

## **Appendix for Faculty Handbook on How to Introduce Cultural Commons and Ecojustice Issues into Their Courses**

### **Appendix A “What Al Gore Missed: The Ecological Importance of the Cultural Commons”**

#### **What Al Gore Missed: The Ecological Importance of the Cultural Commons**

The recommendations for reducing consumerism that appear at the end of Al Gore’s book, An Inconvenient Truth, represent how language may contribute to enclosing the cultural commons. No one can deny that Gore’s list of behaviors for reducing consumerism is sound common sense. But a list of what thoughtful people are already doing, such as buying things that last, composting, buying local, and bagging groceries in a reusable tote bag, is no substitute for suggesting a more radical approach to reducing our dependence upon the consumerism that is contributing to global warming—which his book documents so well.

Gore does not mention the diversity of the world’s cultural commons, and how the intergenerational knowledge, skills, and mentoring relationships that are the basis of many of these commons represent community-centered alternatives to being dependent upon industrial food, entertainment, agricultural practices, healing, and other aspects of daily life that have been monetized. Gore’s silence about the ecological importance of the cultural commons should not be taken as a sign of his disagreement with this pre and post-industrial pathway of human history. A more plausible explanation is that his formal education failed to provide the language necessary for making explicit the local cultural commons-based experiences that are largely taken-for-granted. As most people reading his list of consumer-reducing recommendations are likely to be unaware of the importance of the cultural commons he overlooks, the question arises about the culpability of our public schools and universities. If the educational process does not provide students with the language necessary for naming and thus making explicit the cultural commons they will otherwise take-for-granted, they will be less likely to recognize when different aspects of the commons have been enclosed by market forces, and by a government moving closer to equating resistance to the market liberal agenda of economic globalization with terrorism.

The formal education of most Americans has left them in the double bind where participation in the daily practices and relationships of their local cultural commons have been relegated to the area of conceptual silence, while the language reinforced in public schools and universities is the language of the market place, technological innovation, expert systems, and media hype. Evidence of how widespread the public’s inability to name the different aspects of the cultural commons, and to explain why they are important in terms of the narratives that are often (but not always) sources of moral guidance, traditions of civil liberties, and skills and mutual supportive relationships that are alternatives to consumerism can be found by asking classroom teachers and most university professors what they understand about the nature of the cultural commons. I have found that most of them respond with blank stares to any attempt to discuss the cultural commons. A few books are now being written about the importance of the

environmental commons, as well as many articles that examine how different cultures are managing what remains of their environmental commons. This renewed interest in the commons has not influenced what is being taught in public schools and universities, as they are still in the grip of linguistic traditions that were either silent about the cultural commons—or were prejudiced toward them. To take the cultural commons seriously is to identify with what universities continue to designate as low-status and as the source of superstition and backwardness.

As pointed out in a previous essay, the metaphorical nature of language carries forward over many generations the analogs that prevailed at an earlier time of metaphorical thinking of how to understand something new. An example is the way in which E. O. Wilson and Richard Dawkins continue to reproduce in their writings the misconceptions of Newton and Kepler who assumed wrongly that all aspects of life could be understood as having the same properties as a machine. Few professors and even fewer classroom teachers understand how the metaphorical nature of the language they rely upon carries forward the misconceptions of the past. Unfortunately, many of these misconceptions are responsible for the silences and prejudices that characterize many people's relationships with their local cultural commons. In recent months we have witnessed important aspects of the cultural commons, such as the traditions of habeas corpus and the right to privacy, being enclosed with little or no reaction from the general public. Narratives of social justice struggles, as well as ethnic traditions related to the sharing of food and mutual support, are also being enclosed by the increasing reliance on technologically mediated communication and entertainment (e.g. cell phones, iPods, computer gaming, etc.).

If we examine the ideas, silences, and prejudices of influential thinkers in the West, such as Plato, Descartes, Locke, Smith, Spencer, and more recent philosophers, we find that they viewed local knowledge as a source of backwardness. They shared a prejudice that marginalized the knowledge systems of other cultures—which also reduced the possibility that we would understand the ecological importance of their cultural commons. What Plato, Descartes, and Locke reinforced is that there is nothing to be learned from traditions; and they, along with Smith, Spencer and recent philosophers such as Richard Rorty, reinforced the idea that words have universal meanings—quite separate from their cultural context. In effect, these early philosophers and political theorists elevated the use of abstract language over the vernacular languages built up over generations of place-based experiences. This legacy of abstract language and thinking is now used to justify the enclosure of the cultural commons around the world. This abstract language includes such words as individualism, private property, free markets, critical inquiry, progress, competition—which is the vocabulary of market liberalism. This liberal vocabulary is based on cultural assumptions still reinforced in most university courses. What this vocabulary marginalizes are the words essential to understanding the nature and importance of the cultural commons as representing alternatives to economic globalization. This alternative vocabulary includes a more culturally informed understanding of tradition, conserving an intergenerationally connected form of individualism, non-monetized activities and patterns of mutual support, moral reciprocity between the human and non-human world. It is, in essence, the vocabulary of connectedness and interdependency that is basic to how we participate in our local cultural and environmental commons.

Another way in which the language reinforced in our educational institutions contributes to the silence found in Gore's list of recommendations is that, contrary to the conduit view of language, the languaging systems of a culture reproduce its moral templates. Thus, learning the language of the culture also involves acquiring the moral templates shared by other members of the culture. Languaging processes are about how relationships should be understood and morally conducted. Key to this process is how words encode what is understood by members of the culture about the attributes of the participants in the relationships. To make this as simple as possible, if the word "woman" is understood as not having the attributes of intelligence and strength, then the moral code of the culture allows treating women as inferior to men. If the words "weed", "wilderness", and "desert" are understood as lacking positive attributes, then it is morally sound to eradicate the weed, exploit the wilderness, and to use the desert as a toxic waste site. The fate of the cultural commons has similarly been influenced by the moral templates reproduced in the high-status vocabulary reinforced in our educational institutions. If the phrase "cultural commons" has no discernable positive attributes, then it has no moral standing—and attention will be focused on the language that identifies the many manifestations of material progress—even though this form of progress is undermining the ecosystems that we and future generations rely upon. Gore's oversight must not be viewed as his failure to learn from his professors; his failure is in taking them too seriously and in reproducing their silences.

**Appendix B** Overhead that Presents How the Mechanistic Root Metaphor has Influenced thinking in a variety of fields over hundreds of years.

Analogies that encode the root metaphor of a mechanistic world

"My aim is to show that the celestial machine is to be likened not a divine organism but to a clockwork" Johannes Kepler (1571-1630)

"For what is the heart, but a spring; and the nerves, but so many strings; and the joints, but so many wheels, giving motion to the whole body...." Thomas Hobbes, from the Leviathan, 1651

Our conscious thoughts use signal-signs to steer the engines in our minds, controlling countless processes of which we're never much aware" Marvin Minsky, from The Society of Mind, 1985

"The scientific belief is that our minds-the behavior of our brains--can be explained by the interactions of nerve cells (and other cells) and the molecules associated with them" Francis Crick, from The Astonishing Hypothesis, 1993.

