand the truth and will be capable of a moral life. In this tradition, each individual student is free to form their own conception of how they ought to live.

If a person is educated well, Jickling (1991) suggests they would have somehow avoided the conditioning of those who would train them to live in the proper fashion. The well educated individual would then merit positions of societal leadership. Once again, the Greek tradition lives on indelibly in the American way of both meritocratic orientation and depending upon one's own judgements of truth, right, and wrong. It should be remembered that the ancient Greek society from which this philosophy evolved featured slavery and patriarchy.

The enlightenment thinkers of the 17th and 18th centuries strengthened the focus upon the individual and provided a secularized and scientific orientation to the quest for truth and morality (Merchant, 1980). The philosophy of John Locke is present in Jickling's reckoning of knowledge and morality. The individual exists before society and is therefore the basis of all experience (Bellah, et al, 1985; Bowers, 1993). Because
individuals only want to maximize their own interests, the individual will seek out relationships with others that are in the best interest of that individual. The primacy of the individual is again asserted (Bellah, et al, 1985).

The instrumentalism of John Dewey (1902) coincides with this individualism in a relativistic version of humanistic tradition. It seems Americans believe we must form our opinions and values alone. Once conceived we hold that these convictions must be adhered to as our personal statement of the truth (De Tocqueville, 1956).

Habermas (1992) proposes a theory which directly conflicts with the individual conception of reality and truth so prevalent in Western philosophy. The concept of communicative rationality is used by Habermas to suggest the fallacy of individual philosophical consciousness. Habermas suggests that reason is based upon communication, or socially agreed upon standards for relationship and interaction. Because of the primacy of communication, Habermas believes that the social precedes consciousness.

Bowers (1993) extends the primacy of language and the social orientation of consciousness by examining the complexities of the relationships among education, culture, and ecology. This author examines the role of schools and universities in spreading a culture of individualism and consumption. The connections between language our present ways of knowing are inseparable. These connections allow insight into the changes required of education
for sustainable development.

The social focus of Habermas' (1992) communicative rationality and Bower's (1993) description of the education, culture, ecology relationship challenges the individual orientation of our traditional epistomology, ethics, and plans for social justice. This theory also lays the groundwork for a pluralistic conception of justice based upon incommensurable layers of meaning and relationships. Habermas believes that asocial behaviors and the lack of autonomous thinking in our society results from the ineffectiveness of our social institutions.

Our inability to achieve true autonomy results from the inability of our institutions to instill discipline and a well defined sense of communal belonging (Durkheim, 1973; Licona, 1988; Orr, 1992). Without a well defined sense of how to fit into the community, each individual lacks the understanding required of true autonomy and the individual creation of new meanings. The incommensurable layers of meaning and relationships extend from a conception of community as being more than just human beings (Leopold, 1966; Sagan, 1990). The importance of ecological realities in shaping our moral perceptions overshadows the current individual orientation of our moral conventions (Kekes, 1992; Orr, 1992).

The question of how we ought to live is of primary importance to the concept of sustainable development. Unfortunately, most of us are not ready to understand sustainable
development in anything but an individual context. We are conditioned to stress the individual above the society or the environment (Bowers, 1993; Devall, 1988). The individual orientation of utilitarianism is common in North American industrialized cultures (Rawls, 1971). In this orientation, each individual must maximize good according to their own self-interest. The composite of all individual goods will result in the most possible good for the society. Bellah, et al, (1985) describes an expressive individualism extending from this utilitarian position in a humanistic attempt to soften the egoism found in our society. Both utilitarian and expressive individualism fail to recognize obligations or relationships beyond the scope of the individual.

Jickling’s (1991) statements concerning sustainable development ooze with the individualistic orientation characteristic of North American societies. The questions of justice and power relations brought to the fore by considering sustainable development require us to go beyond the individual, however. Social and ecological obligations must be reckoned with outside the level of the individual. I will now turn to the issue of education for sustainable development and how our educational system might foster change toward ecological sustainability.

Do we need education about sustainable development, or is education for sustainable development required? I believe that we must educate for sustainable development if future generations
and other species are to have a any type of recognizable sustainable existence. I believe that the present requirements of communities in North America and around the globe demand that debate over the concepts of justice and power become part of our educational system. Education for sustainable development not only would help clarify that debate. This type of schooling would change the focus of the education process from an individual to a pluralistic conception of human obligation to the land-community.

The different versions of sustainable development represents an asset to the education process. To educate for sustainable development is to question how we might change as a society yet maintain our cultural identity while trying to maintain ecological equilibrium. Education for sustainable development brings the concepts of philosophy, justice, and power relations to the educational table.

The important concern is not about training versus education, but an overt versus covert conception of the education process. Let’s bring the reproductive process that occurs in our schools out in the open (Bowles and Gintis 1976; Everhart, 1983). Let’s discuss justice and ethics in an open educational forum (ASCD, 1988). Let’s bring the process, organization, and curricular content of education in line with attempts to create a sustainable society. Let’s openly discuss and educate for the balance required between individual and public interests (Kozol, 1991; Purpel, 1989). Let’s expose the schools as one of the most
power oriented institutions in our society (Giroux, 1981). Let’s face the fact that students in American educational institutions are among the most powerless people in our society (Purpel, 1989). Let’s expose schools as the most undemocratic institutions in our communities and a force in shaping the passivity which underlies our version of democracy (Apple, 1979; Purpel, 1989).

Those who would continue the naive and unrealistic conception of education as only the individual production of knowledge fail to fully recognize the impact of the community upon the individual (Bowers, 1993; Etzioni, 1991). Those educators who insist upon the primacy of the individual reinforce the egoistic, utilitarian, and libertarian orientation of our society. This orientation, in turn, parallels and justifies the meritocratic and economic efficiency theories which dominate our sense of justice. In effect, those who would educate about sustainable development endorse these meritocratic and economic efficiency models of justice which underlie our societal and ecological problems. These educators refuse to acknowledge the school as both a source of societal reproduction and production and seem afraid to accept teaching as part of the propaganda which immerses students in our culture (Ellul, 1965).

Our schools provide formal language and communicative skills which stress anthropomorphic, individualistic, and ethnocentric orientations (Bowers, 1993). As a result, educators often serve to empower the very economic system of production and conception
of justice which they often criticize (Burbules, 1986).

The conception of education for sustainable development which I envision is consistent with the ideas of Emile Durkheim (1973) concerning moral education. Durkheim believed that morality was a social phenomenon and stressed three elements in morality. Discipline is the first of these elements and is important in restricting the individual’s impulses, developing moral laws to regulate behavior, and subjecting the individual to that conception of law. The second element of morality is group attachment in which the individual is drawn into a needed relationship with others. Collective ideals attract us while discipline commands us, but the concept of morality and moral authority is social at its foundation. The third component of morality involves autonomy. Durkheim believed that an individual’s freedom followed the willing compliance to morality.

Sustainable development represents a concept which focuses on the problems of justice and power relationships facing all societies. As a result, education for sustainable development represents education in the questions of justice which face our communities. Because decisions concerning our approach to societal balance involve questioning the web of power relationships which maintain societal cohesion, education for sustainable development requires students to understand and question the power relationships that dominate their lives. There are many formulas of how to achieve sustainable development and many conceptions of what a sustainable society might look and
feel like. These different conceptions are an important part of the education for sustainable development. The debate over the different conceptions of a sustainable society might help change the focus of the education process from the autonomous individual to give communal relationships equal consideration.

The importance of seeking the ecological balance that forms the basis of sustainable development can't be stressed enough (Orr, 1992). Instead of seeking justice and solutions to environmental problems in the tenets of neoclassical economic theory with its emphasis on the individual and the market, we must redirect our goals toward communal equilibrium. As Leopold (1966) stated,

"If education does not teach us these things then what is education for?...The question is, does the educated citizen know he is only a cog in an ecological mechanism?...We shall never achieve harmony with land, any more than we shall achieve absolute justice of liberty for people. In these higher aspirations the important thing is not to achieve, but to strive." (1966, p. 210)

To think that we would ever have a consensus on what constitutes a sustainable society and what changes would be required to achieve harmony with the land is ludicrous. Education about sustainable development will not lead us past our individual orientations to social conceptions of ecological balance. Education for sustainable development may help ask questions which might allow us to strive for harmony and justice. Those questions would take us beyond our present individual constructs of knowledge and how we ought to live to engage in meaningful consideration of socially conceived obligation.

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Conservative Educational Philosophy And Sustainable Development

Criticism from conservative educators poses a formidable obstacle to the promotion of education for sustainable development and a sustainable society. Although I have characterized sustainable development as a conservative concept, the conservatism of sustainable development stems from actions that would lessen the impact of human life upon the ecosystems of the world. The conservatism of sustainability is much different from the focus of the present conservative educational agenda. The questions asked and the goals sought in education for sustainable development are very different than those of conservative educational philosophers. Essentially, education for sustainable development goes beyond the failures of present education in the United States to question if it is worthwhile to stress the study of concepts which brought us our present social and ecological problems.

I will now address the position of conservative educational philosophers regarding the present state of education. In effect, I will critique their position from the perspective of education for sustainable development. Educational conservatism is divided into three general areas: traditional conservatism, fundamental religious conservatism, and economically oriented conservatism. I begin with the traditional conservative educational philosophers including Bloom (1987), Hirsh (1987), and Adler, et al, (1982).
Traditional Educational Conservatism

The traditional educational reformers would require students to study the ideas of past intellectuals and would inculcate students with traditional cultural knowledge. Through the study of past thinkers our young will come to know and understand the traditions upon which their culture is based. All traditional educational reformers stress the freedom which comes from the understanding our historical intellectual past. If we understand the foundations of thought upon which our culture was built, we might be better equipped to continue our culture according to traditional ideals (Holtz, et al, 1989).

Bloom (1987) suggests that American education should concentrate on a moral center based upon rational intellectual inquiry. In this way, students will learn to reject the individualism, emotionalism, superstition, and myths which presently guide our actions. Bloom states,

"...by recognizing and accepting man's natural rights, men found a fundamental basis of unity and sameness. Class, race, religion, national origin or culture all disappear or become dim when bathed in the light of natural rights, which give men common interests and make them truly brothers." (1987, p. 27)

Bloom fails to provide any plan for how the reading of the classics might be used by all members of our society to achieve the unity and justice he describes. This author ignores societal devastation brought by poverty, the pervasive drug use, and the proliferation of armaments both at a societal and individual level. To think that reading the classics will do anything substantial to alleviate these problems is to demonstrate a lack
of regard for the ecological realities of our existence.

It should also be remembered that the classics were written by men about male dominated societies. How would a reading of the classics provide us with anything but a model of the patriarchy so important to the perpetuation of injustice in our society? We certainly can learn from the intellectual gifts from the past, but learning must be consistent to the ecological realities of the present. The writings of Plato, Aristotle, and Locke are intellectually engaging and should be sustained as a part of curricular content. However, Bloom's emphasis upon these works provides us with only a continuation of our present intellectual crisis (Orr, 1992).

I perceive a crisis of education in much different proportions than Bloom. We face the crisis of an intellectual background which helps to justify the ecological degradation we must now confront. How can we learn from past thinkers without going down the same anthropocentric, patriarchal, and unjust paths their intellectual works have cleared for us? Perhaps a more appropriate consideration of classic writers would include the writings of John Muir, Ernest Thomas Seton, George Perkins Marsh, Gifford Pinchot, John Burroughs, Mahatma Gandhi, Henry Salt, Henry David Thoreau, Albert Schweitzer, and Liberty Hyde Bailey.

Adler, et al, frames the traditional conservative agenda in the language of equality and democracy. This author states that "We are politically a classless society," (1982, p. 5) and
should also be educationally classless. Tracking must be therefore eliminated because it enhances a class society. This author stresses the acquisition of a common body of knowledge along with the development of reading, writing, and speaking skills as well as the ability of expression through the fine arts.

The conservatism of Adler, et al, (1982) fails because of the incomplete assessment of the web of power relationships found in schools and society. To state that we are a classless society is naive and dangerous. In The Paideia Proposal Adler stresses equality but fails to recognize the balance required between liberty, equality, and solidarity. Adler also stresses uniform content and suggests the importance of some facets of the hidden agenda by condemning tracking. However, this author fails to recognize the importance of school organization in maintaining present inequities. Content, process, and organization must be included in any meaningful educational reform. Adler calls for equality of educational opportunity, and stresses the traditional principles upon which U.S. democracy is founded. However, the anthropocentric, economic, and meritocratic assumptions which accompany these traditions are not considered. Similarly, the impact of power relationships upon education and equality are not considered. As a result, the stress Adler places upon equality is hollow and yet another example of emptiness found in educational curriculum reform rhetoric (Stevenson, 1993).
Hirsh (1987) presents another traditional conservative educational philosopher believing in a core of traditional knowledge. This author believes that students don't have enough basic information to understand their lives in the context of their cultural past. Hirsh believes that schools must provide students with enough cultural background so that they might make sense of present relationships. This author states that the most effective way of delivering a "shared system of information and association" (1987, p. 103) is by changing reading materials at the elementary and middle school levels to include more factual information and more cultural traditions. This change would develop in the children a cultural literacy upon which they could interpret their place in our culture.

All three of these conservative educational authors cling to the notion that the traditions which brought us our present conception of progress should be maintained and understood by our young. Education for sustainable development presents a different conception of conservatism. In this form of conservatism we would question our traditional values and goals over a much broader spectrum of possibilities. The anthropocentrism upon which conservative traditional educational philosophers base their assertions is rejected as incomplete by applying the principles of our obligations to life and the philosophical assumptions of a sustainable society.

The emphasis upon rationality is also rejected as the only way of knowing and understanding being replaced by an integrated
conception which includes, but doesn’t over-emphasize rationality (Kealy, 1990). The rationality stressed by traditional conservatives forms the basis of the scientific method, technological control, and the efficiency characteristic of our economic system (Ehrenfeld, 1981).

The traditions of which Bloom, Adler, and Hirsch write are those in which humans have been separated from nature. Sustainable development is concerned with the relationships which would form an ecological literacy which is more basic than both cultural and intellectual literacy (Bowers, 1993; Orr, 1992). The rationalized anthropocentrism which we call stewardship is exposed as incomplete because of its separation of humans from nature. We require a study of the ecological relationships of the past to inform the present and provide the practical wisdom upon which a sustainable society might be formed (Shepard, 1982).

In a sustainable society progress is re-envisioned in ecological terms. The notion of materialism and the irrepressable march of a superior civilization are replaced with the concepts of ecological harmony, sustainable resource consumption, and the development of an ecological consciousness. The conceptualization of time as being progressive is changed to a deep, more balanced, and inclusive view which includes cyclical time (Gould, 1987; Rifkin, 1987).

Education for a sustainable society is conservative, but concentrates on the practical as well as intellectual understanding of the relationships upon which our lives are
founded. This different type of conservatism would change the questions raised by educators allowing students to apply past wisdom concerning ecological relationships to present contexts (Stevenson, 1993). Creating a new understanding of the land community from past knowledge gives new meaning to conservatism. The emphasis upon sustainability suggests a more inclusive time frame and more inclusive subject matter.

The complexity of this subject matter requires yet defies holistic understanding. The wisdom sought by those who would educate for sustainable development requires that we go beyond the questions asked by traditional educational philosophers to understand the practical understanding of relationships. Community must be conceived in terms of ecological relationships and not just a group of individual humans. The educational crisis addressed by conservative educational thinkers has been incorrectly framed as a crisis of cultural and intellectual identity. Relationship not rationality forms the basis for the sustainable development and conservatism we require. Balance, interdependence, and ecological sustainability are the watchwords of a conservatism upon which sustainable cultures would depend.

**Economically Focused Educational Conservatism**

The economically oriented conservatives blame our hegemonic decline upon the failures of our educational system. Like the traditional conservative writers, economic conservatives seek a return to a single basic curriculum. The purpose of this curriculum is not cultural literacy based upon intellectual
traditions, however, but economic growth and the preparation of students for jobs that will strengthen the national economy (Holtz, et al., 1989). As Finn (1988) states,

"Americans have long recognized that the economic well being and even the national security of the United States are inextricably linked to the quality of teaching and learning in our educational system." (p. 3)

The supporters of the economic conservative agenda view the education of U.S. children as critical to the support required of U.S. business interests. If our educational system is in trouble, the fix can be found in the application of economic models of organization and management (Stevenson, 1993). The call to educational arms comes from the economic decline of the U.S. and rising achievement levels of students from other countries (National Commission on Excellence in Education, 1983). If other nations are producing students with higher achievement levels, and our economy is losing strength in international competition, there must be a causal relationship (Hlebowitsh, 1990). As "A Nation at Risk" begins (National Commission on Excellence in Education, 1983).

"Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world...the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people." (p. 368).

The prescription for change involves more rigorous standards; more focus on math, science, and technology; and more time spent in school. One of the primary goals of those endorsing the conservative economic model for education...
parental choice in selecting their child’s school. It is thought that choice will allow market forces and competition work to increase the efficiency and production of schools (Chubb and Moe, 1990).

The goals of the economic conservative model for education are at odds with the goals of education for sustainable development. The economic model assumes that economic growth is necessary and required for a good life (Gillis, et al, 1987; WCED, 1987). Sustainable development includes goals that are more inclusive than the material focus of economic efficiency. Existential needs of being, having, doing, and interacting are included in the sustainable development model, whereas the economic conservative assume the trickle down of well being resulting from economic growth and the accumulation of material possessions (Max-Neef, et al, 1989).

The economic conservative model assumes that competition is the hallmark of human nature and should be stressed in educational goals, organization, and evaluation (Holtz, et al, 1989). This model assumes that justice is served by a meritocratic system of distribution in which evaluation of achievement serves as an indicator of progress and excellence (W. Ryan, 1981). In this model summative types of evaluation are stressed. Those who compete well in school deserve their rewards because of their effort and superiority (Stevens and Wood, 1987).

The sustainable development model stresses a balance between cooperation and competition with distribution following a fair
shares approach (Ryan, W., 1981). Evaluation involves both formative and summative approaches, but the emphasis is upon formative types of evaluation that are more apt to enhance learning (Glasser, 1990; Kohn, 1986). Group identification and involvement is equally as important as the pursuit of individual meaning (Etzioni, 1991; Lickona, 1988). Wisdom is sought by balancing the needs of individual and community along with our obligations to other humans, future generations, and other species.

The economic conservative approach to education fails because it is based upon the incorrect assumptions of neo-classical efficiency and libertarian models of justice. These assumptions involve a narrow view of human nature and limited understanding of ecological relationships. This approach also fails because of the attempt to apply the power of the market to all situations. As Schumacher states,

"Needless to say, wealth, education, research, and many other things are needed for any civilization, but what is most needed today is a revision of the ends which these means are meant to serve. And this implies, above all else, the development of a life-style which accords to material things their proper, legitimate place, which is secondary and not primary." (1973, p. 294)

Education involves relationships which go well beyond the excessive application of competitive principles (Stevenson, 1993). In addition, the education process often defies quantification and rationalization. Education involves a process that more closely resembles art than science. Similarly, learning and wisdom often involve unquantifiable relationships.
Education should involve the pursuit of wisdom, but if we only measure education in economic terms, we will never become wise.