"As a major step toward toppling the final barriers separating people and computers, Apple has now introduced the first Macintosh computers based on Power PC processors" (promotional statement)

"In short, with molecular technology and technical AI (artificial intelligence) we will compile molecular-level descriptions of healthy tissue, and we will build machines able to enter cells and to sense and modify their structures" K. Eric Drexler, from Engines of Creation, 1986

"Like the computer, the human mind takes in information, performs operations on it to change its form and content, stores information, retrieves it when needed, and generates responses to it" Anita Woolfolk, from Educational Psychology, 1993

"The would-be writer in need of an idea can hop on the elevator and ride to the third floor where the 'splot' machine is waiting to offer a creative spark. Each pull of the handle delivers a randomly generated wacky sentence, some even illustrated, to provide that creative starting point for the story" Creative Writer, 1994 (software program produced by Microsoft)

"But another general quality that successful genes will have is a tendency to postpone the death of their survival machines at least until after reproduction"  
--and later in the chapter on "The Survival Machine": "Survival machines began as passive receptacles for the genes, providing little more than walls to protect them from the chemical warfare of their rivals and the ravages of accidental molecular bombardment." Richard Dawkins, The Selfish Gene, 1976

"The machine the biologists have opened up is a creation of riveting beauty. At its heart are the nucleic acid codes, which in a typical vertebrate animal may comprise 50,000 to 100,000 genes." E. O. Wilson, Consilience. 1998

**Appendix C** "Toward a Culturally Grounded Theory of Learning" from The False Promises of Constructivist Theories of Learning (2005).

### **Chapter 3 Toward a Culturally Grounded Theory of Learning**

What is surprising is the way in which Dewey, Piaget, Freire, the followers of Whitehead such as Doll and Oliver, and the critical pedagogy theorists think in terms of oppositional categories. In order to highlight the uncompromising correctness of their theories, these otherwise highly intelligent men rely upon sharply defined boundaries that have no relationship to daily experience. Dewey, for example, states that the opposite of experimental inquiry is the spectator approach to knowledge. Freire's oppositional categories are conscientizacao (roughly, critical reflection) and the banking approach to education, while Piaget sets autonomy over against heteronomy. For Doll, the opposite of his "open system" way of thinking is the closed system. Oliver also thinks in terms of opposites: education

either contributes to “becoming” or degenerates into “transferring knowledge.” Van Glasersfeld’s categorical statement that “knowledge cannot be transferred” exhibits the same habit of dichotomous thinking. Underlying these diverse examples of thinking in terms of opposites is a more deeply held and similarly unexamined cultural schemata that led these theorists to think of progress as the opposite of tradition—and, by extension, liberalism as the opposite of conservatism. It is interesting to note that this is a cultural pattern of thinking that duplicates mainstream Christianity’s radical separation of good from evil.

What is particularly surprising about this group of constructivist theorists is that they either claim a scientific basis for their ideas, or claim that the “process” nature of non-culturally mediated experience is the basis of their insights. Yet none of their rigidly defined oppositional categories has a basis in everyday experience—including their own embeddedness in the culturally mediated behaviors and thoughts that get them through daily life. Equally surprising is the way generations of their followers have accepted the division of their own experience into such conceptually neat, air-tight, and culturally uninformed categories.

To counter the major premise of these theorists about individuals and groups constructing their own knowledge, it is necessary to explain how the everyday reality of people is culturally constructed and sustained. This explanation also needs to account for how individuals are involved in this process, and for cultural differences. In short, I will show that the “cultural transmission model” they all reject is an inescapable aspect of learning the languaging processes of the culture an infant is born into. Furthermore, I want to explain that while there are examples of cultures and even teachers that are authoritarian and destructive of human potential, they should not be used as a basing for claiming that the transmission model of culture and its implications for educators can be ignored. The basic fact of human existence is that we are all nested in a complex cultural ecology, and the culture is nested in the ecology of natural systems. The point of making the effort again to think against the grain of the modern superstitions that make constructivist theories of education so problematic is to identify how the dynamics of this intergenerational “transmission” model can be altered by teaches in ways that reinforce cultural patterns of thinking and values that contribute to achieving eco-justice within the context of different cultures.

I have deliberately used the word “transmission” in order to clarify that I am arguing from a culturally informed perspective that the constructivist theorists reject. Yet I find the metaphor, when it is associated with a sender/receiver model of communication, to be deeply problematic. Now that I have made the point that I am challenging the most basic assumptions shared by the constructivist learning theorists, I will use the phrase “intergenerational renewal” as an alternative to “transmission” in making the case that what we experience as “reality” is culturally constructed—and that in varying degrees, depending upon the culture, the cultural patterns are given individualized expression that may lead to their modification. I also want to argue that intergenerational knowledge is, in many instances, a source of personal and community empowerment—and that many of the forms it takes represent sources of resistance to the spread of the western model of industrial production and consumption. Lastly, I will argue in the next chapter against a form of intergenerational renewal within the scientific community that is again using Darwin’s theory of natural selection to justify the superior fitness of a computer based “global intelligence” over the diversity of cultural knowledge systems.

There is a way of determining whether the sharing of cultural knowledge is an inescapable part of human existence, or whether it can be avoided by implementing one of a variety of constructivist approaches to learning. The first way would be to examine why the various constructivist theorists share so many cultural patterns that they have personally individualized in only minor ways. That is, can their own construction of knowledge be used to account for the patterns they share with other people who are socialized to write from left to right, use standard spellings, paragraphs, and capitalizations? Did all of the constructivist learning theorists individually originate the subject-verb-object pattern used by other speakers of English? Questions could also be asked about how, if knowledge is individually constructed, they share similar beliefs about a trial of a jury of peers, the need to stop exploiting workers, and the meaning of street signs. The list of shared cultural patterns could be vastly expanded, but these everyday examples of shared knowledge are sufficient for asking the question of why constructivist learning theorists present an explanation of how children learn that does not account for the tacit and explicit forms of knowledge they base their own lives on. As the classroom practice of their theories can have an important influence on the life chances of students, they and the teachers who try to implement their

ideas should be held to a minimal level of accountability: namely, that their theories accurately account for how students learn to be communicatively competent within the context of their own cultures.

Discovering that theorists seldom live by the theory they want other people to base their lives on should not come as a great surprise. But there is another reason for challenging the theoretical underpinnings of constructivist-based educational reforms now being promoted in countries around the world. If the constructivists are correct in equating the cultural transmission model with the spectator approach to knowledge (Dewey), with the banking approach to education (Freire), and the closed systems that lead to minds closed to the possibility of “becoming” (Doll and Oliver) then there is no reason for classroom teachers to be knowledgeable about the intergenerational knowledge that sustains the life of the surrounding communities. Indeed, learning about the traditions of the different cultural groups would be a waste of time for teachers who hold to the idea that students construct their own knowledge and values. Integrating the intergeneration knowledge of the community into the curriculum would be tantamount, according to any one of the constructivist theories, to undermining the students’ ability to move from a condition of cultural backwardness into what educational theorists like to refer to as the postmodern era. In addition to the misconceptions that underlie the ideas of all of the constructivist learning theorists, and their interpreters in colleges of education, their view of cultures represents another example of the hubris of western thinkers who view their mission as that of saving non-western cultures from their backward traditions.

The contradiction that is at the center of constructivist theories of learning, where the constructivist teachers approach to multicultural education largely takes the form of teaching tolerance while at the same time ignoring the importance of helping students acquire an in-depth understanding of the diversity of intergenerationally based knowledge systems, can partly be explained in terms of the role that language plays in influencing awareness —and what will be ignored. Aside from Vygotsky’s understanding of how language influences thought and the formation of individual identity (Vygotsky was aware of George H. Mead’s symbolic interactionism,) all of the constructivist theories had either a totally wrong understanding of language (Piaget, Doll, Oliver), or they viewed its role as reproducing old and thus oppressive ways of thinking (Dewey, Freire). In Knowing and the Known (1949,

which Dewey co-authored with Arthur Bentley, Dewey explains how language can get in the way of experimental inquiry in the following way: “the naming of the observation and naming adopted is to promote further observation and naming which in turn will advance and improve.” He goes on to say that “this condition excludes all namings that are asserted to give, or that claim to be, finished reports on ‘reality’” (p. 49). And we have only to recall Freire’s statement that “to speak a true word is to transform the world” to recognize how he, like Dewey, viewed language as one of the chief impediments to critical reflection and social change. What can be said on Freire’s behalf is that he had a partial understanding of the political nature of language.

If we are to develop an alternative to the constructivist theories of education that contribute both to the colonization of other cultures and to undermining the sources of resistance to the spread of the industrial approach to production and consumption that is having such a devastating impact on the environment, we will need to clarify the many ways in which cultures reproduce and renew themselves. Ironically, even though the constructivist theorists, as well as the professors of education and classroom teachers, can never exist apart from the cultural ecology of their time and place, their theories largely ignored the multiple ways in which thought, behavior, and identities are influenced by culture. As an alternative to thinking of the teacher’s role as facilitating the reconstruction of experience, emancipation from the oppression of the previous generation, becoming, and the attainment of autonomy through logico-mathematical thinking, I would like to suggest that we begin to think of the teacher’s role as a mediator in the process of what Jorge Ishizawa calls, intercultural and ( I will add) intergenerational renewal. Unlike the constructivist teacher whose primary mission is to facilitate change, the mediator role requires a profoundly different orientation. That is, the mediator needs to be knowledgeable about the culturally different forms of intergenerational knowledge—which is different from prejudging them as inherently backward and oppressive. And the teacher needs to be knowledgeable about the many ways in which the languaging processes in different cultures contribute to forms of intergenerational renewal that contribute to ecological sustainability—and to community and environmentally destructive patterns. That is, in adopting the role of mediator, the teacher has to be open to the possibility that traditions can be sources of empowerment just as they can be sources of exploitation and ignorance. Like the physician who needs to understand human



anatomy, and the lawyer who needs to understand the foundations of the law, teachers need to understand the cultural ecology that influences their ideas, values, and every aspect of classroom communication, as well as the cultural ecology of their students. That is, at the core of their professional knowledge should be a deep understanding of culture in all its varied dimensions. In the next section I will discuss aspects of cultural renewal that have particular relevance to understanding the teacher as an intercultural and intergenerational mediator.

### **The Cultural Construction of Knowledge and Personal Identity**

If this was a chapter on the history of theorists who wrote about the influence of language and patterns of social interaction on the child's thought, behavior, and self-identity, it would be necessary to start with the insights of Vygotsky, the Russian linguist and psychologist. The American who contributed much to the field of symbolic interactionism, George Herbert Mead, would also be included. But I will skip over their contributions in order to focus on more recent explanations of the social (I prefer cultural) construction of what people in different cultures take to be everyday "reality." The writings of Peter Berger, Thomas Luckmann, Mark Johnson, George Lakoff, Richard Brown, Edward Shils, and Gregory Bateson can more easily be translated into culturally informed pedagogical practices. Of the above, only Vygotsky is occasionally mentioned in constructivist textbooks, and the brief treatment his ideas are accorded leaves the impression that he is yet another supporter of Piaget's core ideas. As the current understanding of the constitutive role of language in the formation of different forms of cultural intelligence has advanced well beyond Vygotsky's pioneering work, I will focus here on the most recent insights.

There is a special need to highlight the role of language in facilitating intergenerational renewal that has significance for teachers who are making curricular decisions that contribute to lifestyles that are exacerbating the ecological crisis. Contrary to the thinking of the constructivist theorists, the primary issues that need to be addressed today have to do with a rapidly degraded environment that further contributes to the spread of poverty, the maldistribution of wealth that leads to patterns of hyperconsumption for a few and disrupted local economies for the many, and the loss of intergenerational knowledge that represents, in many instances, sources of resistance to the globalization of a consumer dependent lifestyle.

By identifying the characteristics of intergenerational renewal that are shared by all cultures, I hope to clarify the more limited yet essential role that critical reflection can play in

the process of intergenerational renewal. I also hope to clarify how the dominant beliefs of a culture can be based on the assumption that the present practices should fit the rigid and unchanging prescriptions borrowed from the past. While many people want to cite these examples as expressions of conservatism, I think it would be more accurate to call them examples of reactionary thinking. From time to time, I will refer to the specific beliefs and practices of different cultures in order to ground my explanations. For the most part, however, I will explain different aspects of the cultural construction and renewal processes that have particular relevance for rethinking the radically reductionist argument that critical thinking is the only way in which knowledge is acquired and reforms achieved. The starting place is to challenge what seems to be the linchpin in the various interpretations of constructivist approaches to education: namely, that knowledge cannot be transferred, but can only be constructed by the student through critical reflection, the experimental method, by becoming, and by achieving a certain stage of biological/cognitive/moral development.

If professors of education had taken seriously the Berger and Luckmann tradition of the sociology of knowledge, rather than the Marxist tradition that captivated the thinking of many educators from the early seventies until fairly recently, they would have found a more adequate explanation of the role of language in reproducing a culture's stock of knowledge. More importantly in terms of accounting for the silences shared by constructivist theorists about the nature of culture, Berger and Luckmann explain why individuals can re-enact, even individualize, cultural traditions without being explicitly aware of them as cultural traditions. In summarizing key insights about the constitutive role of language I will draw on the insights of other theorists as well.