**Fundamental Religious Conservatism And Education For Sustainable Development**

The goals of conservative fundamental education involve the discipline and morality of the younger generation. Fundamental conservatives believe that the disintegration of U.S. moral fiber is directly related to the lack of accountability and discipline in U.S. schools (Holtz, et al, 1989). The ineffectiveness of authority figures in schools limits the effectiveness of our educational system. The discipline and authority which comes from God through religious affiliation is seen as the way to refocus our schools. Fundamentalists believe that schools should provide students with an education in religious history with religion an integral part of the educational curriculum. As Vitz (1989) suggests,

"Our teacher-training efforts should include education both in the nation’s religious history and in the constitutionally permissible ways of presenting religion in public schools." (p. 87)

Individual freedoms are stressed by fundamentalists with a particular emphasis on parental involvement in the educational decision making process. The family is stressed as the unit responsible for the moral growth of the child. As Schlafly (1989) states,

"We are paying for the schools, and we have a right to know everything that is being taught, and to know it before it is taught...Under our society and American constitutional law, the parent is the primary educator of the child." (p. 26)
Essential to fundamental conservatives is the removal of relativism and the secular definition of morality. Values and norms reflect the teaching of God and are not a function of individual creation. Because the Constitution allows for religious diversity, secularism, unreligion, and antireligion are tolerated. Fundamentalists believe that the use of stories from the Bible should be allowed because many of these stories involve values and moral character shared by all U.S. citizens (Bennett, 1991). The allowance of religious diversity does not mean, however, that religious tenets can be questioned. Once again, Schlafly (1989) states,

"The school has absolutely no right to teach the child that God did not create the world. This is an offense against the First Amendment rights of those who believe otherwise." (p27)

The fundamental conservatives would criticize education for sustainable development as the imposition of secular humanism. The stress that the obligation to life model of ethics places on community and values/norms would be criticized because this orientation would limit the individual religious freedoms and the freedom of parents to control the education process. In addition, the lack of distinction between instrumental and inherent value found in ecosystems and members of other species would not be accepted because humans were given dominion over nature by God (L. White, 1967). The responsibility of stewardship suggests the care and responsibility required of humans regarding the environment, but also the instrumental relationship between nature and human beings.
Our obligation to life does not suggest that religious views should not be included in schooling. Our ultimate purpose, both from a spiritual and biological perspective need to be included in the schools and education process. Education for sustainable development requires, however, that we move away from the anthropocentrism represented by dominion and stewardship. Inclusion of a spiritual component in education does not mean that specific religious tenets would be taught. Our general obligations require a good deal of faith in the relationships upon which we depend. Spirituality and faith enable us to handle our ignorance regarding the nature of these relationships.

The fundamental conservatives wish to have religious history included in public because of the importance of religion to the formation of the U.S. and the maintenance of the moral fiber of the U.S. people. Education for sustainable development would also include the history of religion in the schooling of American children. However, the interpretation of religious history would be told from the perspective of religions' impact upon the environment. History is rarely told from the perspective of the people who are not in power to control the interpretation of events and influences (Zinn, 1980). History told by those concerned with sustainable development should include all influences of science, religion, those in power, and those without power.

There is great variation in the influence of religious affiliation on human relationship with other species and
ecosystems. For instance, many Eastern religions have a much more compassionate relationship with nature than does Christianity (Wei-hsun Fu, 1990). L. White (1967) tells a history of Jews and Christianity from the perspective of environmental impact in "The Historic Roots of Our Ecologic Crisis." White considers Christianity the most anthropocentric of religions and a powerful factor in the exploitation and domination of nature by Western industrial cultures.

D.J. Hall (1985) believes that as Christians continue the tradition of conquering the world in the name of Christ, they are causing more problems than they are solving. This author suggests that Christians must come to grips with our impact upon nature and the need for Christianity to evolve away from a religion that has made a covenant with death. D.J. Hall believes that life is a mandate, or obligation which must be chosen. This author goes on to suggest that the eternality sought by Christians is part of a process involving quality that begins here on earth and must be sought in the present. D.J. Hall suggests that Christians must correct the application of their faith to celebrate life. He believes that many Christians live their lives with a loss of focus on that celebration.

The writings of L. White (1967) and D.J. Hall (1985) represent a different vision of Christianity and our ultimate spiritual purpose than authors expressing dominion positions (Limbaugh, 1992). These writer's beliefs are also much different than the versions of fundamental educational conservatives.
Education for sustainable development would include the influence of religion upon world view, relationships, and values. Within this context, all religions must be viewed as part of human/habitat relationship. Education for sustainable development would suggest that the faith extending from religious doctrine is important to our personal and communal wellbeing, but that faith must serve our obligations to life.

Fundamental Christian educators error by stressing the parents’ rights to control the schooling process. Although fundamentalists believe it is their right to control education of their child, they impact the education of all children with such emphasis. In education for sustainable development, parents are viewed as important in the transmission of values and norms, but are only part of that transmission process. Other social institutions besides the family are critical to the transmission of societal norms. Parents should certainly have a voice in the schooling process, but should not be able to dominate the content and process of teaching. Our communities should determine the norms transmitted to students. Parents are part of the community, but the community is more than the sum of its parts. A community is much more than an aggregate of parents.

The demands upon parents trying to maintain their position in a materially oriented society often takes away from the time and energy parents have for educating their children (Edelman, 1987; Harrington, 1984). In addition, the divorce rate in the U.S. today creates havoc with children and the assertion of
parental rights. Which set of parents should the schools listen to? The community and individual must be considered equally in making decisions concerning schooling. If we focus only upon the rights of parents, we will lose the balance between rights and obligations. As with most libertarian orientations, the focus of fundamentalist educators is anthropocentric and lacks the balance required of education which helps students to understand their obligations to life. The focus upon the rights of individual parents is simply an application of libertarian principles with a religious twist. An understanding of spirituality should be included in the education of U.S. children. However, the inclusion of spirituality must not be allowed to disregard the community of life and relationships to which we are obligated here, now, and in the future.

**Ethical Monism And The Pluralism Of Sustainable Development**

The concern of philosophers over the years has been to find one absolute, or best way in which we ought to live. This sunum bonnum, or ultimate rule for guiding our actions, reflects the pursuit of a clear and absolute answer to all ethical questions. If we determine one ultimate theory or principle describing how we ought to live, we are following a monistic ethical theory (Hunt, 1986; Wenz, 1988).

In contrast, ethical pluralism involves the recognition of the many different qualities which must be considered by humans when determining how they ought to live. A pluralist believes
that there is no one absolute which can be applied across the
field of these incommensurable qualities (Keekes, 1992; Stone,
C., 1987). However, this does not make pluralism equivalent to
relativism (Wenz, 1988). The definition of relativism typically
suggests that there are different interpretations of what is
ethical based upon context and the interpretation of each
individual. A pluralist believes that there is not one measure
of good through which we can analyze all relationships. In other
words, pleasure, duty, and the fulfillment of essential needs
are very different types of goods (Stone, C., 1987). All of
these goods must be considered and are morally important, but
these goods are not comparable because they involve very
different forms of relationships. There are no absolutes
regarding the importance or ranking of these goods (Kekes, 1992).

Our obligations to life represents a pluralistic theory in
which there is primacy given to the maintenance and sanctity of
life. The theory involves the holistic consideration of all
planes of meaning and value, however (Varner, 1991). This life
oriented philosophy seeks the inclusion of essential needs and our
obligations to fill those needs in a morally acceptable manner.
It applies an integrated or holistic way of knowing to the
ecological textures of our existence (Kealy, 1990). This ethic
provides a map for us to follow which might bring us physical and
psychic well-being, human sustainability, and unity with nature
and life's quality.
Atomistic Or Holistic Ethics

All ethical systems include the principle, or assumption of respect for individual humans (Ruggiero, 1984). The classical monistic forms of ethical justification have the distinction of being extremely anthropocentric. Value, moral agency, and moral considerability are determined by some significant factors of being human. Kant (1983) stressed rationality; Singer (1990) used sentience; Regan (1983) created a "subject of a life;" Mill (1988) stressed humanness. Although some of the more current philosophers have included members of other species, humans are never excluded from direct and primary consideration (Taylor, 1986; Warren, M., 1992; Wenz, 1988). The pluralism described by our obligation to life extends that assumption to include the human community as an object of respect, and even further to include the land community, of which humans are simply a part, as another object of respect. Because of the extension of respect, the welfare of humans is just one of many incommensurable goods.

An ecocentric value position doesn’t place humans at the center of the universe and is therefore very strange for us to consider. Each of us lives and interprets our life as the focal point of the environment which surrounds us (Goffman, 1959). We relate to our surroundings by means of our senses which are coordinated by our brains. As a result, this individual orientation to the surrounding environment should not be of surprise. We fail to conceive of ourselves as simply a part of a
larger organizational whole because of the limits of our brains and the arrogance of our egos which provides us the illusion of self-sufficiency.

We have also become separated from nature because of a system of social organization which demands that separation (Rifkin, 1991). As human numbers became too great for the resources available, the industrial revolution came to fruition. This revolution in social organization allowed dramatic increases in the utilization of energy and resources (Beniger, 1986; Catton, 1982; Cottrell, 1955; Wilkinson, 1973). Our realities became mechanized, specialized, and isolated (Merchant, 1980; Bowers, 1993). The industrial revolution, and the societal organization industrialization demanded, also provided a culture of alienation and competition which has increased the atomization initiated by our conception of morality (Bowers, 1993). As Shepard (1982) states "there are profound psychic dislocations at the root of modern society" (p. xii).

Fromm (1981) describes a similar lack of unity in the conception of well-being. This author states that the split between cognition or rationality, and affect or irrationality is not consistent with our realities. The division of thought and feeling, mind and body, man and nature is destructive to our well-being. The separation of humans from nature is an extension of our thought processes, but does not correspond to our existence. It is through atomization, the use of the human individual as the boundary of standing, that we extricate
ourselves from life's interrelationships and the possibility of well-being. The atomization of philosophy serves to remove us from a pluralistic ethic and holistic cosmology that would bring humans back to nature and fulfill our ultimate purpose, rather than continue our present mechanistic and alienated orientation.

As human population grows and consumption of resources in Western nations increases, a new crisis is evident. As with the industrial revolution, the motivation to change is born in poverty and conflict. The poverty referred to is not just one of physical or material hardship, but also a poverty of affluence (Wachtel, 1983). Lost is the meaning of life as we become focused upon material well being as the primary purpose for our efforts (Fromm, 1976; Stevenson, 1993).

We have lost sight of our ultimate purpose, the meaning of life, and the understanding of how we might come to gain insight into the meaning of our lives (Shepard, 1982; Skolimowski, 1981). Added to this loss of vision or focus is a loss of connection with the land which provides us life (Leopold, 1966). It is not until we have dramatically fouled and depleted the land that we realize that we must care for and nourish the entity which allows us life in the first place. As the ecosystems change toward relationships which will not support our consumption, we lack an ethic which values the non-sentient, non-rational entities upon which our lives depend. These entities along with the processes which they undertake are only meaningfully understood when considered holistically. Although we use ethical and linguistic
gymnastics trying to provide stewardship for the non-sentient and non-rational, we can not escape the pluralistic realities found in our moral dilemmas (Johnson, 1991; Stone, C., 1987). The veil of arrogance provided by our atomistic ethical systems allows us to separate ourselves from the natural world. This veil also creates in us a psychic alienation from the world that nurtures us (Shepard, 1982). Industrial society extends this alienation establishing a moral void which can only be filled by an integrated way of knowing and holistic/pluralistic ethic.

We are unable to see the world in anything but our own eyes. There is no neutral space in which we can walk to make our deliberations. Monistic ethical theories allows a simplistic view of our relationships based upon atomistic determinations. We say that only rational or sentient beings have moral standing, and all else should be considered as instrumental to those with that standing. Our self centeredness creates a self serving morality which provides justification to the atomistic approach to our lives.

We are individuals, yet members of communities. If there were no biological union of cells there would be no individual. The ecological, biological, and social aspects of life are prior and essential to the individual. The holistic ethic described by our obligation to life creates a framework for considering how we might live in a fashion that would move us back toward an integration of self and land community. In addition, this holistic ethic is accompanied by an integrated way of knowing and
sense of purpose.

The obligation to life theory combines obligation, ideals, and consequences with the equal consideration of individual and community to provide planes of meaning and a texture to morality (Etzioni, 1988; Keekes, 1992; C. Stone, 1987). These moral planes more closely resemble the nature of the moral dilemmas which face us as we consider how we ought to live.

Classical ethics is atomistic in its approach to value, consideration, and agency. The deontological emphasis upon rationality as the determinate of moral standing is an example of this atomistic approach (Kant, 1983; Rawls, 1971). It is the rationality of the individual which provides moral agency. Similarly the egoism which is so common in U.S. society suggests that each individual ought to act in such a fashion which bring about the most favorable consequences to them. Once again the focus is upon the individual. Utilitarian theory allows for a more inclusive conception of morality as the greatest good for the great number suggests (Mill, 1988). Yet, in application utilitarianism follows atomistic principles in the calculation of the greatest good (Rawls, 1971). If each individual is better off, then the composite of those individuals must equal the greatest good. Often in the U.S., utilitarian ethics are combined with neo-classical economic principles and accounting to quantify the good (Daly and Cobb, 1989). We only have to refer to the "pork barrel" decisions made by our elected officials to recognize that egoism is alive and well in the name of

Other problems are apparent with utilitarian ethics which limit the theory’s effectiveness as a non-atomistic approach. The ineffectiveness of incomplete accounting systems become a problem (Cobb and Daly, 1989). In addition, utilitarianism’s problem with averaging and the quantification of qualitative goods is well described (Attfield, 1983; Wenz, 1988). These problems illustrate that in the application of utilitarianism we are not to be able to escape the atomistic orientation of traditional moral theory. Similarly, the animal rights movement offers us little more than a variation to our present atomistic conceptions of morality.

Our obligation to life represents a pluralistic approach that includes the consideration of individuals, but also features planes of moral meaning and standing of which humans are not the sole consideration. It represents an ethic which most closely resembles the complexity of our moral lives. Without a holistic approach to ethics, we are destined to continue believing that we are morally justified to an existence in which we are the judge, jury, executioner, and victim.

**Sustainable Development As Misanthropy**

Our vision is obscured by evaluating life’s processes through our limited perceptions. We are incapable of understanding the reality of members of other species, and barely capable of understanding each other. It is not inconsistent with the orientation of our industrialized society that a sustainable
society might be considered misanthropic. We have been programmed to view humans as the center of all things. We use atomistic morality to consider right and wrong from the perspective of individual humans with standing. From this limited perspective the conception of sustainable development and a sustainable society are probably misanthropic.

Ecocentrism places the totality of existence at the center of our consideration (DeVall, 1988). Humans are no longer the core of meaning and value. We still receive consideration, but we are no longer the only, or primary focus of that consideration. Ecocentrism allows us a perspective which most closely matches the reality of our lives and the plurality found in our considerations of how we ought to live (C. Stone, 1987). It is also a perspective which exposes the ignorance, psychic alienation, and distress which accompanies our present societal organization (Arney, 1991; Shepard, 1982). If humans have a fear of the unknown, ecocentrism provides a source of tremendous fear.

Over the long term, the concept of a sustainable society and the obligation to life is not misanthropic. What is good for nourishing life on earth is also in the best interests of humans. It will be impossible for us to maintain our present levels of consumption/population growth and our present system of justice without being misanthropic, however (Catton, 1982). The important question to ask is not whether the norms, values, and principles of an obligation to life are misanthropic, but why classical atomistic moral theories are so myopic?
Sustainable Development As An Extension Of Western Ideology

Concerns about sustainable development being but another extension of Western ideology are justified and of great importance (Rees, 1990). Some writers have been appalled by the number of corporations and political leaders who jumped at the phrase sustainable development (Lohmann, 1990). Other writers suggest that the phrase has been twisted by business interests and provided a smokescreen of politically correct rhetoric for business as usual (Ekins, 1989; Rees, 1990). The leaders of Third World countries often view sustainable development as the imposition of Western solutions to Western problems on the potential economic development in the Third World (Hamilton, 1990; Hancock, 1989; Pimenta, 1987).

In addition, educators are concerned by the strong value positions represented by sustainable development (Jickling, 1991). Education has become the playing field upon which political and economic controversies are examined (Bowles and Gintis, 1976). In the remainder of this chapter I will examine the detractors of sustainable development from the perspective of conflict in global economic goals. I then turn to the political conflicts which are raised by education for sustainable development.

Global Conflicts And Sustainable Development

Definitions play a critical role in the issue of sustainable development. Early efforts to define sustainable development
were framed in terms of contradictions (Redclift, 1987) and can be best described as weak. At the same time, the World Commission on Environment and Development (WCED) used the phase with strong focus upon economic growth (WCED, 1987). As mentioned earlier, industrialization and economic growth of the Third World are viewed by the WCED as required for improving the well-being of the people of nonindustrialized states. The WCED's plan is not as well articulated a Rostow's (1960) plan for modernity, but the assumptions are the same. The Commission states that these rates are sustainable if presently industrialized countries become more efficient, more service oriented, and engage in activities that involve less intensive use of energy and resources.

The members of the WCED are probably committed to the well being of others and concerned with the deprivation of poverty. But, they suggest a cure that is a solid dose of the treatment which allowed the exploitation of people and the environment in the first place (Lohmann, 1990). The skepticism of those in the Third World communities and the environmental community is understandable. The application of Fordism and Taylorism to the Third World has been started in an exploitive and devastating fashion (Lipietz, 1987). The focus upon economic growth suggested by the WCED twists the concept of ecological limits and ignores the history of those people not found in the core of industrialized nations (Stavrianos, 1981; Wolf, 1982; Zinn, 1980).
It is difficult to ignore the colonialism that is the history of North/South relationships (Stavrianos, 1981; Wolf, 1982). It is also difficult to ignore the neocolonialism which maintains national core, periphery, and semi-pheriphery status through political, military, and economic relationships (Knox and Agnew, 1989). In light of global history and present political/economic relationships, it is foolish to envision Western industrialized nations helping other nations without first considering how those actions might be of benefit to the West (Hancock, 1989; Raghavan, 1990).

In short, the concern over sustainable development as defined by corporate/political interests is well founded (Benavides, 1992; Sachs, 1990). When sustainable development is dominated by an economic agenda, the concept becomes another form of neocolonialism (Ritchie, 1990). The skepticism of leaders from the non-industrialized world is exactly to the point. Industrialized nations have used the resources of Third World countries to create an economy which stresses increasing production and consumption (Agnew, 1987; Knox and Agnew, 1989). The poverty and environmental degradation found in Third World countries is considered by many the result of this exploitation by industrialized nations and their agents within the Third World. As Costa (1987) succinctly states,

"...today's poor environmental conditions stem from their (industrialized nations) high standards of consumption and their carelessness, in the last decades, in what concerns pollution problems. Consequently, it is the developed countries themselves which must pay the price of cleaning the environment." (p. 200)
Leaders in other nations recognize the economic, military, and communicative power of Western nations. These leaders believe that they should not be limited by protecting the environment and biodiversity when they haven't yet received the material benefits which accrue with increased production. For the U.S. to talk of sustainable development is like parents who tell their child, "Do as we say, not as we do."

Why shouldn't non-industrialized nations exploit the resources within their boundaries? The rise in GNP will eventually trickle down and pollution problems will be solved through advancing technology. Why shouldn't all countries be afforded the possibility of the material well being of the West? The simple answer is that the principles followed by Henry Ford and Fredrick Taylor (Beninger, 1986) are not possible ecologically (Catton, 1982). If all the people of the world consumed at the rate found in the U.S. the context of life would change dramatically. Energy supplies would diminish rapidly, pollution would increase dramatically, climate would probably change, and the appropriations of resources needed to keep growing human population alive and consuming would destroy the habitat of most other forms of life as we presently know them (Catton, 1982; Mckibben, 1989; Vitousek, et al, 1986).

The more complex answer to the question raised by the leaders of Third World nations suggests a poverty of affluence found in industrialized nations and especially the United States (Fromm, 1976; Wachtel, 1983). Material well being is an
important factor of existence, but greatly over-emphasized by our society. This over-emphasis comes at the cost of psychic alienation and our inability to meet our ultimate biological and spiritual purpose (Skolimowski, 1981).

Making economic growth the cornerstone of sustainable development is nothing more than a smokescreen for further exploitation and environmental degradation. Defined in this way sustainable development has little to do with the needs of the people of Third World nations. Economic growth models for sustainable development are essentially the transference of knowledge concerning development and the environment. If followed these models represent the best interests of the industrialized world (Benavides, 1992; Ginsburg, et al, 1989).