Unlike Piaget's claim that language competence follows the development of cognitive structures, and Freire's claim that individuals must avoid the false words of previous generations by naming the world themselves, Berger and Luckmann point out that at the center of the relationships that constitute the individual's social (cultural) experiences are the multiple processes of communication. These include the non-verbal exchanges, the spoken and written word, thought patterns encoded in and communicated through the material/built culture (design of buildings, roadways, organization of public spaces, clothes, and so forth). In some cultures the plants, animals, rocks, wind, rivers, etc. also are understood as sources of communication.

In effect, Berger and Luckmann represent the languaging processes of a culture as its core constituting and sustaining characteristic. As they put it in The Social Construction of Reality (1967), a book that should be part of the teacher's professional studies, "everyday life is, above all, life with and by means of the language I share with my fellowman. An understanding of language," they continue, "is thus essential for an understanding of everyday life" (p. 37). As indicated above, what they refer to as language should be understood as the multiple languaging processes that encompass every form of communication—which will vary from culture to culture. Colors, designs, smells, sounds, bodily gestures, organization of physical space, doorways, building materials, clothes, different foods, and so forth are all part of a culture's languaging processes that constitute, guide, repress, transform the ordinary into the extraordinary, and so forth. In short, they are all part of the complex ecology of symbols that the members of the culture interact with as sources of meaning, status relationships, and identity formation.

The Berger and Luckmann explanation of the cultural construction, renewal, and reification also accounts for how members of a culture can exhibit communicative competence (in the anthropological meaning of the phrase) without being explicitly aware of the shared cultural patterns they are reenacting—and in some instances giving individualized interpretations that do not fundamentally change the patterns. They explain that this cultural knowledge is largely taken-for-granted; that is, the person has a natural attitude toward the cultural patterns that have not been named and thus made explicit.

Thus, the individual has a natural attitude toward the cultural patterns of metacommunication with others (maintaining eye contact, using tone of voice, other bodily gestures—that are shared by other members of the culture), as well as other cultural patterns such as the design of dwellings, how to relate to the environment and people regarded by other members of the culture as inferior, and even ideologies that represent possibilities that cannot be lived. In contrast to the taken-for-granted nature of most of our cultural knowledge, the constructivist learning theorists as well as most teachers from the elementary grades through graduate classes emphasize the student's explicit knowledge—that is, what they can reflect on and articulate in spoken and written form. The aspects of taken-for-granted knowledge that are made explicit are usually associated with some form of social injustice, such as discriminatory hiring practices, racial and gender prejudices, misunderstandings that

have been passed on from generation to generation, and so forth. What is seldom made explicit are the taken-for-granted patterns that are sources of empowerment, that contribute to non-violent ways of settling disputes, that carry forward the important achievements of the past—such as the gains made in the protection of workers' right (now being eroded), and so forth.

Even when specific taken-for-granted patterns are made explicit in the process of critical reflection, and changed, other taken-for-granted beliefs remain unexamined. For example, recent efforts to make explicit racist and sexist cultural patterns did not lead to a critical examination of other cultural patterns, such as those based on the assumption that change is a linear form of progress, that consumerism is the highest expression of personal success, and that the pursuit of individual self-interest is a universal value that should be imposed on other cultures. Instead, the achievement of a non-racist and non-sexist society was suppose to enable everyone to pursue the American dream of material success—which is overwhelming the natural systems we depend upon with needless waste.

By ignoring the extent that taken-for-granted cultural patterns are an integral part of daily experience, the constructivist learning theorists fail to recognize the limits of critical inquiry and the individual's ability to construct their own knowledge. The simple fact is that if a cultural pattern of thinking is taken for granted, such as Dewey's idea that democracy requires displacing other cultural ways of knowing with the western model of scientific inquiry or Freire's idea that all the world's cultures should adopt critical inquiry as their only approach to knowledge, it will not be made explicit and thus be open to critical reflection. Rather, the deep pattern of thinking, which in the above examples is that there is only one legitimate approach to emancipation that must be universalized, provides the conceptual framework within which critical inquiry can be exercised. To make the point more succinctly, critical reflection is always based on a culturally specific set of taken-for-granted assumptions and patterns of behavior.

As the promoters of high-status knowledge have emphasized that everyday life should be guided by rational thought, which the constructivist theorists have narrowed down to critical reflection, something more should be said about the fact that not all taken-for-granted cultural patterns contribute to social injustices. Nor do they all limit the potential of individuals. As mentioned above, the taken-for-granted cultural patterns that lead some

groups to protest the impact of these patterns on their lives are the ones given attention in public school and university classrooms, and the taken-for-granted patterns that should be renewed in the lives of students are generally ignored. I suspect that this statement will cause many readers to charge me with being a reactionary thinker—which would be a mild label compared to one of my critics who suggested that I was a neo-fascist because I wrote about environmental issues.

### **A More Complex and Balanced Understanding of Tradition**

Taken-for-granted cultural patterns can also be called traditions, which is another word (iconic metaphor) that still encodes the analogies that were the basis of how French Enlightenment thinkers understood the nature of tradition. That is, they viewed the church, the remnants of the feudal system, and the folk superstitions of their day as impeding the emergence of a progressive form of society based on rational thought. Today, most cultural mainstream teachers and professors either associate the word tradition with holidays, and more broadly with ignorance and cultural backwardness. It is common to hear “traditional” used to refer to cultures that are considered as undeveloped, backward, and based on “pre-scientific thinking” (i.e, superstitions) to quote E. O. Wilson and the late Carl Sagan. For the last 15 years or so I have urged educational reformers to recognize that the word tradition is as inclusive as the word culture. I have further argued that representing tradition as the opposite of progress is to support the taken-for-granted assumptions underlying the Industrial Revolution. But the tradition of thinking of tradition as a backwardness and as an appeal for the return of the traditions that privileged certain groups over others is so taken-for-granted that it is beyond the scope of critical reflection. I would be surprised to learn of any educational theorists who followed up my suggestion that Edward Shils’ book, Tradition (1981) should be essential for classroom teachers and anyone else who thinks about educational and environmental issues. There are many ironies connected with the misconceptions that educators have about the nature of traditions—misconceptions that in any other professions would be grounds for charges of malpractice. One of the ironies that still is ignored is that in turning “multicultural education” into a mantra, while ignoring the traditions that are the basis of different cultural (ethnic) groups, is to engage in a fundamental contradiction. A cultural (ethnic) group is distinguishable from other cultures by virtue of the

fact that, in addition to the traditions it shares with the rest of the cultures that have come under the sway of modern culture, it has its own distinct traditions.