This does not mean that the concept of sustainable development is not useful or worthy of consideration. If defined in ecological rather than economic terms, sustainable development provides the prospect of promoting life and an understanding of our obligations regarding life. If applied in terms of justice and the sociology of power relationships, sustainable development can help create an enduring history of care and nurturing. In this way, sustainable development might fill the needs of humans while meeting our obligations to other species and future generations of life. As Fromm (1969) states,

"...ideas can become powerful forces, but only to the extent to which they are answers to specific human needs prominent in a given social character." (p. 308)
The definition of sustainable development followed by this study suggests a political agenda that stresses individual freedoms and participation in political, economic, and social decisions. Individual liberty and autonomy are balanced with equality and solidarity in this explanation of a sustainable society, however. As a result, the individual's freedom and obligation to actively participate in the decision making process becomes critical to the quality of our social existence (Harrington, 1989; Reich, 1991).

The descriptions of sustainable development and our obligations to life are therefore incompatible with authoritarian and elitist forms of governance. However, this is not to suggest that the economy of a nation needs to be capitalistic in nature. The dualistic perspective of communism versus capitalistic democracies is ill conceived and a product of Western military/industrial interests and political leaders who used the fear of the "red menace" to generate power and wealth (Horvat, 1982; Parenti, 1986).

More appropriately conceived, the nations of the world might be seen as including both socialistic and capitalistic tendencies (Halal, 1989). For instance, the system of social welfare found in the U.S. represents a mix of socialism in a capitalistic economy (Harrington, 1989). The "welfare state" is often criticized by those who would reduce the size and role of government by allowing the power of competition through the market place to solve social problems (Friedman and Friedman,
The socialism found in the U.S. seems to serve two major purposes. First, the insufficient funds and inefficient use of funds available seem to provide a welfare system that is purposely destined to failure. This ineffective organization creates a system which justifies the meritocratic sense of justice which so strongly influences U.S. policy. Second, the welfare state along with military preparedness in times of peace serve to lessen the negative impact of capitalism's down cycles (Agnew, 1987; Ginsburg, et al, 1989; Kennedy, P., 1987).

All governments are in the business of establishing the rules and playing field for their economy (Corbridge, 1986). This is one reason for difficulty in distinguishing political from economic organization (Smith, H., 1988). It should be stressed that democracy is not only found in capitalistic societies and is not synonymous with capitalism (Harrington, 1989; Horvat, 1982). Although this study stresses the principles of democratic inclusion, the balance chosen between socialism and capitalism found in each nation should be left to the discretion of the people of that nation.

Politics And Education For Sustainable Development

Several respondents to the survey on teacher preparation for sustainable development stated their concern over being asked questions that they felt had more to do with politics than education. One respondent felt strongly enough about the political nature of the survey to state, "This survey will probably be used to support a narrow politically oriented
agenda." These comments demonstrate the political nature not just of education for sustainable development, but for all education. To believe that schools and universities are not political in their organization and function, is to be overly idealistic or naive (Bok, 1990). Consensus is rare in education. Conflict over content, process, and organization fills the educational agenda (Purpel, 1989).

The schooling process is political because of the dramatic impact possible from organized communication in a controlled environment (Bowers, 1993; Orr, 1992; Toffler, 1990). Everything that occurs in colleges and schools involves a web of power relationships which determine the nature of the process of education (Burbules, 1986). Debates over the nature, direction and effectiveness of education tend to diffuse the opposition and resentment of those who are displeased with the distribution of justice within society. Education becomes a battlefield upon which societal discontent and resentment is fought (Bowles and Gintis, 1976).

An example of the importance of politics in education is the application of market forces in the schooling process (Chubb and Moe, 1990). Not only is the issue of choice in public education strongly political, it has dramatic ethical overtones. When the rhetoric of choice is examined and removed, the application of choice in public education can be used to serve a social Darwinist agenda (Kozol, 1992). The sale of news/advertising television packages to public schools clearly illustrates
corporate America's understanding of the power of organized communication in a controlled environment. Thirty second advertisements which play in public school news segments are sold at two times the cost of advertising on prime time network news programming (Kozol, 1992).

The agenda of educational reform in the U.S. represents another example of the influence of those in power to control the questions asked and the solutions sought (Purpel, 1989). As Ginsburg, et al, (1989) suggests,

"...economic elites and their allies are likely to use their control over the means of production and distribution of knowledge, their greater power with respect to the state policy-making and policing, and their dominant position in the economy to shape the focus of the rhetoric and action of educational reform.(p. 31)

The examination of the reform literature of the past decade provide by this study illustrates the validity of Ginsburg's, et al, (1989) conclusion. Questions relating to power and control were rarely addressed (Purpel, 1989; Kozol, 1991). The reforms were almost exclusively written by those in power and those with a vested interest in seeing the distribution of power and justice remain constant (Gibboney, 1991). Rarely, were questions asked or reforms focused upon the assumptions of the present meritocratic and economically oriented system of justice found in the United States.

Education in the U.S. represents a political application of philosophical orientations toward individualism, technological solutions, and the tenets of neoclassical economic theory (Bowers, 1993; Gibboney, 1991). But, it should be stressed that
there are no value free or power exempt facets of the education process (Giroux, 1981). Education for sustainable development is also value and power related. The political orientations upon which sustainable development depend are not narrowly oriented, however.

As conflicts at local, national, and global levels of organization increase; it will become increasingly apparent that the equity questions raised by sustainable development must be addressed. It is my position that norms and values, the assumptions of economic theory, and power relations should be part of an educational dialogue involving all members of society.

It should be stressed that the consideration of power and the evaluation of justice in our society is not a high priority for educators in U.S. society. In a national study of teacher educators and preservice teachers conducted by Su (1992) both groups of respondents picked education in "basic skills" as the most important goal priority of schooling. Only a small percentage of students and teachers choose restructuring society around an equity agenda as the most important priority. Su's investigation found that the liberal view of schooling is the most predominant in both students and teacher educators.

It is not surprising that teacher education follows the tenets of progressive educational philosophy and stresses the importance of basic skills. The responses to a survey of experts in areas related to sustainable development as a part of this study demonstrate that there are few schools of education with an
agenda focused upon restructuring society and power relationships. Radical educational theorists are notorious for lack of pragmatic applications for their analysis (Bowers, 1993). The possibility of doing something constructive with radical educational analysis is unfortunately a glaring weakness of this typically anthropocentrically oriented educational philosophy (Bowers, 1993).

This study represents a model which would direct a dialogue concerning the assumptions upon which both justice and education in the U.S. depends. The study does not represent a blueprint for education, but rather, an example of education which would take us beyond our present narrowly focused anthropocentrism and egoism. Education for sustainable development with the purpose of educating citizens for life in a sustainable society encompasses many of the liberal and conservative educational points of emphasis. "Basic skills" in educational jargon essentially involves communicative and numerical literacy. Education for sustainable development includes communicative literacy as essential for democratic dialogue and numerical literacy as an essential component of understanding debates that involve quantification.

Education for sustainable development stresses ecological literacy. The dwindling lack of ecosystemic understanding by people in the U.S. is documented (Arcury and Johnson, 1986) and lamented (Berry, W., 1977; Leopold, 1966). Unfortunately, the impact of the people of the U.S. upon ecosystems is dramatically
increasing. Ecological literacy and holistic understanding of how human communities fit within the land community is imperative.

Education for sustainable development also includes the liberal or progressive agenda. Democratic inclusion is often stressed by the progressives as a critical component of our educational system (Dewey, 1902). Similarly, democratic dialogue is one of the guiding principles of the obligation to life philosophy used in this study to justify education for sustainable development. Democracy is viewed as a means of sharing power and making representative decision makers accountable for their decision (Lappe, 1990). The impact and primacy of societal norms in creating the rationality of the individual (Bowers, 1993; Etzioni, 1991) is stressed by education for sustainable development. The passivity of U.S. citizens is an example of the impact of an educational system which discourages active participation (Bowles and Gintis, 1976).

In progressive educational philosophy the emphasis is upon the individual as the source of creation and production. In an obligation to life philosophy, the individual and community are considered equally. The role of discipline and group affiliation are recognized as important factors in the autonomy and creative nature of the individual (Durkheim, 1973; Habermas 1992). The individual’s autonomy is always balanced by group affiliation and obligations to others.
Education for sustainable development involves a curriculum, teaching process, and system of organization which recognizes the political nature of education. The value laden process of learning is nothing more than the extension of the value processing inherent to the communication between people. As Lappe (1990) states,

"Classrooms must become an environment for rethinking power - learning that no one is completely powerless, that we need skills to wield power effectively, that power is not a dirty word but essential to act on our values... Seeing education as an ongoing dialogue about core social values makes it possible to probe underlying assumptions, allowing us to examine an inherited worldview." (p. 161)
Appendix Seven
Schools And Sustainable Development

Schools should prepare individuals for lives in the ecological and social systems of which they are a part. Contrary to the reform literature, the U.S. system of schooling is extremely effective. Students graduate from our schools with a passive acceptance of the inequity which surrounds them and an excellent understanding of the meritocratic system of justice which dominates our society (Giroux, 1981). These characteristics of our societal organization are the characteristics stressed by our system of schooling (Bowles and Gintis, 1976).

Over the years the names of educational programs have changed, but educational tinkering has been the rule (Cuban, 1990; Gibboney, 1991; Goodlad, 1990a). The basic assumptions of these programs concerning justice, knowledge, and the relationship between humans and other forms of life don't change (Bowers, 1993). The history of schooling in the U.S. demonstrates that our educational system has changed very little in the past one hundred years (Nasaw; 1979; Tyack and Hansot, 1982), and has remained as a bastion of societal reproduction (Apple, 1979, 1993; Bowles and Gintis, 1976; Giroux, 1981).

This study suggests that changes in the schooling process are required if we are to become a sustainable society. The growing pathologies found in our society and the degradation of the environment we inhabit represent signals that our societal
organization, and the education process which is part of that organization must change. In other words, the possibility of educational change is contingent upon the ecological and social contexts which make that change relevant. As Wilkinson (1973) suggests, change in the societal organization of production is a result of poverty, not wealth. The motivation for educational change comes from ecological contexts in which conflicts, pathologies, and poverties provide impetus.

This chapter provides a description of some of the changes in education that would help us become a sustainable society. Because teacher preparation should match the purposes of schooling, this chapter provides meaning for the changes that will be suggested for teacher preparation. What skills should students have? What knowledge should they have and how should that knowledge be organized? What values need to be cultivated for life in a sustainable society? What norms should be stressed by schools if sustainable development is the objective? The answers to these questions provide the changes required of U.S. schooling. The descriptions of how schools might be organized in a sustainable society brings the changes in teacher preparation for sustainable development into perspective. Through these descriptions it should be emphasized that schools are both institutions of societal production and reproduction (Giroux, 1981).

I make the assumption that schools play an active role in imparting societal norms to our young people and in the process
of language development (Bowers, 1993). This dynamic enculturation process involves both formal and informal forms of communication received by people throughout their lives. It is through the communicative process of enculturation that individuals learn the norms accepted by society (Etzioni, 1991; Meisner, 1993). These norms include cognitive, emotive, and behavioral aspects of the individual’s relationship with the community and society in which that individual is embedded. It is through enculturation that individuals learn to process and act upon the technological, ecological, and sociological relationships that encompass them. Individual action, creation, and change is possible through the process of enculturation. As a result, individuals may be sources of production and creativity, yet are strongly influenced by the thought and emotional patterns which are a part of their culture (Etzioni, 1988; E. Hall, 1976). The filter through which individuals interpret their reality is the communicative rationality provided to them by the group to which they belong (Fairtlough, 1990).

Schools are generally thought to play a formal role in the transmission of cultural norms. However, there is a great deal about the schooling process that is informal. This portion of schooling is as influential in the enculturation process as the formalized curricular content and the teaching process itself (Goodlad, 1984; Kozol, 1991). For instance, the gathering of students for lunch and the process of feeding the school population transmits a great deal of cultural information to
students (Steinberg, 1993).

If the notion of a sustainable society is to become more than a theoretical concept, or an adventure in utopian thinking, the theory must be backed by practicality and prescription. What specific changes might occur? Why should these changes occur? What plans for the implementation of those changes could be followed? The organization of this chapter will follow the orientation of these basic questions. This is not to suggest a blueprint for the re-creation of U.S. society, but a direction which the process of collaborative change might take in response to ecological imperatives (Bookchin, 1986). Albert Einstein once stated that the ability to imagine was worth more than all the knowledge man could accumulate.

As an institution of societal control, education is one of the institutions which must change for our societal orientation to change. The few examples of changes that I will suggest regarding schools illustrate the different orientation toward control, power, and nature that a sustainable society would require. These changes would involve the organization and structure of schools, the learning/teaching process, and the content covered by the schools. These three areas represent the primary methods by which schools influence the minds of students and transfer cultural norms.

Many educators find the description of schools as societal institutions for the control of student's minds as reprehensible. However, the lack of recognition of schools as instruments of
control and part of societal power relationships is naive and dangerous. Exposing power relationships inherent to schooling is proposed as a method of lessening the implicit coercion of the hidden curriculum. This method would also bringing about an active dialogue focused upon the ecological and sociological pathologies confronting U.S. society.

Each of the three areas of concern: school organization, the teaching process, and the content of schooling will be described. Each area is examined by describing the present features of U.S. education and the features which would be stressed by education for sustainable development. It will be apparent that my conception of education for sustainable development involves significant changes in the education process. It will also be obvious that education for sustainable development is an encompassing conception of education and not just a call for a new course to be added to the curriculum.

**School Organization**

The organization behind the schooling process has a great impact upon the type of education students receive. This section will examine the present school organization and changes which would be consistent with the norms of sustainable development. This examination will include: the way in which schools are financed, the salary structure, sabatical leaves and the university/school connection, food procurement, the length of the school year, schools as safe places, and school boundaries.
School Finance

There is no area of public school organization that requires more attention than the funding process. This process represents a dramatic statement of the strength of the U.S. meritocratic justice system. Previously, I responded to conservative reform agendas by stating that the U.S. system of education is working exactly as it is meant to. Children are schooled in the passivity required of a life in a society where both great material well being and debilitating poverty abound. Children presently learn that this gap is acceptable and understandable. Inequity is based upon the merits of each individual and therefore is natural and just.

We presently have one of the most inequitable and unfair systems of financing schools, yet the arguments against change toward a more equitable plan are vigorous and well organized. The opposition to equitable funding for all children’s education involves arguments which pits issues of equity against principles of liberty (Kozol, 1991). It is argued that local autonomy and liberty is at stake when the people of one school district must pay more to raise the standards in a poorer district. The point stressed by those making this argument is that freedom from interference by others is endangered when educational equity for all children is at stake (Chubb and Moe, 1990; Friedman and Friedman, 1980).

U.S. schools are funded by a system of taxes in which property tax plays a prominent role. Property also plays a
prominent role in the conception of rights and liberty in the United States. Unfortunately, obligations regarding the holding of property are often overlooked. It is consistent with a nation who judges the value of its members by their property holdings that the concept of property be such an integral part of a system of justice (E. Hall, 1976).

The system by which property is transferred between generations allows for the perpetuation of an affluent class in the United States (Lapham, 1988). This system of inheritance is a means of benefit distribution which is generally accepted without question. If we divide our benefits and burdens by a justice system in which an individual’s merit determines their share, our system of inheritance extends this system of merit by dividing the benefits and burdens to one’s ancestry. As a result, we have an institutionalized aristocratic system of intergenerational justice.

Just as our present process of schooling trains children to passively accept the inequity which surrounds them, the financing of schools is structured in such a way to provide an unequal starting point from which equality of opportunity can be applied. The system functions like this. The financing of schools is primarily based upon the taxation of property. The value of property in school districts varies so the state divides tax revenues to aid school districts having less valuable property to tax. State aid to education is supposed to equalize the amount of money spent per pupil. The amount of aid given to the poorer
districts doesn't bring the amount of money available per pupil to the level of the richest districts in the state, however. The level of funding is usually awarded on a formula which allows a minimal expenditure (Kozol, 1991).

It should be remembered that almost all local districts receive state aid, even though many districts are able to meet the minimal foundation level of funding through local property taxes. Providing aid to affluent districts is done for political reasons as property holders from affluent districts often are in positions of economic power and have an influence on state policy making. As a result, state aid to local school districts generally serves to help those children in affluent districts as well as those in poorer districts (Kozol, 1991). The end product of this school finance system is that the gap between the "haves" and the "have-nots" is perpetuated. It is a common axiom of educational rhetoric that throwing money at education problems won't solve them (Bush, 1991). Yet, affluent districts often spend as much as two times per student more than districts from poorer areas (Kozol, 1991).

Those who believe in a meritocratic system of justice often stress the importance of equality of opportunity (Bell, 1973; Nozick, 1974). Just as often, education is often held up as an instrument in equalizing opportunity. Unfortunately, the equality of opportunity which might occur through education never comes to fruition because our educational system is funded by an inequitable system of finance (Kozol, 1991). I believe
that children will never receive the equal opportunity that education is suppose to allow if the schools they attend are funded by an unjust system.

The amount of funding per student is important. Also important is the disparity between students that are well funded and those that are not. The U.S. educational system will continue to perpetuate inequity among the people of the U.S. if the present system of funding continues. Equal funding is not synonomous with equal opportunity, but equal funding for all U.S. students would certainly be a step in the right direction.

A society which attempts to balance liberty, equality of opportunity, and solidarity must not have a institution of societal reproduction founded upon a system which is inherently imbalanced. The use of property tax as a source of funding for schooling is inappropriate because it leads to an imbalance in the funding per pupil across districts. A method of redistribution is required in which the funding per pupil across the districts of a region are equalized. Although more money may have to be spent educating children with emotional problems, learning disabilities, or where English is a second language; the cost of public education per pupil in a region should be as equal as possible. There are many other factors to consider regarding educational equity, but first we must find a taxation system which would level the expenditure per child.
School Salaries

Many of the reports concerning education published in the past ten years deal with the need to increase the salaries of teachers to stimulate the influx of "better people" entering the teaching occupation (Association of American Colleges, 1989). Low teacher salaries illustrate the minimal importance communities place upon the education of their youth. These low salaries also demonstrate the historical salary inequities of an occupation with many women (Apple and Jungck, 1990; Tyack and Hansot, 1982). As in the past, schools are places to send children while men perform important work.

All occupations need good people to fill their ranks. It is obvious that not everyone can teach, but the "better people" approach as measured by grade point average is not the answer. Teachers are needed who care about their students and their society (Noddings, 1984). High grades in school don't make teachers "better," or even more knowledgable in a specific subject area. For their care, effort, and enthusiasm teachers should be paid a fair amount which would allow them to live within the region where they teach and allow them to fulfill their needs.

With all the discussion of teachers' salaries in the reform literature, nothing is mentioned about administrator's pay. Principals often make from two to four times as much money as the teachers. This is wrong. School management is important, but entry level school managers should never be paid more than an
entry level teacher. In similar fashion, experienced school management personnel should receive no more than an experienced teacher.

The present hierarchial pay structure is typical of bureaucratic management and a power structure which doesn’t fit the nature or purpose of schooling for a sustainable society. We think of leaders as people who direct our attention and action. We look for carismatic individuals to follow rather than recognizing the importance of a group structure and process which allows each individual standing and voice. School budgets and school management are certainly involved and important tasks, but we should not look for the exceptional leader/administrator who will turn a school around, or lead us to the educational promised land. We stress leadership because of the passive relationships found in our society. We also stress leadership because it is easier than accepting that all of us are implicated in our social and ecological problems. This is another way of transferring the blame for problems and not accepting or own obligations and role in power relationships.

The most important relationships in schools are those in which students take an active role. Placing the locus of school power with school administrators only helps to reinforce the system exceptionalism and passivity found within schools. Our school organization reflects industrialized management systems applied to school settings (Tyack and Hansot, 1982; Glasser, 1990). This style of school organization lacks effectiveness
because students are not raw materials, resources, or products. Students, teachers, aides, and administrators need to become part of a participatory organizational model (Glasser, 1990; Grant, 1988). All of those involved in the schooling process should share power through the democratic process and should be responsible for the organization and management of the schools.

Perhaps the most underpaid of all school employees are teacher assistants. These individuals should be paid on a scale which would allow them to eventually make as much as entry level teachers. Each teacher should be assigned at least one full time teaching aide for their classroom. Instructional aides are essential to the learning process, but all too often aides are nothing more than office support help.

I have suggested that the present salaries of administrators are too high and the salaries of instructional aides too low. But, how should revenue be divided within the school salary structure? I believe it is wrong to pay teachers more money because they have been in a school district for a number of years. Paying a more experienced teacher two or three times the salary of a starting teacher is also wrong. A person who stays in teaching for twenty years should be respected, but payment because of longevity has absolutely nothing to do with the purpose of teaching.

The step process of advancing pay scale for teachers should be eliminated. It makes no sense that a competent teacher with 25 years experience who has lost all enthusiasm for teaching
makes $45,000, while an enthusiastic and competent teacher of three years makes $25,000. I do not suggest that all teachers with experience have lost enthusiasm, or that all new teachers are enthusiastic. Simply, the system of payment for teachers must be changed.

Johnston, et al, (1989) stated that the salaries of teachers must be increased to attract better people and that the salary profile of teachers is too flat. It is possible in the conceptual framework of a sustainable society, however, that teaching could provide an adequate wage and gratify essential needs. Teachers can be payed at a scale which compensates them well enough to live comfortably in the region in which they live, and work in a profession which allows them to fulfill their essential axiological and existential needs.

If the goal of our society is material progress and economic growth, the previous paragraphs don’t make sense. The efficiency model for education would stress competition, quantification, merit pay, and accountability. However, this orientation toward educational organization is not conducive to a sustainable society. The organization of schools oriented toward sustainability would stress cooperative learning, group and community affiliation, and belonging. This type of schooling would also emphasize flattened hierarchies, shared control, and lead management to create collaborative efforts toward problem resolution and effective teaching (Glasser, 1990). Salaries should reflect that flattened organization.
The gap between the salaries of aides, administrators, and teachers should be minimized. This could be accomplished by using a percentage of the pay for starting teachers as a base unit of one. Starting aides would earn no less than 75% of the salary of a starting teacher and could eventually earn as much as a starting teacher. Established teachers should earn no more than 125% of the base salary. The few administrators found in schools would receive pay consistent with teachers salaries depending upon experience.

Certification

Certification based upon the acquisition of an advanced degree or specific number of courses is a process which should be eliminated. If we want people to learn continually through their whole lives (United States Department of Education, 1991), teachers should be role models as they demonstrate continuous learning. Teachers should take courses and workshops reflecting this attitude of life-long learning.

The U.S Constitution provides for state supervision and control over education. The certification process is an attempt by those within the states to control the education process. A review of the teacher certification requirements by the states demonstrates the varying degrees to which states seek to exercise this power. It seems obvious, however, that to control teacher certification is to control an extensive degree of power over the academic preparation of teachers. We should not minimize the importance of the control over knowledge, how knowledge is
organized, who may teach, how knowledge is evaluated, and who is allowed to question all of these power relationships (Apple, 1993). The certification process is an important part of the politics of societal reproduction.

Colleges and universities also play a large role in the certification process as they seek to preserve the academic freedom of their institution to prepare preservice teachers as they deem appropriate. The state responds to the autonomy of these institutions with accreditation standards which can pressure colleges to meet state established standards (Moore, et al, 1993). The result of this power relationship between state and educational institutions is that the students who wish to become teachers have very little control over their own education (Purpel, 1989).

Problems with the present certification system can be demonstrated by the application of the National Teacher's Examination (NTE). Many states require the passing of the NTE for certification. The review of the literature pertaining to NTE's suggests that success on these tests are correlated to success in college course work (Evertson, et al, 1985; Flippo, 1986). There have been no studies which conclusively demonstrate that effective teaching is correlated with college grade point average, however (Evertson, et al, 1985). Most preservice teachers believe that their course work was irrelevant and that their instructors played a minimal role in their preparation for teaching (Su, 1992). Preservice teachers believe in student
teaching and are often most strongly influenced by their cooperating teacher (Su, 1992). By requiring scores on NTE's in the certification process, the practical application of teacher/learner relationship is eliminated. Teaching involves relationships which often defy quantification. The quantification presently attempted only scratches the surface of teaching/learning relationships. As mentioned previously in this study the quantification of quality is a futile endeavor.

The testing that presently occurs in the certification process demonstrates the pervasiveness of utilitarian justifications in our educational system. We measure the total goodness of teaching staff by measuring their competency upon a standardized test. We then continue the utilitarian process by stressing the outcomes of education: higher test scores compared internationally, more national economic growth, the number of scholarships awarded, the number of students attending prestigious universities. Typical of most utilitarian behavior, our assessment of consequences typically fails to address the distribution of the benefits and burdens of those consequences (Mathison, 1991). We are unable to measure relationships involving care and compassion which are so important to teaching and the education process (Noddings, 1984). As a result, we leave out the better part of our moral obligations in the assessment of teaching and education.

It is ironic that those who seek more freedom of choice in schools and more application of free market competition in the
educational process also seek more restriction and control through testing in the certification process. The certification process serves to protect established disciplines at the collegiate level, and demonstrates the power of state educational elites to dictate the focus of teacher education (Bowles and Gintis, 1976).

The process of certification should be eliminated. A review of teacher, administrator, and aide qualifications and performance should take place at a local level. If education for school personnel is a career long process, the justification for certification loses its importance. Evaluating school personnel through a formative approach will accentuate the growth of competence and help create a positive and nurturing atmosphere.

**Tenure**

Tenure could be eliminated in schools focused upon sustainable development as teachers would no longer need protection from management and school boards. The top range of salary would no longer be an issue for cutting costs, and teachers themselves would be part of school management. Because of a flattened power structure, the pressure felt by teachers during evaluations would be reduced. Teachers are often threatened by the summative nature of the evaluations they receive. Formative evaluation is rare in most schools (Purpel, 1989). Administrators hold extensive power over teachers through evaluations leading to tenure appointments. Through the system of sabatical leaves, induction process for new teachers, and the
increased openness of classrooms to preservice teachers and college instructors, teachers’ classrooms would be visited regularly by other adults.

School districts should be concerned about the competence of teachers, aides, and administrators. There is no reason to believe that the present tenure system is an effective measure for ensuring teacher competence, however. School personnel, school boards, and students should become part of a process intended to ensure and maintain the growth of competence and enthusiasm for learning.

**Sabbatical Leave**

Every five years, teachers should be required to take a semester leave from the classroom with pay. Part of this time would be spent in creating a bridge between the university and the school. Cooperating teachers play such an important role in the preparation of teachers that the ties between school and university must be strengthened. In addition, part of a teacher’s duties must involve the education of new teachers, aides, and administrators.

The time spent observing, evaluating, and educating new teachers would help strengthen the teaching skills of older teachers. Teaching is often a solitary undertaking as many teachers have limited content with adults once the teaching process begins (Goodlad, 1990d). Sabatical leaves would help strengthen ties between universities and schools, create a stronger system for educating preservice teachers in schools,
help experienced teachers share their knowledge with other teachers, and open the classroom to a mixture of adults and students. Sabbaticals would allow for the exchange between teachers which is lacking from the present school structure. This system of sabbatical leave would also lessen the "teacher burnout" so prevalent in the present structure.

**Competitive Sports**

Competitive sports have no place in the public education system. Athletic participation, as presently found in schools, is typically exclusionary and stresses competition and domination (Steinberg, 1993). Students learn that others are obstacles to their own success through competitive activities in the classroom and on the playing field (Kohn, 1992). Competitive sports have their place in our society as forms of recreation, affiliation, and diversion, but have no place within our schools. The system of competitive sports presently found in schools undermines and stifles the process of learning moral responsibility (Kohn, 1992). Students often find themselves in groups from which there is little escape and great peer pressure. Students are jocks if they are athletes, nerds if they are intelligent and receive good grades, and hoods or losers if they don't merit entry into either of the other two groups (Everhart, 1983; Steinberg, 1993). The ways students organize their schooling is very real (Rose, 1989). The boundaries formed between school aged students are accentuated by activities which stress competition (Kohn, 1992; Steinberg, 1993). Students are treated in a competitive and
exclusionary fashion by such techniques as tracking, summative grading, tryouts for athletic teams, and punitive discipline. They apply similar exclusionary tactics upon each other (Kidder, 1989).

Although competitive sports should be eliminated from the school setting, games and physical activities must be included. Active games played for fun, the stimulation of mental faculties, physical fitness, the creativeness of expression, and group affiliation should be a part of our culture and part of our schools.

What is typically found in school athletics is a meritocratic system of domination, patriarchy, and abuse, however (Steinberg, 1993). We place so much emphasis upon winning that the positive aspects of athletic competition are lost. When school athletics are concerned, the ends justify the means. In addition, because of our emphasis upon winning and elitist participation, we have become a voyeuristic society. We watch sporting events rather than participate in sports and activities ourselves. Our athletic endeavors culminate with graduation. Individuals become former athletes simply because we no longer attend schools or universities.

A daily fitness regime and games should be required as an integral part of the school day. The health benefits of fitness impact our mental, emotional, and spiritual well being. Middle schools with no a no cut policy for their sports teams would allow everyone to belong to a group, become physically fit, and
reap the benefits of play (Steinberg, 1993). Unfortunately, the fun and expression found in play has been lost in a society which features work, progress, and winning.

**Food**

The food served to students should be produced regionally, with local food sources stressed. The procurement of food is part of the school’s organization. Buying foods from the local region will help everyone associated with the school understand the importance of the land in their region. This policy also ties the farmers of the region directly with the people their produce should serve.

The procurement of food should also follow the tenants of good health and fitness. The consumption of meat should be dramatically reduced because of its impact upon both human health and the land (Robbins, 1987). The sugar and fat content of food served should also be reduced. The present school diet is often dictated by costs and the tastes of students. It makes no sense from a nutritional standpoint to provide meals by MacDonal’s in schools to keep students from leaving the school to eat lunch at fast food establishments (Kozol, 1992). The tastes of people are certainly important, but one doesn’t have to teach in elementary schools for long to recognize the impact poor nutrition plays upon student’s abilities to actively participate in the educational process. For this reason, breakfast and lunches should be served in the school.

The way in which schools organize their lunch room is also
important to the messages received by students. Observing a lunchroom in any Junior High will illustrate the hierarchies students organize among themselves. Tables of students are almost always organized by status (Steinberg, 1993). Typically absent from the lunchroom tables are the teachers who often separate themselves from students. Students and teachers should eat in the lunchroom together with teachers working at bringing all students together.

In conjunction with proper nutrition, health care delivery should become part of the school regime. The immunization records of U.S. children against communicable diseases demonstrates the ineffectiveness of our health care system. Communal efforts to improve health care should use the schools as a center of distribution and control.

**Organization Of The School Experience**

The schooling of children must begin before the elementary school as pre-school experience has such a great impact upon the effectiveness of schooling. So many children come from families where the parent(s) are unable to effectively act as their child’s first teacher (Edelman, 1987). The reasons for these failed relationships are certainly not irrelevant, but we must move beyond criticism of capitalism, social Darwinism, and racism. Helping preschool children is one way in which we can influence the poverties and pathologies of this generation. In this way we might have a positive influence upon the downward spiral of poverty and help reduce the pathologies in generations
to come (Kohl, 1991). Preschool would help children from
disadvantaged families and disabled children get an equal start
when they reach the age to begin elementary school. Preschools
would also serve as a source of support and information for
parents concerned with providing a more effective learning
atmosphere for their preschool aged children.

Elementary school should be the time when children learn the
math and reading skills which will form the foundation for
further learning. It is also a time when physical competence as
demonstrated by participation in sports and games are important
to children. In addition, societal rules and goals should be
imparted through the elementary school years (Lickona, 1988).
These socially oriented objectives should be imparted through
both explicit and hidden curriculums (Benninga, 1991).

The social objectives of elementary school should focus upon
the communal obligation and cooperative relationships (Berman,
1990). Children must be become concerned with the other members
of their classroom rather than egocentric and individual
orientations (Lickona, 1988, 1993). We must educate children to
act in a morally responsible fashion consistent with their
obligations to life. Children must know that they are important
and held in esteem by being the object of care and respect. This
is accomplished by removing the negative influences of
competition, violence, abuse, and sarcasm (Lickona, 1991a). This
is also accomplished by helping the children recognize that they
must give care and respect to others (Noddings, 1984). An
extension of this concern for others are the bonds children should develop with the natural world through direct positive experiences. Simple recreational pursuits are important to this bonding process and should be introduced to establish lifetime sustainable leisure patterns.

The classroom must become a place where kindness, cooperation, openness, and courtesy are commonplace. These types of relationships must be accentuated among students and among the adults in the classroom and the students. Classrooms must become a place where students learn to feel, think, and act in a caring way (Noddings, 1984). This type of learning is possible only through experience. Unfortunately, the teaching occurring in most U.S. classrooms stresses competition and individual achievement rather than obligations and communal orientation (Berman, 1990; Kohn, 1986). The classroom must become a place where individuals use their creative abilities to enhance the group's ability to function and live harmoniously (Lickona, 1988).

Junior High years should be devoted to giving children a sense of community and helping acquire skills that will help them later in their lives while assisting the community. Students would be supervised while performing work/service to the community by teachers educated in trades, agriculture, and social services. They would learn to cook and clean at nursing homes, hospitals, and schools; work with garbage collection and recycling centers; and build and repair homes or government
buildings. Their teachers would be carpenters, cooks, engineers, farmers, nurses, plumbers, electricians, etc. who work for the schools.

The students would be taught basic skills, but through practical experience in community settings. They would get the feel of what it takes to create a caring and positive community. This part of their education would also involve an active introduction into the governance of their community and their region. They would experience community governance itself and how they might participate within that system. They would also be provided with experiences involving the distributive and retributive systems of justice applied by their community.

In addition to active participation in the human community in which they live, students would also be given the opportunity to live in close relationship with the land. Outdoor experiences, camping, and life outside the confines of the human community would allow students to extend their conception of community to include the land. These experiences would not necessarily entail trips to wilderness areas as the human impact upon these areas would become excessive. Most communities or regions have land which might be used to provide students with useful outdoor educational experiences. Students would learn energy budgets, water and nutrient cycles, and the local vegetation from first hand experiences. These types of experiences might help students place material well being in its proper perspective.
During the junior high years, students would not discontinue their study of academic subjects. They would write daily about their experiences, reflecting upon the relationships in which they were participating. These reflections would be shared with other students and teachers in open discussions of the meaning and significance of their experiences. The practice of reflection and open exchange of beliefs and feelings would allow students and teachers to affirm their sense of community, discipline, and morality.

Senior high students would go back to the classroom on a full time basis. But the organization of classes would be much different than our present high schools. Core courses would include holistic studies such as environmental choice, social control and individual freedom, sustainable development, and ethics and technology. Issues investigation and elective courses would allow students the freedom to study subjects of interest to them. These courses would not just focus upon knowledge, but stress active applications of their investigations.

Students in the senior high school would become actively involved in the governance of their school. Students would no longer be voiceless. They would take an active role in the evaluation of courses, teachers, administrators, and the teaching process. Their votes would count in decisions concerning the use of the school budget. Students would also control the discipline required for members of the school community not meeting their obligations. The senior high school would become a place where
students would learn through experience the balance between rights and obligations. They would be able to apply the principles of responsibility and care that were established in earlier years of schooling and actively participate in democratic processes.

**School Boundaries**

There are two points to be made about boundaries and the schooling process. The first involves the metaphysical conceptions of knowledge and the boundaries imposed by curricular organization. These boundaries often involve unspoken assumptions concerning the structure of knowledge and the purpose of education (Apple, 1993; Freire, 1989). The relationships between teacher and student, and the student and knowledge vary greatly with the assumptions associated with different ways of knowing (Bowers, 1993). For instance, the holistic and integrated ways of knowing suggested by this study are very different from rationalistic and humanistic orientations.

The importance of metaphysical boundaries shouldn't be overlooked. One of the points of emphasis of sustainable development is that we must expand the consideration of value and meaning beyond individual human boundaries. The obligation to life described by this study suggests a balance between individual and community, and extends the conception of community to involve the land. This ethical theory is based upon an integrated or holistic way of knowing which encompasses all ways of knowing (Kealy, 1990). An integrated way of knowing erases
the boundaries between other and self to allow identity with life's relationship and quality (Pirsig, 1974).

The second set of boundaries are physical and pertain to school walls, property, and the defining characteristics of a classroom. The imposition of physical boundaries play an important role in how people relate. Physical boundaries also represent a visible statement of the epistemological orientation of the school. To envision schools as only buildings and education as only taking place within a classroom is to impose boundaries upon our understanding of life.

We have gained great knowledge in many areas and our ability to handle information has dramatically increased (Beninger, 1986). However, our understanding and knowledge as a society in other areas has dramatically decreased. For instance, we are losing incredible amounts of genetic information through the loss of species (Ehrlich and Ehrlich, 1981; Orr, 1992).

It is interesting that we don't consider the classroom as environmental even though we teach about nature and the environment in a classroom. We separate and isolate ourselves from the ecological knowledge needed for our survival (Orr, 1992). As a result, there are fewer and fewer people in the U.S. who are have any degree of ecological literacy (W. Berry, 1977; Orr, 1992). This loss of literacy represents a great loss of knowledge and a reason for great concern (Hardin, 1985).

Education for sustainable development would tear down the barriers to learning imposed by school walls. The school would
become better conceived as both the human and land community. In this way the students would find themselves learning within very different contexts as they are part of community and nature as they learn.

The democratic emphasis of the schooling process in education for sustainable development would allow the school to become an induction into active democratic participation. This introduction to the democratic process would expose the web of power relationships found in schools and reduce the barriers imposed by school walls. Emphasis upon the democratic process would keep school walls from becoming a barrier used to hold out different ideas and non-discrimination. Schools would become involved with the preparation of students for a lifetime of active democratic inclusion (Adler, et al, 1982; Dewey, 1902).

**Schools As Safe Places**

Schools in the U.S. today are not safe places (Rose, 1989). This statement includes rural, suburban, and urban schools. Drugs, gangs, violence, and guns are a part of student’s lives. The answer for the violence and mahem found in schools does not lie in the hiring of police to roam the hallways, however. The things which make schools unsafe are symptoms of larger societal problems. Schools can be part of the solution for these problems only if the underlying pathologies are considered. If student’s needs are not being met, they will respond by overtly or covertly resisting the authority figures in their lives.
Children will not learn to act in a moral fashion unless they understand the discipline which society requires of them (Durkheim, 1973). We must go beyond the consideration of morality and the discipline required by society, however. Schools are unsafe not just because students don't understand the morality that is required of them. Schools are unsafe because students have unmet needs. They rebel in acts of resistance, disrespect, and violence because they believe they have been disrespected by society. Students know and feel this disrespect because their needs are not being met.

**Time Orientation And The School Year**

Schools in the U.S. reinforce a linear perspective of time and prepare students for the fragmentation of time required of life in a mechanized society. The bells ring and the students move to a new work station to learn a separate discipline. Students are told not to waste time and get their work done expeditiously. After "spending" a set period of time in school, students graduate knowing the most important of all time orientations: they know that "time is money."