As reductionist thinking usually takes over when the word tradition is mentioned, it will be useful to summarize the main points again: a theory of learning needs to take account of the complex nature of traditions. This includes an awareness of the many sources of individual empowerment, technological competency, community-self-sufficiency, and civil liberties. Depending on the culture, other traditions may be the source of inequality in terms of political decision making, educational opportunities, the legal system, and the distribution of wealth. And most of our high-status traditions that drive economic and technological development are still based on earlier assumptions that represented the environment as an exploitable resource—even though these developments are identified as the latest expression of progress. If we take seriously Shils' explanation that traditions include every aspect of culture that has been re-enacted (and even modified) over four cohorts or generations, then it is possible to recognize that the constructivist claim that "knowledge cannot be transferred" is an example of abstract thinking that has no basis in everyday reality. Taking account of the traditions that were relied upon in representing this idea in print points to two serious problems: that the author of the statement does not know how to use language in an accountable way, and that so many constructivist professors would take him seriously.

Shils is not (nor am I) making the case that we should accept all traditions in their present state of development. Rather, he is saying that traditions are an inescapable part of human existence. He is also saying that we should be aware of the characteristics of traditions in our pursuit of the French Enlightenment ideal of freeing ourselves from the hold of tradition. Shils refers to this tradition of thinking, which is shared not only by constructivist learning theorists but also by Marxists, scientists, and classical liberal thinkers we mistakenly call conservatives, as an "anti-tradition tradition". That is, this taken-for-granted pattern of thinking has been carried forward over four generations.

Western thinkers, nearly to a "man," have maintained a long tradition of representing rationality and critical reflection as the source of knowledge. In the process they have ignored how much of daily life is based on taken-for-granted traditions—as well as traditions that have been consciously chosen as worthy of being continued. When Shils argues that traditions are everything handed down and reenacted over four generations he means everything from

the use of standard spellings, the many technologies that go into the production of a book, the value and use of currency, the design and technology used in the building and flying an airplane, the use of spices and recipes, health care practices, the multiple layered procedures that govern elections and the legal system, the structure of a narrative and a play, the traditions of music—from folk, jazz, to classical, and so forth. Understanding the nature of traditions becomes even more necessary and complicated when we take account of how different cultural mythopoetic narratives lead to fundamental differences in the traditions taken-for-granted by the members of other cultures.

By ignoring how human life involves re-enacting and giving individualized interpretations of traditions—and even rejecting some traditions, from the time of conception and birth to the end of life (which some cultures view as the beginning of a new cycle of life), constructivist learning theorists and classroom teachers are passing on to students the modern tradition of thinking that we can live better if we don't have any traditions—except for holidays and religious observances. The message conveyed to students is that they can create their own traditions—which, in turn, are not to be imposed on the following generations. This will allow them to experience the excitement of “becoming” in a hyper-media environment where new images and products are constant reminders that progress is unending—as long they do not exceed the limit of their credit card and lose their job to corporate “outsourcing” and greed.

Shils' observations about the nature of tradition, which should not be confused with specific traditions that vary from culture to culture, include the following: (1) that traditions do not pass themselves on, but are perpetuated by human beings; (2) that traditions are not static, but like a plant undergo constant change—though a tradition of belief (what Shils refers to as “traditonalism”) may hold that traditions should not change or that we should go back to earlier traditions; (3) that some traditions change too slowly while other traditions may be overwhelmed by the development of other traditions before people are aware of their importance (such as the tradition of privacy being undermined by further developments in the traditions that underlie computer technologies); (4) that when a tradition is lost it cannot be recovered—though a somewhat different tradition may eventually take root; (5) that some traditions should not have been started in the first place—and that the traditions of critical reflection and democratic decision making are essential in overturning them. By using the

plant as an analogy for understanding the nature of traditions, with its new growth amid dying roots and branches, Shils is emphasizing that traditions should be regarded as organic and thus undergoing a constant process of development—which requires both constant pruning and nourishment.

Shils' understanding of tradition represents another way of understanding the historical continuities within a culture—or what I refer to as an intergenerationally connected culture. It is also interesting in another sense that has more relevance for teachers than any other profession. His view of tradition, which he describes in great detail rather than to argue for the creation of traditions, is similar to Edmund Burke's recommendation that changes should be assessed in terms of making a constructive contribution to the well-being of the community. While other aspects of Burke's political philosophy supported traditions that were wrong for his day, and even more wrong in our times, he understood that critical reflection needs to be balanced by a sense of responsibility for carrying forward the genuine achievements of the past, and for ensuring that the adoption of current changes do not diminish the prospects of future generations. Today, additional criteria for assessing the worth of innovations should include the impact on the traditions of economic self-sufficiency of communities within the West and Third World cultures, and the impact on the viability of the world's ecosystems. Simply put, the tension between the forces of change and living traditions calls for the exercise of critical reflection—but critical reflection that is not based on the assumption that change automatically leads to progress.

In terms of technological innovations, this more balanced and sane use of critical reflection might lead to asking whether a new technology makes obsolete the craft knowledge and skills of the worker, how it alters the relationships between workers, whether it reduces workers to performing a segmented role in the production process, who benefits economically from the innovation and whether it makes the economic viability of the community more precarious, and what is the impact on the environment. This approach to using critical reflection does not assume that the traditions of the community must be replaced, but rather is guided by the Burkean concern that change must meet the over-all test of whether it contributes to the long-term well being of the community. And the idea of the “well being of the community” means taking responsibility for renewing the genuine contributions of previous generations.



One of the misconceptions underlying the constructivist approach to the classroom, and to Freire's approach to consciousness raising in community settings, is that critical reflection will lead to a consensus on the nature of changes that must be undertaken. Both Dewey and Freire continually expressed their commitment to democracy and dialogue, but at the same time viewed as reactionary anyone who makes a case for the importance of tradition—even those that are the basis of the community's patterns of mutual aid and self-sufficiency. Dewey confronted this problem in Liberalism and Social Action (1935), and even though he was challenging the tradition of capitalism (which is very different from the community enhancing traditions I am referring to) he was unable to recommend how to deal with capitalists who possessed a different way of understanding intelligence. Freire's solution for dealing with those who opposed the social transformations that he envisioned as the outcome of critical reflection was to win them over through dialogue—which has not had a particularly good record of success. Neither Dewey nor Freire offer an adequate way of taking account of the possibility that the person or group who resists such changes as the widespread adoption of computer-based learning may have a clearer understanding of what form of education contributes to the long-term well being of the community. This is a particularly good example for bringing out the inadequacy of the different constructivist interpretations of the connection between learning and democratic decision making. The constructivist classroom, as discussed earlier, emphasizes the students as the primary decision makers, since their decisions are based on the own insights and understanding of relationships. Given that most students spend many hours a day using the computer to communicate with friends, surf the internet, write papers, download papers, and acquire information, they would likely support the even wider adoption of computer mediated education. There is nothing in the constructivist textbooks used in the teachers' professional courses that suggests the importance of students learning to take account of the knowledge of the older members of the community, or to learn about the traditions that the older generations want to retain—which are sometimes in opposition to the industrial approach to agriculture, forests, food preparation, health care, and so on.