Most conservative reform literature calls for more time to be spent in school (Holtz, et al, 1989). These reformers want to increase the length of the school day and the number of days students attend school. They believe that the U.S. competitive position in global markets is compromised because students of other countries spend much more time in school. They also believe that extensive summer vacations taken by schools are a
vestige of a past rural agricultural orientation and should be eliminated.

The organization of the time spent in school represents a significant change in education for sustainable development. Instead of the fragmentation of the day into separate blocks of time, a student’s education should be blocked into weeks, months, and seasons. This would allow students to study subjects intensively over a shorter period of time, and would allow the students to get out of the buildings in which they are now held captive. It would also allow them the opportunity to study land/organism relationships intensively in different seasons. This type of organization is possible at both the middle and high school levels. This block orientation would allow students to become part of the subjects that they study. Elementary schools should concentrate upon communicative and numerical literacy, and would follow a more traditional time schedule.

The school year should be extended, as many things can be learned during the summer. However, this does not mean that the leisure time now accorded to students and school personnel would be lost. Other times of the year might be more appropriate to use for idle time, or less intensive study. The whole year might be used, but with only a fraction of the total number of students in attendance. This could allow for seminars in the high school, for instance, where students read extensively and meet two or three times a week to discuss and direct their readings.
The Process Of Schooling

There has been a good deal written in the educational literature concerning the hidden curriculum of schools (Benninga, 1991). The value free assumptions associated with scientific inquiry still prevail, however. Goodlad (1984) provided striking portrayals of teachers as experts and a passive model of schooling found in U.S. schools. The process of schooling is as important as school organization, or the content covered by schools. It should also be recognized that most of these factors concerning schooling overlap.

This section will focus upon the processes which are the indirect, or "hidden," portion of the education process. These processes communicate to students powerful messages and assumptions about knowledge, society, and ecological relationships. The processes which will be described will include: discipline, grading, tracking, food preparation, and the focus of the teaching process.

**Discipline**

The discipline provided by schools should be consistent with the morality found in a sustainable society. The requirements and readiness of different age groups require different orientation, however. Discipline in grade school would be externally provided. Rules would be established by the community and followed by teachers, students and families (Etzioni, 1993; Leming, 1993).
Problems would be handled immediately with parental involvement required. So often the parents are not involved until a crisis is occurring involving their child. Many of these problems could be avoided if the teacher and the parents had more open and continued communication (Brooks and Kann, 1993). This communication process takes time, but will help provide the students with consistent discipline. Parent’s work is not more important than the child’s education. Parents should be called at work and from work to join in the discipline process.

The positive aspects of the student’s school experience should also be reported to parents. The school and the home would join together to provide the atmosphere in which the child learns what is expected in a society stressing sustainability and equity. Teachers must provide a strong sense of authority to the children enabling them to understand the expectations of the community within which they live.

The stress U.S. society places upon individual freedoms is very apparent in schools. Children are presently enculturated by a system featuring anthropocentrism and individual autonomy (Bowers, 1993; Meisner, 1993). The enculturation process is not something we can avoid. Just as with power relationships, enculturation involves the emersion of children into the society in which they live. There is no reason that the enculturation process occurring in schools couldn’t emphasize ecocentrism and individual obligations to community, however. The relevance of change toward a sustainable society is becoming more apparent.
As this relevance increases, motivation to change our educational purpose will increase.

The grade school is a time to immerse children into the discipline required of ecocentric lifestyles in a sustainable society. Children need to feel consistent and regular reminders of their obligations to others. Teachers, aides, and parents should act as consistent models of authority in applying discipline (Durkheim, 1973). To not impose discipline with an ecocentric emphasis would be cruel and leave the child without a sense of what is required of a moral life in sustainable community.

Junior high school is a time for the child to understand the meaning of commitment to community. Students in this age grouping should be actively involved in projects which place them in both human community and land community. Through this active participation in community, the students would learn of their obligations to others. The discipline required to fulfill those obligations will help the student understand the relationship between rights and the obligations.

Punitive discipline in the Senior high would be handled by the students themselves. Students would make the rules concerning their conduct, appearance, and attendance by means of a democratic process. They would govern their own school society. Teachers, administrators, school boards, aides, and support staff would have a voice, but that voice would count no more than the students'. The goal of discipline in the Sr High
would be an initiation into participatory democracy. The paternalism which dominates our schools would be replaced by the student’s responsibility to control their school community. If we want communal responsibility, it should be part of the educational processes found within our schools.

**Grading**

There is no process within the realm of education more laden with power relationships than evaluation (Purpel, 1989). Teachers serve students a steady menu of summative evaluations which test student’s ability to retain information (Goodlad, 1984). Rarely is the evaluation formative in nature, and rarely does the evaluation move beyond lower level mental functions to test more in depth understanding of subject matter (Purpel, 1989).

Evaluation should become part of learning through a formative process which lessens stress and competition (Kohn, 1986). Time constraints on evaluation are important to an industrialized society stressing Fredrick Taylor’s principles of efficiency in production (Beniger, 1986). Education for sustainable development involves long term relationships: education as a life long process, cyclical time rhythms as well as linear time orientation, and the forming of relationships which will endure. Time constraints on testing fills none of those goals. If the material found on a test is important, it makes no sense to place time constraints upon the testing of that knowledge of that material (Glasser, 1990). The student should
continue to study the material until it is learned. The formative evaluation process recognizes the different rates and methods by which people learn.

Homework would be required of all students, but only as drill for mastery of already learned materials. Formative examinations would not be allowed unless the students had completed the homework expected of them (Vickery, 1990). In addition, reading should be required of the students each night. Because at least one aide would be present in each class, each student would be required to express themselves through writing every day. The writing done should be a part of a reflective process that would be saved in a portfolio by the student. As teacher aides and students come together to evaluate the learning process and the mastery of content, the portfolio would provide the direction and pace of future study (Barton and Collins, 1993).

**Tracking**

The process of grouping or tracking which takes place in many schools today is an extension of our meritocracy. School managers use tracking to perpetuate societal inequity and gender stereotypes. Although administrators and teachers apply tracking in the name of excellence and quality, they should not be excused for the injustice they perpetrate upon the people they manage (Damico, 1993). This injustice concerns both those found in "lower" groups and in the accelerated or "gifted" categories. Because of the importance of equity and democratic inclusion that
sustainable development emphasizes, these groups need each other. Tracking can only be justified by administrators and teachers who are preparing students for life in a class system in which problems are solved by fiat, or through decisions made by elites. In other words, if our society is to be unjust and elitist, then we better train our children to accept those conditions. The arguments over inclusion or separation of groups in school settings are old. If we wish to educate for sustainable development, the concept of tracking in schools would become a relic of past injustice and insensitivity.

**Student Centered Approach**

Teachers play a very important role in the schooling process and have a great deal of control over the relationships found in the classroom. Teachers control the evaluation of students, the type of instruction and activities pursued, the goals and objectives of instruction, the use of time and space in the classroom, and the amount of humor, laughter, and enthusiasm found in the classroom (Goodlad, 1984). Although schools are meant for students, teachers dominate what takes place in the classroom. The focus of the classroom so often becomes the teacher or the external influences which impact the actions of the teacher (Kohn, 1992). It is through this focus that students learn the passivity and emotional control our society requires of them (Damico, 1993). They learn acceptance of hierarchial layers of power, not to question, and reliance upon elders as sources of knowledge and control (Apple, 1993).
Students at all levels of the education process typically spend the majority of their time involved in activities which require their passivity. Goodlad (1984) studied the process of school and found that students spend the majority of their time listening to lectures and explanations, working alone on written projects, and working alone preparing assignments. Although there are differences between elementary, junior high, and senior high school; between 55% and 60% of the student's time is spent involved with these passive activities. When students work in groups they usually work alone. Enthusiasm, student interaction, laughter, and anger were typically carefully controlled by the teacher. It is interesting that when asked of their subject preference, students selected subjects which involve active participation. Arts and physical education were high on students' lists (Goodlad, 1984). These subjects obviously lend themselves to the student's active involvement.

Adjusting classroom activities to a student centered and active learning approach would involve some loss of teacher control over the learning process. Kohn (1992) suggests that, "the traditional model of teaching amounts to a rehearsed solo performance by the instructor, whereas cooperative learning not only offers instruments to everyone in the room, but it invites a jazz improvisation." (p. 42)

Education for sustainable development would remove the emphasis from the teacher placing greater stress on group relationship (Freire, 1989). It would also involve a change in the power relationship among the individuals found in the classroom (Damico, 1993; Freire, 1989; Purpel, 1989). Collaboration and
team building are effective teaching techniques and help create an atmosphere of mutual support and focused effort. These techniques are successfully used in schools, but are too infrequently found (Goodlad, 1984; Kohn, 1992; Lickona, 1991a).

Even though teachers have great control over the classroom, they are also controlled by many facets of the teaching process. The use of standardized testing provides the unfortunate opportunity for a more teacher centered approach. We presently accept that student performance on standardized tests establishes teacher competence. The stress placed on standardized test scores results in the well established practice of teaching for the test. Often teachers are mandated to teach specific materials from an approved textbook (Bowers, 1993). This process deskills the teacher and removes some of the teacher’s control to the centralization and standardization of state mandates (Apple and Jungck, 1990).

The teaching process which would enculturate students into a sustainable society should involve a cooperative management style and a group orientation (Kohn, 1992). Knowledge of subject matter should be tested with successful mastery required (Renyi, 1993). If mastery is not achieved, the student would continue to work on the material, but through an alternative process. This would allow the student to learn the required materials at their own rate and by means of a method which best suits them (Glasser, 1990; Vickery, 1990).

Courses focused on sustainable development would lend
themselves to a less teacher centered orientation. The process of teaching holistic courses is much different than the customary teaching process applied to a course from a specific discipline (Bok, 1990). Because the amount of information and understanding involved with holistically oriented courses is beyond most teachers, the process of teaching is by necessity altered. Both students and teacher easily recognize that a cooperative approach to learning is best suited for holistic types of courses. Through this process teachers and students join as active participants in learning (Freire, 1989). This process also suits the cooperative and participatory emphasis of sustainable development.

**Food Processing And School Maintenance**

Students presently expect others to prepare their food, clean up their residue, and maintain the buildings in which they study. Although an individual or two would need to supervise the work done in food preparation; students, teachers, aides, and administrators should be involved with the serving and cleanup of food. Students should rotate into these positions doing a great deal of the work presently done by adults. Through this process the students would learn to respect the time and effort involved with food preparation and cleanup. They would also learn to care for and respect their school environment. Through their active participation, students would learn that care and responsibility are not things that can be bought or payed for through taxes. Obligations to community and environment are not something for
someone else, or someone else's responsibility. These obligations take time, effort, and are beneath no one.

**Curricular Content**

The third component of schooling involves the content covered by schools. Curricular content concerns many educators as debate over topic inclusion fills the academic agenda. Teachers are often required to include more and more content allowing them less flexibility in how and what they teach. The result of these requirements is a smorgasboard of curricular content which sufficates teachers. It seems that content is always being added while little or no content is deleted.

Most discussions of reform seek to change very little of the present content found in the schools (Westheimer, et al, 1992). The emphasis of the various classifications of reform vary slightly, but all follow an agenda stressing individualism, mechanism, and consumption for our society (Bowers, 1993). There is certainly nothing in the debate over curricular content that would suggest an orientation toward becoming a sustainable society. Even radical educational reformers fail to address issues of sustainability and anthropocentrism (Orr, 1992; Bowers, 1993).

An economic agenda dominates both liberal and conservative educational reform rhetoric (Bowers, 1993; Cuban, 1990; Nasaw, 1979). Our government uses education as a battle ground to promote its messages of economic rationality (Bowles and Gintis, 1976; Giroux, 1989). Economically oriented conservatives would
focus education upon content that would help prepare students to
become engineers, scientists, technicians, entreprenuers, and
economic decision makers.

Education for sustainable development would turn curricular
content toward the goal of creating a sustainable society.
Education for sustainable development would ask several important
questions. First, what would life in a sustainable society be
like? Second, what curricular content would help students
believe, feel, and act in such a way to to achieve a sustainable
society? How would that content best be organized to facilitate
the coordination of student readiness and learning?

Curricular organization and course content provides an
indicator of the type of world view our society stresses.
Preparing students for sustainable development would require
knowledge and practice in how to balance the principles indicated
by our obligations to life. This preparation involves the
relationship between intelligence, facts, and wisdom. We need a
curricular focus which will lead our children to understand this
relationship.

It is time for public schools to play a new role in the
enculturation of U.S. citizens (Etzioni, 1993). This section
will describe the content which would be emphasized at the grade
school, middle school, and high school levels. This content
would emphasize the communicative, quantitative, and ecological
filters (Hardin, 1985) which could help us to gain the wisdom to
develop sustainably.
**Grade School**

Grade schools should serve to build moral character (Bennninga, 1991) matching the principles of our obligation to life. This would allow the child to consider both individual and group needs in an ecocentric fashion. In this way the classroom is transformed into a caring, moral mini-community in which the child is immersed. As the children consider each other and the environment they inhabit, they develop a sense of self-worth which is only possible for the elite in our present competitive, individualistically oriented classrooms.

The second priority of grade schools would involve communicative literacy. A system of governance which stresses democratic inclusion can only be made stronger through a populace that can communicate effectively. In addition, the economic power the U.S. has achieved is a direct result of our early emphasis upon universal public education (Thurow, 1985). Changing the focus of our economy from growth to sustainability will also take universal education. Whether the goal is growth, democracy, or sustainability there is no excuse for anyone in the U.S. to be illiterate, however.

We must be more attentive to factors concerning literacy. Children learn at different speeds and as a result the teaching of reading, speaking, and writing should progress at a rate which suits the child. If the first priority of building the classroom into a moral community is accomplished, the children will not be stifled by the lack of quick progress. Self esteem is at stake.
If we are to become a literate people, we must take pride in each individual becoming literate regardless of the rate at which it happens.

Children also learn best in different ways. School districts often adopt one best reading program for their students. This is foolishness as some children require more repetition, some more work on phonics, and some whole language approaches. We must find the approach which works best for the child, and use that approach. This would involve more individual instruction, more preparation for the teacher, and more expense for the school. The costs of an illiterate populace are far greater, however.

What students read while they are becoming literate is of critical importance. Hirsh's (1987) position concerning cultural literacy is relevant. His list of culturally important knowledge is irrelevant to the knowledge which should be imparted to literate students living in a sustainable society, however (Orr, 1992).

The use of language is an extremely powerful device used by humans to control the thoughts of others (Bowers, 1993; Toffler, 1990). One of the most important facets of sustainable development is the understanding and balancing of power relationships. Language and information is an important part of the web of power found in all cultures (Paranti, 1986; Toffler, 1990). Language can serve the purpose of stimulating thought and interaction, or stifling thought (Hardin, 1985). The focus of
communicative literacy in a sustainable society would be the promotion of thought and democratic inclusion, not the prevention of thought. This orientation is only possible if content, process, and organization are considered as influencing the thoughts of our students (Vickery, 1990).

The third priority of grade school should be numerical literacy. As stated in the description of an obligation to life approach to morality, the decisions which individuals and groups must make concerning how they should live involve the combination of both ends and means. We should live by moral principles which reflect our obligations, but also must consider the fulfillment of needs. Both individuals and communities should be considered in this assessment.

Students should understand the risks and benefits of their own actions and the actions of the communities of which they are a part. We cannot live without having an impact upon others and the environment. The control over the extent and duration of that impact involves decisions which involve both quality and quantities. Our obligations to life focus upon the concept of quality. However, quantities are an important part of that consideration. For instance, the principle of sustainability involves a quantity of time. The assessment of risk and minimum harm involves some quantification. We should not make decisions on how to live solely upon the consideration of these quantities, but they must be considered. We will never be able to totally, or objectively quantify life's qualities. Simply, humans are not
"the measure of all things." With this understanding, quantities should be a part of need assessment for all life forms, included in our consideration of the obligations, and used as a tool to determine how sustainability might best be achieved.

Numerical literacy would allow the assessment of risks and benefits as well as the understanding of the limits of those assessments. Grade school is the appropriate time to teach the numerical literacy required of quantification. Students should learn the concept of risk, the interaction of components in systems analysis, and the limits of quantification. The emphasis upon quantification in our present growth oriented society must be tempered. Ecological wisdom would entail a balance between the power of language and numeracy.

Middle School

The years spent in the middle school extend the concept of community from the classroom to the land community. Blocks of time should be set aside to allow students to learn by participating in activities which would provide them with the meaning of their obligations to others. These years should also serve as an introduction to skills which would help them provide for their children and future generations.

During each year spent in middle school, students should be required to work in areas of community service. One area of community service would include such activities as trash pickup and recycling, community cleanup, repair and maintenance of community buildings and infrastructure, the creation and
maintanance of parks and recreational facilities, and the
treatment of water and sewage. This type of community service
would involve the care and management of things which are
important to the functioning of a healthy community.

Another type of community service would involve the care and
facilitation of personal relationships. Included in this area
would be work at hospitals, nursing homes, sheltered workshops,
and pre-school centers. This type of community service would
provide the students with an understanding of caring for the
needs of those who are younger, older, and less fortunate than
they. Through the respect and care for others students might
increase their own self-esteem and develop a sense of solidarity
with their human community. This type of contact with others
would also allow students to come directly in contact with issues
of birth and death.

A third type of community service would combine working with
both things and people by building and restoring homes within the
community. Habitat For Humanity is an example of an effective
program of this type already being used around the United States.

In addition to community service, students should also be
required to study the nature of the land upon which they live.
Blocks of time each year should be set aside for this type of
study. Students should be required to live outside their own
home and feel the rhythms of nature. This type of outdoor
education would also allow for the close and detailed study of
local habitats. Students should be able to name and identify
most of the plant and animal species found in the land community. Part of this outdoor experience should include work on farms found in the region. This type of experience would help students understand nutrient and energy cycles. The importance of soil, the dentritus process, and water cycles should also be included.

The middle school would also provide students with an introduction to the process of governance found in their community and region. Blocks of time should be devoted to the observation and study of the legislative and regulatory processes. Students should also have a chance to observe the criminal justice system and the retribution exacted by society for noncompliance. During this time students should begin to understand how we shape and are shaped by power relationships.

Written reflections should be required daily of students concerning their participation in community service and ecological study. These reflections would be discussed within groups allowing for an exchange of ideas and perceptions. Students would also be asked to express these ideas and perceptions artistically. Aesthetic creations should also be included as part of the reflection process. Reading assignments should also be constantly required during these years. These readings would emphasize the value of community and the importance of the land. History would be read from an ecological perspective.
**High School**

Teachers should require high school students to draw together the experiences of grade school and middle school. Work on communicative and numerical literacy would be combined with a continued emphasis upon ecological understanding of community. The high school experience should focus upon a number of content areas.

First, students should become actively involved in their own governance and control. The issues that are raised by self control would become the source of content investigations (Leming, 1993). Students would come to realize that their actions impact many facets of the systems of which they are a part. They will come to realize that relationships must be understood, risks and benefits assessed, and obligations met (Damico, 1993). Content learned in this manner provides a lasting and indelible impression.

Students, faculty, and staff should share the responsibility for the control, maintenance, cleaning, and evaluation of school activities. In this fashion, students could apply the knowledge they gained by observing and participating in community relationships outside the formal school setting (Etzioni, 1993; Leming, 1993). The school experience would become a training ground for the democratic society of which they were about to become an active member. To this end, students should study the history and power relationships inherent to the form of democracy found in the United States (Apple, 1993; Zinn, 1980).
A second orientation of senior high school curricular content would include mediation, problem solving, and active listening methods. These communicative techniques are an extension of the communicative literacy and moral classroom climate started in elementary school. These methods require practice as they involve the intentional focus upon the needs and perceptions of others (Lickona, 1993). Power relationships between individuals should be addressed and analyzed (Apple, 1993; Damico, 1993).