While the voices of students are too often ignored in political decision making at all levels of government, the ideological orientation underlying constructivist learning theorists would lead to yet another set of false and unfulfilled expectations: namely, that

because they construct their own knowledge and values they should not have to compromise their autonomous decision making in order to accommodate what they too often consider to be the ideas of older members of the community who have not been taught to think for themselves and who are afraid of change. Dewey's method of intelligence accommodates the insights of all members of the community as long as they subscribe to the use and outcome of the scientific method of inquiry. But the other constructivist theories, as discussed earlier, reject the idea that knowledge can be transferred or shared. And their references to "renaming," "becoming", "open systems", and autonomy further strengthens the idea that anyone who suggests that the impact of innovations on the traditions of the community is likely to be viewed as a reactionary person and dismissed out of hand.

This emphasis on the students' construction of knowledge puts out of focus the need to learn about the traditions that students have been socialized from birth to take for granted. There is a further consequence of ignoring the traditions that make up the woof and warp of community relationships and activities; namely, by ignoring the traditions that student's take-for-granted the teacher is unable to help them recognize the limits of their own knowledge. The destructive traditions are also more likely to go unnoticed, which involves an irony not noticed by constructivist learning theorists. That is, while teachers are reinforcing students for formulating their own ideas, the students will be re-enacting the destructive taken-for-granted traditions. We have only to look back at recent history when students were encouraged to think critically, but in the process never became aware of racist and sexist attitudes and practices until political movements outside of educational institutions forced teachers and professors to be aware of them. The fact that critical reflection and individually constructed knowledge (which is more myth than reality as I will explain shortly) does not always lead to awareness of taken-for-granted cultural patterns can be seen in the silences of the leading constructivist theorists. All of them reproduced the tradition of thinking of cultures as evolving from primitive to advanced stages of development where decisions are based on some form of critical thought. And they all ignored the cultural non-neutrality of technology—which remains today a major silence in the writings of their followers and in constructivist classrooms. Other examples of cultural traditions they not only took-for-granted, but relied upon on a daily basis, can easily be cited.

### **Role of Language in the Cultural Construction of “Reality”**

There is another aspect of culture that cannot be separated from the nature of traditions, and from why it is so difficult to recognize the traditions we take for granted. This aspect of culture also involves a tension between the culturally prescribed patterns and the individualizing of these patterns in ways that reflect the person’s self-identity and integrity—and what just seems to be the intuitively right thing to do. Recognizing this tension, which avoids representing culture in terms of genetic or linguistic determinism, can be understood most readily in terms of an insight attributed to Martin Heidegger that “language thinks us as we think within the language.” To put this another way, we think within the conceptual possibilities of the categories and system of causality that are made available in the language of our culture. Sometimes thinking involves reliance upon marginalized or other cultural ways of thinking. Even widely misrepresented experiences can lead to changes in the language and thus in thought and behavior. This view of language represents a major challenge to the various constructivists’ theories of learning, to the classroom teacher’s romantic and ideologically grounded idea of student autonomy, and to the university professor who holds student’s accountable for expressing their own ideas. A case could also be made that this view of language brings into question the idea that people originate ideas and thus own them as private property. Again, in explaining the constitutive role of language I will focus on the characteristics that are particularly relevant to understanding the teacher’s role as an intercultural and intergenerational mediator. This will also help clarify the other misconceptions and silences that are shared by constructivist learning theorists and classroom teachers.

Constructivist theorists have based key aspects of their theories on a misconception about the nature of language that can be traced back to John Locke’s idea that we put out meanings into words and then send them to other people. This sender/receiver model of the language and communication process, which Michael Reddy referred to as the ‘conduit view of language, has been widely accepted in the West. Indeed, this view of language is at the center of how we think about computer mediated communication; and it is also vital to maintaining other myths that still hold sway within the academic community—such as the idea that rational thought is free of cultural influence and the idea of objective knowledge. The

tradition (in this case, a highly problematic tradition) of thinking of language as a conduit is especially important to maintaining the keystone of the constructivist position that represents intelligence as an attribute of the individual—or, in Dewey's case, as individuals sharing their intelligence in a way that conforms to the scientific method of inquiry. The conduit view of language also helps to deflect attention from the way in which constructivist learning theorists share so many cultural patterns of thinking that have been carried forward over hundreds of years, and are not being imposed on non-western cultures by constructivist-oriented teachers.

We can most easily recognize how language thinks us as we think within the language of our cultural group by considering the ways in which language encodes and thus reproduces the metaphorically constructed thought patterns of previous generations. Understanding the dynamics of this process should be, as I have argued for years, a core part of the teacher's professional knowledge, particularly when we recognize that the teacher is a mediating between different cultural ways of knowing and between the different generations that constitute the community of which the students are members. The basic dynamic that needs to be understood is how the root metaphors of different cultures provide the taken-for-granted interpretative framework that influences the process of analogic thinking, and how over time the analog that is viewed as providing a more satisfactory way of understanding new experiences or phenomena is encoded in simplified form in the image words that become part of daily thought and communication. And as teachers understand this process they will then recognize that intelligence is cultural in the sense that the students' thinking is largely a matter of giving an individualized interpretation (and often misinterpretation) that is influenced by the conceptual categories and assumptions that have been passed on as part of the taken-for-granted way of thinking. A perhaps even more important insight is that intelligence is a combination of the linguistically encoded intelligence and the students' ability to understand relationships, have insights, question, and arrive at a sense of meaning. That intelligence is encoded in the language that influences thought at a taken-for-granted level of awareness can be seen in the many instances where the student's intellectual potential has been undermined by the earlier forms of intelligence (way of thinking). There are many examples of this process, such as when the language handed down from the past represented women as intellectually incapable of being artists, historians, scientists, and so forth. Another example, as we shall see later, is the historically encoded intelligence that represents all forms of life as

mechanistic in nature—which we find current leading edge scientists basing their research and extrapolations on. To make the point in a way that sounds more familiar: the language in the textbook can contribute to reducing the students’ potential intelligence to the level of past misconceptions and prejudices.

In the nineteenth century, Friedrich Nietzsche observed that we cannot understand something new (an experience, technological innovation, newly encountered phenomenon) on its own terms. Rather, the understanding of what is new is influenced by the interpretative framework the observer brings to it. Put another way, the new is understood in terms of the already familiar. This process of thinking in terms of similarities, and using words that highlight them, is called metaphorical thinking. It is an imaginative process that fits the new into the already taken-for-granted schema of understanding. That is, metaphorical thinking is an “as if” way of thinking. Examples of how the already familiar involves using image words that help us understand new phenomena can be seen in the sciences where “black hole,” “big bang,” and “cosmic dust,” and so forth are used to convey an understanding of the phenomenon’s basic characteristics. Other examples include thinking of the way in which computers processes data as “artificial intelligence,” the manipulation of the genetic characteristics of plants as “genetic engineering,” and seeds that have been genetically altered in ways that makes them sterile (thus forcing farmers to buy new seeds each year) as based on “terminator” technology. Previous experience and ways of thinking become the basis of understanding that a machine can exercise intelligence, that scientists can engineer new forms of life, and that life processes can be terminated. When the image words (iconic metaphors) are associated with the new phenomena we then have a shorthand way of understanding that what is unique is similar to what we already understand.

If we pay attention to the spoken or written word among speakers and writers of English we find that sentences, as Vygotsky pointed out years ago, involve the stringing together of image words—words that carry forward the core concept or image worked out in an earlier process of analogic thinking. An example of how image words are strung together in a way that reproduces a particularly way of understanding (one that reflects the assumptions and economic interests of a particular group) can be seen in following textbook explanation that most students will be reading for the first time: “Silvaculture means growing crops of trees. It is farming in the forest instead of farming in the field.” The image words (iconic

metaphors), which have been put in italics, represent silvaculture “as like” a form of farming. The two sentences taken together represent the process of analogic thinking—that is, understanding the new in terms of the already familiar. Like so much of the analogic thinking that is part of teaching and learning, this analogy is highly problematic for a number of reasons that most students are not likely to recognize if this is the first explanation of silvaculture they receive.

An example from a book explaining the future of capitalism shows how analogic thinking relies upon the use of image metaphors that serve, even for more sophisticated readers, as a basis of understanding—and misunderstanding when the analogy is more dissimilar than similar. Observe how Lester Thurow, as professor of economics at MIT, relies upon analogic thinking to explain one aspect of capitalism: “When technology and ideology don’t smoothly mix, economic magna fluxes. Tectonic plates are violently thrust into each other—volcanoes erupt, earthquakes shatter the earth’s crust, mountains rise, valleys fall....The economic surface of the earth, the distribution of income and wealth, is now fundamentally remade” (1996, p. 18). Again the image metaphors have been put in italics. Thurow’s selection of an analogy, borrowed from the scientific understanding of the movement of tectonic plates, will lead for many readers to a basic misunderstanding: namely, that just as humans have no control over the movements of the tectonic plates, they have no control over the economic policies that influence the distribution of wealth. Students and more general readers who are learning how to understand the nature of economic change are likely to accept the comparison between geological and economic processes as valid. That is, in the initial process of socialization, thinking is highly dependent upon the language, and the schemata encoded in the metaphors, that is made available.

Another point needs to be made about how the use of image words influences the individual’s understanding. That is, image words such as “individual,” “tradition,” “data,” “intelligence,” and so forth, have a history—and when used in the present they reproduce the way of understanding from an earlier period in the culture’s history. And the schema of understanding that has come down to us over time is the one that prevailed over other competing analogies—which always involves different economic and political forces, as well as the influence of earlier ways of thinking encoded in the metaphorical thinking of that time. This process of competing analogies, and the social forces behind them, can be seen in how

the nature of a person's intelligence was to be measured. An objective measure of a person's intelligence was supposed to be more democratic and egalitarian than the old system of using social class and family connections as the basis for deciding a person's educational and work prospects. Measuring the size of the person's skull, which was based on analogic thinking that associated size with degree of intelligence, was abandoned when it was discovered that western people did not possess the largest brain cavity. Eventually it was agreed that performance using an English language test would provide the objective, scientifically determined measure of a person's intelligence. The analogy where measurable performance results were taken as evidence of intellectual ability become simplified and encoded in the iconic metaphor of "intelligence score," which teachers and other professionals used for decades in channeling students into educational pathways that influenced their prospects for life. Now many psychologists are challenging this earlier process of analogic thinking that led to measuring intelligence by suggesting that the use of new discoveries in genetics provides a more scientific basis for understanding the nature of intelligence. Thinking of genes as determining intelligence leads them now to predict that a certain percentage of a person's intelligence is genetically determined. The root metaphor that drives this process of analogic thinking reintroduces the Social Darwinism of the late nineteenth and early twentieth century by providing a basis for determining which individual, cultural patterns (memes), and institutions are better adapted and thus will survive while other less well adapted individuals and cultures disappear.

The way in which image words are associated with different previously determined ways of understanding and personal experiences can be seen in how image words, even in the English language, are associated with different analogies. For example, Britains and Americans use different image words for referring to different parts of the car—and many other aspects of daily life. When we take into account the differences between cultures in the use of root metaphors that influence the layered nature of metaphorical thinking, from the selection of analogies to the encoding characteristics of iconic metaphors, we can see that the metaphorical characteristics of language can be a source of misunderstanding, such as when the Japanese student visiting in Louisiana was shot because he did not understand metaphor "freeze." The hidden process of analogic thinking encoded in image metaphors can also be the source of cultural imperialism. Image words taken-for-granted by western educators and

politicians, such as “emancipation,” “progress,” “modernization”, “development,” “individualism,” “transformative learning,” “globalization” and so forth, encode culturally specific assumptions that are carried forward and are now being introduced into other cultures as a more “enlightened” and “rational” way of thinking.

The aspect of metaphorical thinking that is most difficult to recognize because it provides the meta-cognitive schemata that influences the choice of analogies, and thus the meaning of image words, are the root metaphors. The metaphorical image of “root” is used to suggest that they are the source of a particular pattern of thinking that influences many, if not all—depending upon the culture, aspects of daily life. The image of a root also suggests that it is deeply rooted in the culture’s history—in many instances, going back to the mythopoetic narratives and powerful evocative experiences that serve as the culture’s earliest model of understanding. A culture’s root metaphors (some cultures may be based on only one root metaphor) are the basis of its knowledge system and moral codes. They also influence the culture’s way of thinking about space, design, patterns of social interaction, and, as we shall see later, even how scientific research is understood. To reiterate a key characteristic of root metaphors, their influence as a cognitive and moral schema is seldom noticed: that is, they are the bases of our natural attitude.

The two most powerful root metaphors in the West can be traced back to the Book of Genesis. Patriarchy and anthropocentrism, which are represented as God’s prescriptions for understanding these fundamental relationships, undoubtedly had their origins much earlier in the oral narratives. The mainstream of western culture has been deeply influenced by other root metaphors that have guided thinking about education, medicine, architecture, agriculture, business, and so on. These root metaphors include the idea that the individual is the basic social agent and thus the source of rational thought and moral judgment-- and personally accountable for economic success. Equally powerful as a taken-for-granted way of thinking is the root metaphor that represents change as inherently progressive. Economism-- that is, thinking of relationships, activities, and the environment in terms of their monetary value and how ownership helps one get ahead--is becoming increasingly dominant as a root metaphor. And just as some root metaphors are being challenged, such as patriarchy and anthropocentrism, other root metaphors are gaining wider acceptance as a schema for understanding biological and



cultural processes. Two contending root metaphors that are gaining ground among different segments of the population are evolution and ecology. As many interpreters of evolution think of it as the expression of a linear form of progress, it has profoundly different political and economic implications from how others are basing their understanding of culture on the root metaphor of ecology.