Thirdly, students should continue the study of ecological systems. These systems should include the study of the impact of human beings upon these systems. Once again, history should be studied from an ecological perspective. Students should actively study urbanization, agriculture, forestry, the fishing industry, the impact of industrialization, energy, transportation, communication, the influence of technology, the meaning of appropriate technology, resources, and the impact of consumption patterns (Slocombe and Van Bers, 1990).

Systems of justice and knowledge systems should be studied to acquaint students with the plurality of values which effect their lives and community relationships. Students should study issues of equity among nations, among the people found in nations, between this and future generations, and between humans and other species. The development process must be questioned and studied from the perspective of sustainability. This is essentially a study of power and society. Study of this type
would seek to answer the following questions relative to power. Who or what benefits? Who or what pays? And, who makes the decisions concerning the first two questions?

The fourth content area addressed by high schools should include the quantification of risks and need fulfillment. Students require competency in the quantification of ecological relationships to help determine appropriate action.

A fifth content area should establish the concept of health and fitness as being tied to individual, human community, and land relationships. Exercise should be part of a daily regiment.

Finally, the study and participation in the arts would allow students the freedom to create which can fill a variety of needs. This emphasis on beauty should help students understand the concepts of quality and become appreciative of the beauty found in natural landscapes.

**Conclusion**

As we changed to an industrialized society, public education filled several roles (Nasaw, 1979; Tyack and Hansot, 1982). First, public schools provided a safe place for children to be when their parents were working. Second, students were trained in the discipline required if industry was to function efficiently. Third, students were taught to read and write. It is in part because of the increased literacy of the U.S. worker that the U.S. expanded to its hegemonic position in world affairs after World War II.
We have been indoctrinated into a socio/economic system which is much different now than the one which supported U.S. hegemony in the years after the World Wars. Our socio/economic organization has changed dramatically in the past twenty years to a global economy. Unfortunately, our recognition and understanding of these changes have lagged. Education must change to match the circumstances which we now face.

The global economy changes the assumptions we once held as true (Harrington, 1984). The possession of natural resources within the borders of a nation are no longer as critical as once assumed. For instance, Japan leads the world in the production of steel without having coal or iron ore within their boundaries. The internationalization of finance makes money and capital much more available to all entrepreneurs. Reverse engineering makes technological innovation much less important than it was twenty years ago. Products can be engineered in such a way to avoid the patent restrictions of the past. Not with standing events like oil spills, transportation of raw materials and goods is cheap and efficiently controlled. Communication technologies make control over production and business possible on a global scale resulting in increased efficiency (Beniger, 1986).

The most pertinent facet of economic production in the global economy is labor. Other countries have caught up educationally with the U.S. and now have a literate populace. Production is going to take place in politically stable countries where the workers are educated and will work for a fraction of
the pay required by U.S. workers. However, these workers will eventually want to own the products they produce.

Can we afford the application of Fordism world wide (Lipietz, 1987)? The answer is a resounding no. If we cling to the assumption that the best way for all humans to live a better life is to increase economic production, we are doomed (Catton, 1982). As John Kennedy stated in his innagural address, "a rising tide raises all boats." The global economy of which we are now a part dramatically changes the level of the tide and the number of boats. The finite resources of the earth represents a hole in the ship upon which all humans float, and makes any further application of Kennedy's metaphor very dangerous.

Education for sustainable development combines a balance between the quantification required of factual problem analysis and our creative abilities to imagine solutions to those problems. It includes a communicative literacy component which would allow for a sensitive and intelligent understanding of our problems. Also included in education for sustainable development is an emphasis upon democratic inclusion which would allow the free interchange of understanding and facts.

Most importantly, education for sustainable development would stress a holistic understanding of how humans fit into nature. The emphasis upon holistic understanding might allow some degree of ecological wisdom when answering the question, "What now?" (Hardin, 1985). An ecolate filter would help us balance human intelligence, quantitative analysis, and holistic
understanding in such a way that we might become a sustainable society. Education for sustainable development represents a change in education which would match the changes required for human sustainability.
Appendix Eight
Teacher Preparation For Sustainable Development

The preparation received by teachers is important to effective teaching (Alkin, 1992; Feiman-Nemser, 1990). Unfortunately, the preparation received by teachers in most collegiate institutions stresses individualism, rationalism, and anthropocentrism (Bowers, 1993). As a result, U.S. colleges often graduate potential teachers with a mechanistic worldview and an egocentric ethical orientation. Preparing teachers for work in a sustainable society requires a much different type of preparation. The obligation to life, ecocentrism, and communitarianism forming the basis of sustainable development places much less emphasis upon the individual.

Most educational reforms can be described as either stressing structural or conceptual changes (Feiman-Nemser, 1990). The structural types of reforms recently suggested include such things as adding a fifth year to teacher education, fewer credit requirements in education courses, and more time devoted to fill field experience requirements. Conceptual reforms usually involve a teaching philosophy matched with a learning theory, or an attempt to combine curricular content in a major concentration with pedagogical orientation.

Teacher preparation for sustainable development addresses both of these orientations for change. This type of teacher preparation combines changes which would accentuate ecocentrism,
sustainability, obligation with a strong community component, and
democratic inclusion.

The structural changes suggested by this model would place
all K-12 preservice teachers within the same general curricular
framework. Presently, preservice teachers majoring in elementary
education take a much different program of courses than those
preparing to teach senior high school courses. Typically,
students majoring in elementary education take 50 of their 125
credits in education courses, while secondary preservice teachers
average 26 hours of educational courses (AACTE, 1987). The
similarity between curricular requirements for both elementary
and secondary education majors in U.S. colleges suggests a
national curriculum (Feiman-Nemser, 1990). No such national
curriculum exists, but there seems to be a general curricular
formula for the preparation of teachers.

Teacher preparation for sustainable development would
minimize the difference between elementary and secondary
education. Teachers at all levels of school education require
ecological, communicative, and numerical literacy. Additionally,
all teachers require a foundation in the skills needed to
communicate effectively. The emphasis upon specialized course
work for secondary education is not needed because the emphasis
in education for sustainable development is on holistic and
integrated knowledge. Presently, a good deal of the curricular
structure of teacher preparation is dictated by certification
requirements and disciplinary turf protection characteristic of
institutionalized hierarchies. These factors represent a significant barrier to the implementation of education for sustainable development.

Although some reforms have suggested moving education courses to a fifth year of study (Feiman-Nemser, 1990), the model described here endorses a different approach. Advanced study beyond the fourth year should be in the specific content area and not in education courses. Once a teacher begins working, there is much more need for intensive, in-school teaching skill development and hard work in subject material preparation. Taking theoretical courses far removed from the school classroom from college instructors who have been removed from schools for many years does little to enhance teaching ability. Ties must be made between school classrooms and educational research, but the emphasis must be placed on practical school applications. Little research can be offered in support of these changes because presently there is so little happening in U.S. teacher preparation which stresses ecocentrism and holistic study (Bowers, 1993).

This chapter provides an example of curricular organization and content which would help prepare preservice teachers in the principles of sustainability required of life in a sustainable society. The chapter represents a dramatic conceptual change in the delivery of preservice teacher education. Stressing sustainability, ecocentrism, and community over progress, anthropocentrism, and individuality is a significant change. As
stated previously, there are substantial barriers to the implementation of this type of teacher education. A real alternative to the present structure and conceptualization of teacher preparation must be considered, however. Without real alternatives to choose from, educators will not move beyond the stages of insignificant tinkering and the recycling of reform (Cuban, 1990).

The chapter begins with some of the qualities that education for sustainable development would promote in students. I then cover some of the qualities that preservice teacher preparation should accentuate so that teachers might become more effective in helping to form a sustainable society. The chapter concludes with a description of curricular content for preparing teachers for educating for a sustainable society. Course descriptions and justifications are provided along with sample of coursework by semester.

What qualities would education for sustainable development seek to accentuate in school age students and their teachers?

Schools should provide students with a foundation which will help them become an active part of a responsive community with broad ecocentric interests. Students should be schooled in their moral obligations regarding the fulfillment of needs and the discipline required of sustainability. The qualities which schools should stress would include: discipline appropriate for life in a sustainable society, group affiliation and community orientation, a conception of liberty which extends from the community, and literacy. The descriptions which follow build
upon the sociological writings of Durkheim (1973) concerning moral education and the ecological writings of Hardin (1985) regarding literacy.

**Discipline**

Discipline is a means of guiding students away from the egocentrism and anthropocentrism which pervades our society. Discipline helps students understand their responsibilities to community, the respect for others, and accountability for their own behavior. Teachers act as an agent of society to provide students with an authority figure from which discipline is exercised and modeled (Lickona, 1993).

The way in which students think about justice, individual freedom, the classroom community, and the land community are impacted by the disciplinary approach followed by the teacher. For instance, freedom can be conceived of as the limitation of one's self to promote the fullfillment of the needs of others. Conversely, freedom could be considered as a set of choices made by an individual acting autonomously. Either of these approaches could be modeled by the teacher. As a result, the conception of freedom can be accentuated by the teacher through the disciplinary approach chosen. Consistent application of discipline by teachers is a means of providing students with an understanding of what is expected of them (Durkheim, 1973; Lickona, 1993). Consistant application of discipline by teachers following ecocentric assumptions is a means of providing students
with an understanding of what is expected of them in a sustainable society.

The discipline required for moral life in a sustainable society is greatly different than the discipline required for a moral life in our present societal structure. We should discipline as the means by which an individual accepts community obligations. Fulfilling needs while also meeting our obligations requires discipline. Education provides an institutional means of immersing students in the metaphors, worldview, and discipline which legitimate sustainability and ecocentrism.

**Group Affiliation**

It would be impossible for the students to accept the discipline required of life in a sustainable society without a strong sense of group affiliation. Both the attraction of groups and the discipline which controls group interactions are part of the social aspect of our biological nature (Wilson, 1978 and 1975). It is the attraction of a group as a collective ideal which draws us together and the discipline of that collective ideal which dictates actions (ASCD, 1988).

One of the most important qualities students should draw from their schooling is the concept of community (Berman, 1990). Presently, schools stress individualism and the progressive, linear advancement of human control and possibilities (Bowers, 1993; Kohn, 1992). A community as part of a sustainable society would involve a group of people who recognize the connections
between themselves and the habitat which supports them (Orr, 1992). This group would share a common purpose while showing respect for the individual differences which make the members of the group unique. The group would recognize the obligations they have to all aspects of the land community of which they are a part (Leopold, 1966). A community would also share decision making and the responsibility for the outcomes of those decisions (Berman, 1990). Students would learn that it is through community building that they might affirm themselves, find the self esteem, and achieve liberty.

Building a sense of community through the classroom is something that must be a conscious effort (Barcena, et al, 1993; Lickona, 1993). Future generations will not understand the common good without experiences in a caring, affirming, and responsible community. Unfortunately, most classrooms today stress individualism and competition while relegating cooperation and communal obligation to secondary status (Goodlad, 1984; Kohn, 1986, 1992). Students must learn how to collaborate in efforts to handle conflict situations. Collaboration requires the ability to listen to the perspectives of others and understand the messages that others are sending. Collaboration also requires that students obtain the ability to express and assert themselves without alienating others (Katz and Lawyer, 1985). It is through this collaborative process that we might best reach communal goals and maintain the relationships essential to filling our needs and meeting our obligations.
The third quality which should be stressed by education for sustainable development is liberty. Durkheim (1973) believed that it was through reflection and the enlightened acceptance of the conformity required of social life that the individual would find liberation. Liberty is afforded those who understand and willingly assent to the moral dictates of the community.

Liberty finds its seeds in the elementary classroom when teachers structure relationships which foster the self-esteem of the child. Teaching which builds the competency and subject mastery accentuates feelings of self-worth in the child and helps create self-esteem (Glasser, 1990). The affirmation which extends from the teacher building self-esteem provides the foundation of a community of caring and respectful children (Benninga, 1991; Lickona, 1991a). It is much easier to care for, respect, and support others when the child feels good about himself (Lickona, 1988). It is through this affirmation by the group that the liberty of the individual extends. In essence, ethical behavior cannot occur without freedom, but to become free and act ethically an individual must accept the limitations placed upon their freedom (Mische, 1993).

The principle of democratic inclusion forming the cornerstone of communal morality extends from the liberty of the individual. Students should gain experience in the use of the democratic and participatory methods of decision making. It is through this modeling of communal organization that the balance
between liberty, equality, and solidarity might be struck.

literacy

Students must become literate in the ecological, communicative, and numerical facets of life in a sustainable society. To become responsive to the needs of others in the face of a morally pluralistic society, students must become aware, knowledgeable, and skilled (Ramsey, et al, 1992 and 1989). The filters through which students screen their reality must include an awareness of the ecological nature of the societal problems dominating the front pages of their newspapers. Awareness provides the attention which might eventually lead to the motivation to change. Knowledge of the ecological structure and function of the environment is essential to effective problem resolution and a change toward sustainability. More than just ecological vocabulary is required, however, as students need to understand how to attain ecological literacy (Ebert-May, et al, 1993). Students must also become skilled in the procedures that will allow them to take action in response to their needs and the needs of others while meeting their obligations to life. (Usang, 1992).

To become aware, knowledgeable, and skilled students require instruction which would allow them literacy. Students require ecological literacy to understand the interconnections of all facets of existence. The dominant conception of the world presently separates humans from nature and holistic understanding (Merchant, 1980). This conception is part of the instruction
received in our schools (Bowers, 1993). If education were focused upon sustainable development, students would come to view themselves as being embedded in the ecosystems which sustain them (Ebert-May, et al, 1993).

Communicative literacy becomes more and more important as human population increases and the stress upon ecological systems grows. Without the ability to listen to other perspectives and communicate their own positions, students will not be able to participate in the resolution of moral dilemmas which face future generations. As our obligation to life and the fulfillment of needs are tested by the strain humans place upon ecosystems, our ability to communicate and understand each other is of paramount importance.

The third form of literacy required of students is numerical understanding. Students prepared for sustainable development must understand the relationship between quality and quantity. Without numerical literacy future generations will not understand the power and limitations of quantification. They will lack the understanding of how numeracy might help them analyze and investigate ecological problems. More importantly however, they require numerical literacy to understand the limitations of quantification when meeting our obligations to life.

What qualities should preservice teacher preparation accentuate so that teachers might help school aged students become active participants in a sustainable society?

Teachers must be able to blend an integrated knowledge of holistic topics with teaching and communicative skills. This
blend of skills and knowledge allows teachers to foster ecocentrism and sustainability through classroom relationships.

**Knowledge**

Teachers must understand the connections between culture, communication, and ecology. These connections include the understanding of relationships between quality and quantity, rights and obligations, and time and space. Along these same lines, teachers must also be ecologically, communicatively, and numerically literate if they wish to provide students with the opportunity to gain literacy in these areas. Teacher education should concentrate upon this type of holistic knowledge and prepare teachers to instruct their students in obligation to life principles.

**Teaching skills**

Teaching requires a number of skills which connect the knowledge students should obtain and the methods through which they might best obtain that knowledge. It is critical that the process of teaching be included as part of the cultural information transferred to students. Although the non-neutrality of the teaching process is well understood (Goodlad, 1984; Purpel, 1989), there appear to be few changes in the teaching process that would promote the active citizen participation required of life in a sustainable society and morality based upon our obligations to life. There are several questions that will help direct the course of teacher preparation.
1. How to establish discipline in the classroom? The conception of what is morally acceptable in a sustainable society must be clearly explained and modeled for students. This process must be age specific, however. The emphasis in elementary school must be upon developing self respect. It will be much harder for children to understand respect for others if they don’t respect themselves (Lickona, 1991a). Teachers must make it clear that putting others down will not be tolerated. This orientation takes on both explicit and implicit ramifications as the teacher cannot model disrespect through tracking or other competitive activities and structures which inhibit the development of the child’s self-concept. The mastery of content builds self concept and also provides the students with the guidance to understand the importance of quality (Glasser, 1990). If the content covered by schools is important it should be learned regardless of the time taken to achieve mastery. It is well understood that students learn at different speeds and often through different techniques (Vickery, 1990). Part of the discipline that teachers must enforce is the insistence that content be learned. The student learns through this type of discipline that quality effort is important and achieves self respect from knowing they have mastered important content (Glasser, 1990).

Discipline requires that students recognize the needs of others and their obligations regarding filling those needs. The discipline applied and modeled by the teacher should include emotional and cognitive aspects of a moral life in a sustainable society.

Junior high students require the discipline which demonstrates to them the requirements of life in the community which extends beyond the classroom. It is during this age that individuals begin to develop patterns of thinking about community and others (Lefrancois, 1972). The experiences junior high students will receive in the community should be guided by teachers who understand lead management techniques for things, other species, and humans (Glasser, 1990). Discipline at this age should also involve the prohibition of disrespect for others and the land. Teacher must insist upon quality in the efforts made by the students in the community.

Senior high school students should be afforded the opportunity to experience the discipline required of life in a participatory society. Teachers in this type of school setting must have the tolerance and understanding to share power with the students. The discipline required of a democratic society is not easy, but must be modeled by teachers. Students will not learn responsibility unless they are provided opportunities to experience
responsibility. This type of learning environment will require great restraint by teachers to avoid a paternalistic approach which inhibits the development of liberty and open communication. Students will come to recognize that their autonomy extends from the sharing of power and group affiliation.

Preservice teacher education should provide teachers with an understanding of how discipline is required of life in a sustainable society. This understanding will not, however, be acquired by preservice teachers taking a course in discipline. Understanding of this type can be achieved through holistic, integrative, and practicum studies where discipline can be directly observed and experienced. Teachers should be consistent, fair and skilled in explaining why the students must comply with community rules.

2. How might teachers promote group affiliation and responsiveness to community problems? The promotion of group affiliation and a caring attitude in students can be promoted and modeled by teachers. It is through the development of group affiliation that students can develop a sense of the common good (Berman, 1990). As with discipline, the promotion of group affiliation can be best accomplished by emphasizing different aspects of social consciousness at different ages.

Elementary school is an appropriate time to teach the basic social skills of cooperation, listening, and presentation of self in an affirmative manner. Students of this age should have shared goals, participate in group efforts, and recognize the accomplishments of others in the group (Lickona, 1991a).

Junior high school students should become involved with community activities and in-school service. These efforts will help students understand the work required for life in a responsive community. Completed efforts within the community give students a sense of accomplishment and engagement with community. Students at this age should also begin the study of the land community in which they are embedded.

Senior high school students should explore issues that are relevant to their lives. Issues such as environmental destruction, crime, war, poverty, and hunger are not commonly a major part of the senior high school curriculum (Purpel, 1989). These issues should be studied in depth with action strategies included as a part of the study (Hungerford and Volk, 1990). Engagement with others should be a part of this exploration as action skills become a part
of the students education. Negotiation skills are also stressed along with the study of environment and development. Senior high school students would become actively involved with the governance of the school community.

Teachers must be skilled in creating cooperative, non-competitive learning experiences. The ability to listen is critical for teachers at all levels as students must believe that their voice is heard (Freire, 1989). Teachers must be accomplished in leading activities which allow the group to affirm the accomplishments of each individual (Glasser, 1990). This affirmation creates a strong sense of group affiliation and solidarity.

3. Teachers must understand how to create learning situations in which students take an active role. How can teachers create a learning atmosphere where students learn by actively participating? The passivity found in our present conception of democracy is an extension of the passivity fostered in U.S. classrooms. The process through which students learn is as important as the content taught and organization of schools. Although the acceptance of authority is an important part of the discipline students should learn in school, the balance for authoritarianism is the questioning of authority through the democratic process. Active participation in the democratic process should be part of the learning that takes place in schools. The junior high school years are the appropriate time for students to begin to learn about democracy and voice. The senior high school is the appropriate time for students to actively participate in the running of a democratic community.

4. How should teachers share power so that collaborative effort is made to solve community problems? There are very different approaches to the sharing of power at the three general age groupings. The organization and distribution of power is much different at elementary, junior high, and senior high level.

As stated earlier, the elementary years are a time for students to learn the discipline that is expected of them for life in a sustainable society. Presently, the elementary schools stress individualism and accentuate the separateness of the individual. Teachers promote these characteristics through emphasis upon competition and activities that are meant to achieve self-actualization. The liberally oriented educators so prominent in the teaching profession (Su, 1992) often include a sense of community, but the emphasis is upon the development of rational self-actualized individuals (Bowers, 1993, Dewey,
1902). The individualism that is presently reinforced in elementary schools helps create the foundation for future egoistic orientations.

The use of power by the teacher plays a critical role in creating a sense of community within the classroom. The authority of the teacher must be used to stop name calling and exclusion of other children (Lickona, 1988). In addition, the process of grading must be changed. Grading is presently a tool used by teachers to control students and as such is an instrument of the teacher's power (Purpel, 1989). The formative aspects of grading should be accentuated by teachers. Children can build their self respect by mastering subject material. Learning success should be a major part of the school child's day. The emphasis upon formative evaluation as a part of demonstrating learning success requires more of the teacher and the students. The grading process and a teacher's power becomes less coercive and exclusionary when a formative, mastery style of evaluation is used (Glasser, 1990; Purpel, 1989; Vickery, 1990).

Junior high school students seem to incessantly test the authority and power of teachers. This age group requires a strong model from the teacher demanding that students respect the differences between community members. As with elementary school, grading should be primarily formative in its application. The sense of fulfillment derived from meeting common goals by means of student involvement in the community can become a source of shared power.

Senior high school should provide the students with an exercise in the distribution of power. The excessive paternalism found in U.S. high schools today renders students impotent and passive. By the same token, the liberalism found in these same schools provides students with individual freedoms, but little responsibility for the exercise of those freedoms. As students, teachers, staff, administrators, and school board members share the control of the senior high school; students will learn what is required of life in a participatory democracy. This is a huge shift in the power relationships found in schools. Senior high school students would move from being the most powerless people in U.S. society to active members sharing a voice in the learning process.

5. How should teachers evaluate the cognitive, affective, and psychomotor growth of students? The discussion of power relationships described in question four provides some indication of the evaluative process required of teachers. It is important to recognize the difficulties with trying to quantify the growth of understanding and
knowledge in children, but this is not to say that evaluation is not important or necessary. The use of portfolio review represents a superior form of evaluation than the single summative final exam or achievement test. Portfolios are time consuming, but superior because they represent an inclusive review of previously used formative types of evaluation.

Beyond the emphasis upon formative evaluations, teachers must remove the coercion from the grading procedure. Bad grades are a means of coersive or punitive control, divisive in their effect, and demonstrate the failure of our schools (Purpel, 1989). If we wish to have quality schools, bad grades must be only temporary representations of uncompleted learning (Glasser, 1990). Grades should not conform to a curve. Similarly, students should not be required to compete with each other for grades. Grading systems in which some elite students succeed while the majority of students receive C, D, or F grades are illustrations of educational systems focused on failure (Glasser, 1990). If the material is worth learning, C grades are not acceptable. Students receiving grades of C or below must learn the material. These students require a teaching approach which is more conducive to the way in which they learn best. If the material is worth learning, the lowest acceptable grade should be a B (Glasser, 1990). Any grade below the B level represents a failure on the part of the teacher and the school to provide the quality education required of life in a sustainable society. The emphasis in this type of society is quality and the evaluation of student performance, schools, and teaching should have the same emphasis. In this type of education, students become an active participant in the evaluation of their efforts. Evaluation of this type encourages the partnership of teachers and students in the learning process (Freire, 1989). In this way evaluation loses its coersive nature in favor of a collaborative effort in the pursuit of quality education (Barton and Collins, 1993; Kohn, 1986; Purpel, 1989).

The evaluation of the affective domain provides students with the understanding that what they feel and what they value is important to their schooling. Our present emphasis upon quantitative evaluation removes the importance of reflection and the valuation of societal norms by students. The portfolio approach to evaluation allows students to express their feelings. This approach verifies to the students the importance their society places upon quality (Barton and Collins, 1993).
6. How should teachers be held accountable for the preparation of students for life in a sustainable society? The way to achieve effective teaching is not by increasing the requirements made upon teachers as conservative reform proposals such as America 2000 suggest. These increased requirements take the form of nationalized student achievement tests, standardized teacher certification testing, and an increase in mandatory curricular requirements. Calling for more controls serves the needs of the political establishment and education elites much more than the needs of students or teachers. For instance, the economic problems of the country can be explained as resulting from education's growing ineffectiveness (Giroux, 1989). Those in control of education fear a loss of power that comes with involving students and teachers in the evaluation, formation of curriculum and quality issues (Glasser, 1990). Unfortunately, this nearly universally applied top-down industrial model of educational control causes resentment, resistance, coersion, and the acceptance of low quality teaching and learning (Etzioni, 1991; Glasser, 1990).

Teachers must be responsible for the activities and learning occurring under their care. However, the school level is the appropriate level to demonstrate the quality required. The skills and knowledge required of quality teaching can be learned, but what needs to be accentuated in schools is the teacher's care for students and the teacher's hard work to ensure that students learn. The development of teaching skills, a caring attitude, and hard work are not brought about by coercive, top down, accountability imposed by the state, or by a national testing program. If teachers are allowed to evaluate their own teaching, given the time to improve their skills, provided with models of effective teaching, and a school atmosphere in which they have a voice; the quality of instruction will improve. In this fashion accountability becomes much less important while the quality of instruction improves.

**Preservice Teacher Preparation Curriculum**

The preparation of teachers is often separated into general education and professional studies components. Separations of this type represent an organizational form of Cartesian logic suggesting that the material to be known is separate from the mind of the student or teacher. In this scheme man is separated
from nature (Bowers, 1993).

In the preservice teacher education for sustainable development described here, the professional and general study portions of the curriculum are integrated. All of the instructors who work with preservice teachers should take part in the preparation of teachers for an educational career. Although the purpose of this chapter is to describe the curricular content for preservice teachers, the process of education must be viewed from an ecological perspective. Educational structure, teaching process, and curricular content are important to this perspective.

**Teacher Literacy**

The Literacy component of the curriculum for preservice teachers would provide teachers with the knowledge filters through which a sustainable society might be shaped. Ecological, communicative, and numerical filters will help potential teachers recognize their participation in an integrated and inter-related ecological system. The emphasis in the literacy component is upon the interconnections of knowledge, holistic content, and learning which focuses on the relationships between material, student, and teacher.

**Ecological literacy**

Hardin (1985) stated "We can never do merely one thing." (p. 58) The growing number of people in the U.S. and on the earth multiplies the importance of Hardin's assessment. As human numbers increase, the need to understand the relationships
between the land and life forms also increases. The changes in the land created by humans have been dramatic. These changes are important because they have occurred in such a short period of time. Within the scope of our limitations, we need to try to understand the consequences of our actions and act in such a way that the principle of sustainability might be served (Usang, 1993).

The ecological literacy component of teacher preparation would seek to provide teachers with a ecological perspective through which decisions might be filtered (Ebert-May, et al, 1993). This ecological mentality is essential if we are to escape the excessive anthropomomorphism which presently dominates the land/human relationship (Bowers, 1993). What follows is a brief description of the courses which would help bring about an ecological perspective.

1. History From an Ecological Perspective (3 Credits)

   It is often said that history is written from the perspective of the winners. Unfortunately, history is rarely written from the perspective of the relationship between humans, other species, and the land. The historical interaction between culture and habitat should be recognized and understood. If history continues to be conceptualized as only the story of human thought, human wars, human technology, or human artistry; we will continue to think of history as a linear march of human progress.

   An ecological perspective of history would allow preservice teachers a better understanding of how cultural assumptions and patterns reflect the human/habitat relationship. The changes in these assumptions over time might be then placed in an ecological perspective through which change toward a sustainable society might be better understood.

2. Land Community (6 Credits)

   Bioregional study is the core of this extended course. The course would span two semesters and require several additional weeks of outdoor experience during a summer. Students would
actively participate in nature study, learn the names and natural histories of plant and animal species indigenous to the region. Students would also become aware of the relationship of humans to local habitat. Study would include the uses of resources of the bioregion. The two semesters of study would also allow for a perspective of seasonal changes in the bioregion. Although some time might be spent in a traditional classroom setting, the class would primarily meet on the land to be studied.

The outdoor experience would entail two weeks of living in a more intense relationship with the land. The experience could involve canoe or hiking trips. Students would sleep on the ground, drink water from lakes and streams, and cook their own meals. Low impact living skills would be stressed. Edible plants from the area of study would become part of the student’s diet.

3. Ecology (3 Credits)

The study of ecology would provide preservice teachers with a background in the structure and function of nature. Ecosystems would be studied to provide students with the relationships between natural properties, forces, and pathways. Energy flows and biogeochemical cycles would be studied. Population factors and ecosystem change and stability would also be covered. Preservice teachers would learn how ecological knowledge is produced by participating in the process of ecological research (Ebert-May, et al, 1993).

4. Sustainable Development (3 Credits)

The study of ecosystems and the land community would be extended to include the ethical, political, and economic relationships humans maintain with the land. This course would involve students in the study of change and homeostasis in the human/habitat relationship. Underlying assumptions and systems of justice concerning that relationship would be studied with sustainability used as a guiding principle for determining ethical behavior.

5. World Geography (3 Credits)

Because of the growing need to understand global relationships, preservice teachers need an integrated background in physical and cultural geography. The speed at which information is transferred from all areas of the world creates the need for a much better understanding of global connections. The inequities between geographical areas are also significant and should be studied.
6. Spirituality and the Environment (3 Credits)

The impact of spirituality upon the environment is of great importance. Schools have often shirked from the topic of spirituality because of the emphasis placed upon individualism and freedom of religious choice. The typical response has been for institutions to provide inventory courses covering religious affiliations and customs (Bowers, 1993).

The purpose of a course which investigates the impact of spirituality on the environment is to connect the discipline that spirituality provides with an integrated conception of humans and habitat. Ecocentrism requires an ecological mental approach in which spirituality is not separated from other relationships (Bateson, 1972). Spirituality becomes part of the whole relationship of humans in environment.

Spirituality is a part of the ecological crisis faced by humans around the world (L. White, 1967). Yet, some traditional forms of spirituality have not fostered individualism and the exploitation of resources. The study of traditional spirituality may provide insights into transforming our individualistic forms of spirituality into more ecocentric forms.

7. Health and the Land Community (3 Credits)

This course serves to help students understand the relationship between ecosystemic health and the wellbeing of all life. Cultural myths concerning health are investigated with the connections between different ways of knowing and conceptions of health covered.

Communicative literacy

The emphasis on communicative literacy in preservice teacher preparation results because of two primary factors. First, U.S. schools and universities are institutions that are important in the transfer of culture (Bowles and Gintis, 1976). The relationships and expectations of present and future generations are impacted by these institutions. Although television has become a powerful institution in the transfer of cultural relationships (Deets, 1993; Larson, 1987; Mazrui, 1993; Sy, 1993), a critical/social assessment of education leads to the conclusion that teachers transfer cultural norms and influence
the formation of individual values (Feiman-Nemser, 1990).

Second, schools and colleges play a critical role in the transfer of language skills and the conceptual way in which knowledge is organized by our society (Apple, 1993; Bowers, 1993). As with many facets of socialization and the learning of culture, much of this cultural foundation created by language and the organization of knowledge is unquestioned (Ehrenfeld, 1981; E. Hall, 1976). We are beginning to recognize the need to change our social organization because our present mode of production does not fit the environmental circumstances which limit that mode’s effectiveness. As the need to change becomes more apparent, many of the cultural assumptions represented by language and knowledge must change (Meisner, 1993). Teachers require a much different and more complete understanding of language and knowledge if they are to help create a sustainable society. The following is a list of courses which would help preservice teachers gain the knowledge and skill required for educating for sustainable development.

1. American Literature/American History (6 Credits)

The study of American Literature and American History should be combined in a two semester course which might allow preservice teachers a more integrated understanding of American culture (Lickona, 1991b). This course should stress the connections between literature and history from varied perspectives. It is through these connections and perspectives that teachers might become grounded in the cultural metaphors which would help them become more culturally literate (Lickona, 1991b). Literature from native American writers should be included as examples of contrasting views of human/habitat relationships. Through the examination of American literature and history perservice teachers should come to understand the influence of industrialization on the mindset of people in U.S. society.
2. Composition (6 Credits)

Two semesters of academic writing will help preservice teachers express themselves through writing. This requirement is typical of academic writing requirements presently found in many institutions.

3. Reflective Listening (3 Credits)

The ability to listen to others is a skill often lacking in teachers as well as members of U.S. society. Listening involves the ability to follow the thoughts and feelings of others and understand the perspective of others. Reflective listening is a technique which allows the listener to provide an individual feedback which signifies that the message has been received and understood (Katz and Lawyer, 1985). This type of listening lets another person feel that you cared enough to listen. In addition, reflective listening helps others express their emotions and articulate their positions more clearly. Listening skills provide a foundation for teachers to deal with problems and address the needs of others.

4. Communicative Competence (3 Credits)

It is important that teachers understand the assumptions behind the language/metaphor/nature connection. Replacing the anthropocentric conception of the universe which schools now foster requires an understanding of the metaphorical nature of language (Bowers, 1993; Meisner, 1993). Humans use communication as a cultural means of defining the relationship between humans and habitat. A shift toward ecocentrism requires that we understand this relationship between language and social organization. The shift toward ecocentrism also requires that we change the cultural communication we provide our youth to more ecologically oriented metaphors (Meisner, 1993).

Gaining communicative competence requires that teachers investigate the interactive system of information exchange of which humans are a part (Bowers, 1993). An ecology of mind through which humans communicate should be understood as metaphorical constructions (Bateson, 1972). It is through these metaphors that individuals understand their group’s relationship to the environment. These metaphors serve as maps which require revision if we are to live sustainably (Milbrath, 1989).

Communicative Competence is a course that might provide teachers with the knowledge and skill to help their students understand the nature of a sustainable society by stressing the political and non-neutral aspects of language (Bowers, 1993).

In addition to the emphasis upon language, this course would also serve as an introduction to the non-written forms of communication which humans often take for granted (Poyatos, 1983). Communicative competence involves the understanding and
use of such things as body position, voice inflection, facial expression, and the positioning of individuals within a group.

5. The Morally Responsive Community (6 Credits)

The libertarian and liberal philosophies so dominant in the U.S. today stress the individual as the cornerstone of morality and justice. Libertarians often hold that communities are a social burden which must be endured. In this conception of justice, community wellbeing is a compilation of the fullfillment of an individual’s desires which are best advanced by limiting the restrictions upon individual freedom (Friedman and Friedman, 1980). Liberal philosophies hold that communities are more than a gathering of egoists, but that the community is secondary to the rational individual (Bowers, 1993). The individual conception of rights still predominates in this liberal conception of justice (Etzioni, 1991).

The morally responsive community focuses upon the shared values and ways of knowing found in the community. Rational choice is de-emphasized as individuals are partially defined by the communities in which they are embedded. Because of shared understanding and values, individuals living in a responsive community seek the common good rather than individual self-actualization.

Two courses of a semester in length entitled The Morally Responsive Community would allow preservice teachers to participate and share in the common good of the community in which they are embedded. Students would study local history and local governance. Student would become observers of the local systems of distributive and restitutive justice. They would participate also in activities which would serve the common good of the community. Big Brother or Sister programs, Housing for Humanity, projects like LA Works (Dreyfuss, 1993), and work in sheltered workshops are examples of community oriented efforts in which students would become actively involved.

6. Aesthetics (6 Credits)

Participation in some form of artistic expression should be required of all preservice teachers. Art, music, dance, poetry, and theatre provide people with a medium through which they might express their creativity. These forms of expression also provide a means of defining the human/habitat relationship. While this expression takes place within the context of our culture, the opportunity for creativity can increase our understanding of the quality of life and our spirituality (Copeland, 1988).

All too often in U.S. culture, we become passive observers rather than active participants. Requiring participation in aesthetic endeavors would help teachers become more sensitive and aware of the relationships of which they are a part.
7. Worldview and the Sustainable Society (3 Credits)

The impact of Cartesian thinking is apparent in U.S. schools through the emphasis upon linear methods of problem solving, the fragmentation and specialization of the curriculum, and the separation of students from nature. Later, the "Enlightenment" provided Western culture with its orientation toward rational control of existence through the use of technology and progress (Bowers, 1993). Cartesian and Enlightenment influences on our worldview provide the theme of our mechanized society: the autonomous individual as the originator of meaning (Rifkin, 1991). This emphasis upon the individual formation of knowledge, ideas, and feelings stimulates anthropocentrism and the separation humans from nature found in our present society. Because the individual is the basis of meaning in our present worldview, our attempts at environmental education are typically presented in anthropocentric language making ecocentrism even more difficult to initiate (Bowers, 1993; Meisner, 1993).

This course would make students aware of the assumptions and hidden meanings associated with U.S. culture. It would provide preservice teachers with an introduction to the teacher's role in the transmission of culture. For change in cultural patterns toward ecocentrism and sustainability to occur, many of the implicit facets of our culture must be challenged (Milbrath, 1989). It is important to recognize that the implicit parts of our culture which are not challenged are also important, however (Bowers, 1993). In other words, both the questions we ask and those we don't ask are important (Chomsky, 1987). The principle of sustainability and our obligation to life should guide the assessment of our implicit culture.

8. Prejudice and Discrimination (3 Credits)

Teachers should understand the extent and nature of racism, sexism and prejudice in both U.S. and global relationships. Dominant and subordinate relationships are analyzed as part of a web of power relationships effecting social groupings. The wounds of racism, sexism, and speciesism which cry for healing inhibit the prospect of our society becoming sustainable (W. Berry, 1989).

The quest for superiority and the avoidance of responsibility is engrained in the American psyche (W. Berry, 1989). We have been indoctrinated into the belief that inequities in power are inevitable and justified because of our meritocratic scheme of justice (Wenz, 1988). Those with economic and military power deserve their superior position because they are superior individuals. The desire for superiority has created a need to use others and the land for economic ends. Prejudice and discrimination become another means of justifying excesses in white, male power (Collard, 1989).
Preservice teachers should be exposed to a theoretical and descriptive study of prejudice and discrimination in America. It is through this type of study that the assumptions and inequity of starting position which form the basis of meritocratic justice in the U.S. could be exposed. The freedom of all people from prejudice and discrimination cannot be separated from the sustainability of our society and our obligations to life (W. Berry, 1989).

9. Communicative Technology (2 Credits)

Preservice teachers should become skilled in handling the communicative technology which will become a part of their instruction. Communicative technology would provide teachers with preparation in the selection, use, and production of audiovisual instructional materials. The use of computers in the classroom would also be included in this course.

Numerical literacy

Several courses are required of preservice teachers regarding quantitative analysis of human/habitat relationships. These courses provide teachers with a background in the strengths and limitations of numerical analysis. The required courses which would provide a numeracy filter for teachers include the Quantitative Basis of Understanding and Environmental Accounting.

1. Quantitative Basis of Understanding (3 Credits)

This course would cover fundamental mathematical concepts. Students should be introduced to sets, logic, numbering systems, and statistical methods. The use and purposes of mathematics should be covered with strengths and limitations of quantification covered.

2. Environmental Accounting (3 Credits)

This environmental accounting course would provide preservice teachers with economic theories for renewable and non-renewable resources. Students would receive exposure to the relationships between economic growth, poverty, environmental degradation, and sustainability. This course would focus on the quantification used in the accounting of economic growth and environmental impacts. Comparisons between GNP figures and such accounting measures as the Index of Sustainable Economic Welfare (Daly and Cobb, 1989) would be used to demonstrate how different schemes for accounting might be used to describe welfare.
Practical Applications Of Education

The practical application of education involves three forms of study meant to provide preservice teachers with background and experience which would serve as an introduction to teaching. The three areas include integrative studies, practicum studies, and a student teaching experience.

Integrative studies

Integrative Studies are used to combine general content areas with pedagogical approaches. In this approach, preservice teachers become actively involved in evaluating the teaching they receive as part of their own education. Integrative courses are designed to provide preservice teachers with the connections between ecological, communicative and numerical literacy and the skills and knowledge required of effective teaching in those areas.

Studying education in this fashion allows preservice teachers to become critical of education and the teaching they are receiving as a part of their college instruction. Combining this critical analysis with reflection will foster a more practical study of teaching and learning processes. This type of organization also makes college instructors more accountable for their teaching.

Integrative studies are a series of one credit courses designed and taken in conjunction with other required courses. There are six of these courses taking the place of the methods courses typically found in present education curriculums.

A. Introduction to Teaching (1 credit)

This course introduces students to the characteristics of effective teaching and theories of learning. The development of individuals and community are included in this introduction. The preservice teachers analyze, evaluate, and reflect upon the teaching of all courses taken during the same semester. Introduction to Teaching should be taken in the first semester and should serve as the foundation for future critical analysis of teaching.
B. Teaching American History and Literature (1 credit)

The six credit combination of American history and literature is integrated with a course in the teaching of this content area. This course focuses upon the teaching of reading and culture through the analysis of history and literature (Lickona, 1991b). Preservice teachers are introduced to the role of the education process in providing students cultural literacy. The role of myths and storytelling are included in this course (Beringer, 1990). The Teaching of American History and Literature is taken in conjunction with American History/Literature I and Composition II.

C. Multicultural Education (1 credit)

This course is taken in conjunction with Prejudice and Discrimination and the course in World Geography. The cultural pluralism and the persistence of prejudice and discrimination found in the U.S. (Malcolm X, 1966) makes a course in multicultural education essential (Martin, 1985). Preservice teachers must become sensitive to the cultural composition of the students in their classes (Comer, 1988). The dramatic demographic changes occurring in the U.S. make education in cultural diversity essential (Gleazer, 1993). Teachers must also become knowledgeable and skillful in building classroom communities in which the common good is stressed (Lickona, 1991a, 1993).

D. Teaching About the Land Community (1 credit)

This course is combined with Land Community II to provide preservice teachers with experience and analysis of teaching outside the formal classroom. Methods for teaching outdoors and environmental appreciation are covered. Environmental interpretation and nature study are also part of this integration of pedagogy and knowledge of local habitat.

E. Integrative study for major concentration of study (1 credit)

This study is meant as a continuation of the Introduction to Teaching course with specific emphasis upon the preservice teacher's area of concentrated course study. This course is taken in conjunction with a course within this area of concentration. The attempt is made through this course to improve the communication between education and other specialized areas of study (Lickona, 1991b).
F. Evaluation in Education (1 credit)

This course provides preservice teachers with a practical assessment of the forms and effects of various evaluation techniques. Other courses taken during this semester are analyzed regarding evaluation. The course pays close attention to the power relationships inherent to the evaluation process. Strong emphasis is placed upon formative evaluation and the creation of teacher-made evaluations. Portfolios should become a required facet of the teacher education process (Barton and Collins, 1993).

Practicum studies

Practicum studies allow preservice teachers an opportunity to observe and research teaching in classrooms. Observations would provide teachers with a wide variety of programs, age groups, and classes. These studies would also allow colleges to establish connections with schools.

There are just three practicum courses required because of the problems with initiating contacts with schools and the number of preservice teachers involved.

A. Practicum Study of Conflict Resolution (1 credit)

This course would be taken in conjunction with the 3 credit course in conflict resolution and should build upon the reflective listening course taken in the first semester of academic study. This practicum would require preservice teachers to observe disciplinary approaches in schools, the use of negotiation and conflict resolution techniques in the classroom, and the use of autocratic means of conflict resolution. The practicum study of conflict resolution would not be limited to school settings, requiring preservice teachers to observe, discuss, and reflect upon college level conflict negotiations and local community conflicts.

B. Practicum Study of Democracy and the Community (1 credit)

This course would be taken in conjunction with the second level course in American History and Literature, or the 3 credit course in Democracy and the Classroom. The purpose of this class is to allow preservice teachers the opportunity to observe, discuss, and reflect upon the workings of democratic institutions and the democratic process. Democratic organization at local, state, and federal government levels are observed. Observation of democracy in the school setting and through media presentations would also be required. Democratic systems of
distributive and retributive justice are included in this practicum.

C. Practicum Study of School Children/Adolescents (1 credit)

This course requires the observation of school children, or adolescents taken in conjunction with course work in Psychology and Education. The age group observed would depend upon the teaching orientation of the preservice teacher. Reflection, discussion, and research are all part of this practicum. However, the emphasis in this course is upon the observation of the development of children. This course includes the development of a community orientation in children, self concept, sex roles as a determinant for behaviors, and especially morality in children.

Student teaching

The student teaching experience helps preservice teachers gain self assurance and provides the confidence and competence essential to their motivation. The taping of classroom activities should be used extensively as an analytical tool for improving teaching skills.

One change from the typical student teaching organization involves four days of teaching experience per week for the first half of the semester. Student teachers would meet on campus each Friday during this time to share experiences, review tapes, and reflect upon techniques (Lickona, 1991b). This weekly seminar would allow college faculty and supervising teachers a chance to guide the preservice teachers through workshops designed to improve discipline and instruction.

The Study Of Education

The study of education is meant to provide preservice teachers with the knowledge, skill, and philosophical background required for teaching in a sustainable society. Teacher preparation for sustainable development must by design concentrate on holistic knowledge and must follow an ecocentric philosophy. This preparation must stress the empathy, caring, and responsiveness required for obtaining the common good.
It is in this portion of the curriculum for teacher preparation that course requirements vary in accordance with the age group the teacher is preparing to teach. These age groups are broken down into elementary, junior high, and senior high school level. The following is a listing, description, and brief explanation of education courses required of preservice teachers.

1. The Classroom as a Moral Community (3 Credits)

The classroom should provide the emotional support needed by students to understand the meaning of a responsive community. The connections between self-respect, discipline, group affiliation, and individuality should be modeled in each classroom. The classroom should also provide an opportunity for the students to understand the connection between caring and the common good. Students should learn to cooperate and help each other through learning experiences.

Students should also learn about morality through the process of reflection. Exercises in reflection should be used extensively in the classroom to help students understand their obligations. Another essential part of the creation of the classroom as a model of a moral community is the emphasis upon democratic inclusion. All voices must be heard and all members of the classroom included in decision making processes (Lickona, 1988).

All too often schools stress individuality, competitiveness, and selfishness. Other students are too often put down as a means of boosting self esteem. Individuality and competitiveness are not necessarily bad characteristics. However, these traits should not be stressed by U.S. schools. Without dramatic changes in the evaluation process used by schools, the classroom will not become a moral community in which power is shared and justice is served. Students taking The Classroom as a Moral Community will investigate the relationship between justice and power in the classroom. They will also analyze methods of creating a cooperative atmosphere in the classroom, exposing inequity, and modeling responsiveness.

2. Education in the U.S. (3 credits)

This course is taken during the final semester before graduation and serves as a capstone seminar. The various philosophical orientations of teaching and current reform
literature are reviewed. The ethical ramifications of education for sustainable development should be discussed along with the limitations of education in solving societal and land community problems. There are many changes which education must address: the loss of cultural heritage, the breakdown of traditional family organization, the destruction of the land communities’ ability to support our culture of consumption, the de-emphasis of spirituality in U.S. society, the failings of U.S. society to meet an obligation to life, and the evolving conception of justice and moral standing. Education in the U.S. allows preservice teachers to discuss and write about these changes and to reflect upon their roles as teachers in regard to these changes.

3. Psychology and the Education of Children/Adolescents (3 credits)

This course includes content concerning the development of students. Preservice teachers interested in teaching elementary school would take a section of this course concerned with the education of children while teaching candidates for junior and senior high school would focus upon the education of adolescents. Course content would include the sexual, physical, moral, cognitive, and language development. These facets of student development are then applied to educational situations.

4. Elementary Level Requirements

A. The Teaching of Reading (6 credits)

The two semester course exposes preservice teachers to various approaches for the teaching of reading, writing, speaking, and listening in the elementary school classroom. Alternate strategies for teaching students with special needs are included.

B. Conflict Resolution and the Elementary Classroom (3 credits)

Conflict is an inevitable expression of the web of power in which we are embedded. During this course preservice teachers will investigate the definitions and perspectives on conflict, conflict resolution styles, and the costs and benefits of applying various conflict resolution techniques. The course focuses upon conflicts between individuals, but includes techniques for the resolution of conflicts in educational settings. The role of social norms, emotions, and values in conflict situations are demonstrated. Preservice teachers practice conflict management skills, assertion, and forcing win/win strategies through role playing exercises applicable to elementary school (Katz and Lawyer, 1985).
5. Junior High School Level Requirements

A. Conflict Resolution and the Junior High School Classroom
(3 credits)

This course covers similar content to Conflict Resolution and the Elementary Classroom, but uses role playing exercises applicable for the junior high school classroom.

B. Lead Management (3 credits)

Much of the management that takes place in schools creates problems of discipline and low quality. Teachers and administrators typically organize their management of students in a top-down, boss-management style (Glasser, 1990). This type of management is teacher dominated with the boss setting the standards for student behaviors and tasks without input from students. The teacher tells students what to do and rejects compromise or suggestions from students concerning the quality of work. The teacher evaluates the quality of the work without input from the students which usually results in the student’s just getting by, with minimally accepted quality (Purpel, 1989). Students resist the coercive nature of their relationship with their teachers and are punished for insubordination (Burbules, 1986). Through this process, the students and teachers become adversaries (Glasser, 1990).

Through the process of lead management, teachers involve students in the planning of work and the evaluation of quality. Models are shown to students of the quality expected of them. The teacher becomes a facilitator by reducing the coercion found in the classroom. Teachers attempt to eliminate the adversarial relationship between students and between teachers and students. (Glasser, 1990).

This course will provide preservice teachers with a background in how to manage their classroom communities in a nonadversarial and noncoercive fashion. Tape analysis of teaching styles will provide preservice teachers with the background in different styles of lead management. The organization of this course will also provide a model for preservice teachers of lead management.

C. Teaching Ecological Ways of Knowing

Teachers should help their students understand how to live in an ecologically balanced and sustainable fashion. This course will provide preservice teachers with knowledge and experience in teaching integrated ecologically related subjects. The course focuses upon how teachers might enhance the understanding and appreciation of the
human/habitat relationship. The use of myth and creative learning experiences are stressed (Beringer, 1990). Contact with habitat and experience in natural settings provides preservice teachers with an alternative educational structure from the methods and organization probably employed in their own education.

6. Senior High School Level

A. Teaching Communication Skills

All teachers at the senior high school level should be concerned with the development of student communication skills. Preservice teachers at this level must have competence and confidence in teaching writing, speaking, and listening skills. If high school students cannot express themselves effectively, they will not be able to enter into the dialogues required of life in a participatory democracy. This course should help prepare teachers evaluate and guide the development of student communication skills.

B. Democracy and Schooling

The education received by most preservice teachers has not provided them with experience in the use of democracy in the classroom. This course would include the historical relationships between democracy and the schooling process. The primary objective of this class concerns the practical applications of democratic processes in classroom. The use of the democratic principles of voice and non-exclusion are modeled through field experiences in schools. Lead management styles are also described and modeled for preservice teachers (Glasser, 1990).

C. Teaching Applied Ethics

The teaching of applied ethics is difficult because it requires teachers to have a background in both ethics and in an area of practical application. Many students feel that the education they receive is irrelevant to their lives. Relevant education often involves the investigation into topics falling under the general category of applied ethics. Unfortunately, teachers are often not prepared to teach this type of course. In addition, university courses in applied ethics often suffer because of the lack of qualified instruction (Bok, 1990).

Teaching applied ethics requires the avoidance of indoctrination possible when considering ethical issues. But, teaching applied ethics also involves the avoidance of moral relativism as students understand the different positions, but lack conviction (Bok, 1990). Proponents of
all major educational ideologies have problems with teaching applied ethics. Without the ability to teach applied ethics, teachers will be unable to guide their students toward an understanding of the equity issues inherent to sustainable development.

This course would help prepare teachers and bring the issues of sustainable development into the senior high classroom. This course would also include the teaching of general ethical theories, methods of issue investigation, and research concerning moral development. This course should provide preservice teachers with a background in the educational structures and procedures which might facilitate student understanding of ethical issues.

Teacher Preparation Curriculum

I. ECOLOGICAL LITERACY
   A. (3) History From an Ecological Perspective
   B. (6) Land Community (2 semesters, 1 summer)
   C. (3) Ecology
   D. (3) Sustainable Development
   E. (3) Health and the Land Community
   F. (3) Geography
   G. (3) Spirituality and the Environment
   (24 Credits)

II. COMMUNICATIVE LITERACY
   A. (6) American Literature/American History I and II
   B. (6) Composition (2 semesters)
   C. (3) Reflective Listening
   D. (3) Communicative Competence
   E. (6) The Morally Responsive Community (2 semesters)
   F. (6) Aesthetics (2 semesters)
   G. (3) Worldview and the Sustainable Society
   H. (3) Prejudice and Discrimination
   J. (1.5) Communicative Technology
   (37.5)

III. NUMERICAL LITERACY
   A. (3) Quantitative Basis of Understanding
   B. (3) Environmental Accounting
   (6)
IV. PRACTICAL APPLICATIONS OF EDUCATION
A. (6) Integrative Studies
   1. Introduction to Teaching
   2. Teaching American History and Literature
   3. Multicultural Education
   4. Teaching the Land Community
   5. Integrative study for course in major
   6. Evaluation
B. (3) Practicum Studies
   1. Conflict Resolution
   2. Democracy and the Community
   3. Study of School Children/Adolescents
C. (16) Student Teaching
   (25 credits)

V. STUDY OF EDUCATION
A. (3) The Classroom as a Moral Community
B. (3) Ethical Issues of Teaching
C. (3) Psychology and the Education of Adolescents, or
   Psychology and the Education of Children
D. (9) Level Specific Coursework
   1. Elementary Level
      a. (6) The Teaching of Reading
      b. (3) Conflict Resolution and the Classroom
   2. Junior High School Level
      a. (3) Conflict Resolution and the Classroom
      b. (3) Lead Management
      c. (3) Teaching Ecological Ways of Knowing
   3. Senior High School Level
      a. (3) Teaching Communication Skills
      b. (3) Democracy and Schooling
      c. (3) Teaching Applied Ethics
   (18 credits)

VI. CONCENTRATION AREA (18 Credits)

All preservice teachers are required to have an area of
concentration in which they study a topic in depth. This would
allow the preservice teacher the opportunity to study an area of
interest providing them an introduction in a specialized area.

PHYSICAL EDUCATION REQUIREMENT (no credit)

Physical activity is important to personal well being and is
required of preservice teachers. Students must be involved in
physical activity for three sessions of one hour duration each
week for each semester they are on campus. This requirement
could be filled by activities including college intramurals,
physical education classes, fitness or wellness centers, and
sports clubs or teams.
DRUG AND ALCOHOL EDUCATION (no credit)
All students are required to take a workshop in drug and alcohol awareness. Educational applications for problem recognition as well as teaching methods in the drug and alcohol subject area should be covered by this workshop.

CPR/FIRST AID CERTIFICATE REQUIRED (no credit)
Certificates in both CPR and First Aid are required for graduation. These courses must be Red Cross accredited. If these courses are taken on a campus, the credits received are not part of graduation requirements.

WRITING INTENSIVE COURSES (6 CREDITS)
Preservice teachers are required to take two courses that are designated as writing intensive courses meant to enhance their writing skills. Class size for writing intensive courses should be limited to 20 students. These courses would require that students write at least 20 pages of assigned writing. Opportunities for revision or multiple drafts must be included in these classes, and class time should be spent on writing skills.

SPEAKING INTENSIVE COURSES (6 CREDITS)
Teachers must be able to communicate effectively to others. Listening and speaking skills are critical to effective teaching and must be stressed as a part of preservice teacher education. Therefore, preservice teachers are required to take two courses that are designated as speaking intensive in addition to the reflective listening course. Class size is not limited for these courses, but 50% of the student’s evaluation must be based upon assignments where speaking plays a primary role. Audio and video tape presentations prepared by students may be used in place of speaking assignments if desired.

SAMPLE COURSE WORK BY SEMESTER

FRESHMAN YEAR
FALL (16 credits)
Composition I (3)
History From an Ecological Perspective (3)
Ecology (3)
Worldview and the Sustainable Society (3)
Reflective Listening (3)
Introduction to Teaching (1)

SPRING (16 credits)
Composition II (3)
Sustainable Development (3)
American History/Literature I (3)
Course in Concentration (3)
Quantitative Basis of Understanding (3)
Teaching American History and Literature (1)
SOPHOMORE YEAR

FALL (17 credits)
American History/Literature II (3)
World Geography (3)
Prejudice and Discrimination (3)
Environmental Accounting (3)
Land Community I (3)
Multicultural Education (1)
Practicum Study - Democracy and the Community (1)

SPRING (17 credits)
Morally Responsive Community I (3)
Spirituality and the Environment (3)
Course in Concentration (3)
Land Community II (3)
Conflict Resolution and the Classroom, or Democracy and the Classroom (3)
Practicum Study - Conflict Resolution (1)
Integrative study - Land Community (1)

SUMMER
Outdoor Education Experience (Part of Land Community II)

JUNIOR YEAR

FALL (15 credits)
Morally Responsive Community II (3)
Teaching Reading, Writing, or Student Involvement in the Community (3)
Communicative Technology (2)
Course in Concentration (3)
Psychology of Education (3)
Practicum - School study of children/adolescents (1)

SPRING (16 credits)
Student Teaching

SENIOR YEAR

FALL (16 credits)
The Classroom as a Moral Community (3)
Teaching Reading, Lead Management, or Teaching Applied Ethics (3)
Health and the Land Community (3)
Aesthetics (3)
Course in Concentration (3)
Integrative Study for course in Major (1)

SPRING (16 credits)
Education in the United States (3)
Aesthetics (3)
Course in Concentration (3)
Course in Concentration (3)
Communicative Competence (3)
Integrative study - Evaluation (1)
Implementation Of Teacher Preparation For Sustainable Development

The philosophical basis of teacher preparation for sustainable development as presented by this study represents a major shift in the philosophical orientation of both education and U.S. society. Similarly, the descriptions of the organization, process, and content of schooling and teacher preparation are much different than present U.S. education. These descriptions have been provided as an alternative to the educational tinkering which the present raft of reforms suggest. The implementation of the educational philosophy and the changes described by this study will not be easy. Some inclusion of education for sustainable development is evident in environmental education and science/technology/society curriculums. However, the concept of a sustainable society is in its infancy, and education for sustainable development is generally nonexistent.

One of the weaknesses of radical educational analysis is that although present educational practice is rejected, little is offered as an alternative (Feiman-Nemser, 1990). Another weakness of radical analysis is its narrow anthropocentric orientation (Bowers, 1993). Education for Sustainable Development, as described by this study, offers an alternative to the meritocratic, individualistic, and anthropocentric conceptions of both education and justice.

The motivation for change will come as the pathologies of our social organization increase ecological change. When we are no longer able to fill needs and meet obligations, the relevance
of change will provide the motivation for finding new forms of human/habitat relationships. Sustainable development will result from our recognition of the poverties which surround us.

The implementation plan regarding education for sustainable development requires much more time and effort than problem analysis and solution proposal. An implementation plan requires patience, perseverance, and an understanding of the complexity of the change process. Education for sustainable development would provide people with an understanding of the changes required of them, but much thought and effort is required regarding the implementation of this new type of education.
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