The influence of each of the above root metaphors can be seen in the analogies selected for understanding new phenomena, for solving new problems, and in traditions that range from legal procedures to the design of the material culture. But it is in the spoken and written language that we can most easily see the influence of root metaphors on patterns of thinking and moral values. Nietzsche's description of metaphorical thinking as "fitting the new into old schemas" can be seen in how the root metaphor of mechanism underlies the thinking of highly intelligent thinkers working at the cutting edge of their fields of endeavor. The following examples were selected because they demonstrate how a root metaphor provides the basic interpretative framework that is reproduced over hundreds, even thousands of years in terms of some root metaphors. They were also chosen because they serve as examples of how even the most rational and highly educated scientists unconsciously reproduce a culturally specific pattern of thinking that introduces fundamental misconceptions into scientific explanations.

"My aim is to show the celestial machine is to be likened not to a divine organism but to a clockwork" Johannes Kepler (1571-1630)

"Our conscious thoughts use signal-signs to set the engines in our minds, controlling countless processes of which we're never much aware" Marvin Minsky 1985

"But another general characteristic that successful genes will have is a tendency to postpone the death of their survival machines at least until after reproduction...Survival machines began as passive receptacles for the genes, providing little more than walls to protect them from the chemical warfare of their rivals and the ravages of accidental molecular bombardment" Richard Dawkins, 1976

“The machine the biologists have opened up is a creation of riveting beauty. At its heart are the nucleic acid codes, which in a typical vertebrate animal may comprise 50,000 to 100,000 genes” E. O. Wilson. 1998

It would be just as easy to quote other individuals who represent a similar span of time. For example, Thomas Hobbes, the author of the Leviathan (1651) and one of the “fathers” of modern liberalism wrote “For what is the heart, but a spring; and the nerves, but so many strings; and the joints, but so many wheels, giving motion to the whole body.” In using the root metaphor of mechanism as a way of explaining the similarity between computers and human thought, Anita Woolfolk, writing in Educational Psychology (1993) states that “like the computer the human mind takes in information, performs operations on it to change its form and content, stores information, retrieves it when needed, and generates responses to it.” Hundreds of year separate Hobbes and Woolfolk, yet they both rely upon the same root metaphor to explain different phenomenon, just as Dawkins and Wilson repeat the same deep pattern of thinking that Newton and Kepler introduced as a way of overturning the root metaphors that were the basis of thinking and social life in the Middle Ages. These examples can also be understood as traditions that are carried forward by individuals who find them useful—even though they are fundamentally problematic in ways that these leading thinkers do not recognize. They are also examples of how language thinks us even as we think within the language—to recall an earlier statement that may seem vague without concrete examples.

Individuals may extend the explanatory power of a root metaphor to new areas of cultural experience, which can be seen in how the Bauhaus school of architecture derived their principles of design from how they understood the characteristics of the machine. The machine metaphor (industrial model) has also been extended to agriculture, medicine, education, forestry, and, now, to the creation of new forms of life. The way in which a root metaphor frames what will be given attention and what will be ignored can be seen in the proposal of Lee Silver, a molecular biologist at Princeton University, that explains how genetic engineering can be used to create a separate class of “Gene-Rich” people that will become the governing class, while the underclass, whom he refers to as “Naturals” will do menial work. Engineering (which is based on a mechanistic root metaphor) puts out of focus the moral and political issues that are not usually associated with machines. But the root

metaphor of progress, which gives legitimacy to the many uses of the mechanistic root metaphor, is clearly present in the thinking of Sliver, and the other scientists quoted above. The idea of progress and the idea of building better machines or machine-like processes are mutually supportive, which leads to ignoring whether the machine driven form of progress is a major contributor to the many environmental problems we are now facing.

Root metaphors have explanatory power, especially when they totally dominate a way of thinking. And they are often the basis of power relationships that benefit one segments of society over others. Patriarchy and evolution are two powerful examples of the political role that metaphorical thinking plays. If we consider the root metaphors (mythopoetic narratives) of more ecologically-centered cultures, we find that they often serve as the basis of moral reciprocity within the community and with the non-human world. And there are root metaphors in other cultures that explain life as a cycle within larger cycles, which influences how birth and death are understood—as well as other cultural patterns. Root metaphors, to sum up, are specific to different cultures. But some root metaphors, particularly those that underlie the high-status knowledge that drives the current phase of globalizing an industrial approach to production and consumption, undermine other cultural ways of knowing, their capacity to be self-reliant, and the environment they depend upon.

One of the implications for educators is that the examination of root metaphors needs to become part of their professional responsibility. That is, they need to recognize in the curriculum how earlier patterns of thinking influence the thought processes of students textbook writers, and the people who write educational software. Most importantly, they need to recognize the root metaphors that are an inescapable basis of thinking. The following summary represents some aspects of root metaphors that classroom teachers and professors need to give special attention.

(1) Root metaphors, as the above example of mechanistic thinking demonstrates, influence what will be given attention, and what will be ignored. For example, when the mechanistic root metaphor is used to explain mental processes it marginalizes the cultural influences on consciousness, intentionality, self-identity, feelings, meaning, and value judgments. When it is applied to agriculture is marginalizes the interactive and interdependent nature of the life forms that make up the local ecology—and leads to technological interventions that disrupt the complex information exchanges vital to the interdependent life processes in healthy

ecosystems. The root metaphor of patriarchy, to cite another example, made it difficult for people to recognize that women could be artists, historians, scientists, skilled craftspeople, and so on. The root metaphor of evolution, when combined with the root metaphor of linear progress that we find in the thinking of some scientists, represents the forces contributing to globalization as expressions of Nature's process of design. At the same time the ecologically-centered cultures that are essential to sustaining biodiversity are represented as poorly adapted and on the way to extinction. When thinking is controlled by the root metaphor, the silences that should be examined are generally ignored. We can see in this process both the influence of tradition and the taken-for-granted nature of most of our thinking patterns—even on the thinking patterns of those who supposedly originate their own ideas.

2. Root metaphors are the basis of a culture's moral values, which we will see more clearly when we consider the knowledge being lost in a constructivist approach to the education of Quechua children. We can also recognize how root metaphors influence the moral norms largely taken-for-granted in our own culture by considering the influence of root metaphors such as mechanism, anthropocentrism, patriarchy, evolution, and so forth. The question that needs to be asked in making explicit the influence of our dominant root metaphors is “how does the root metaphor represent the attributes of the participants in the relationships that make up everyday life?” When the root metaphor of patriarchy represents the attributes of women as inferior to those of men, it sanctions the subjugation of women as normal—that is, as a taken-for-granted moral norm that gets passed along through the languaging processes over many generations. When anthropocentrism is the guiding root metaphor for understanding the relationship between humans and the natural world, and the attributes of the participants in this relationship, it sanctions as moral the exploitation of the environment. And the root metaphor of progress sanctions as moral many practices that in other cultures, especially ecologically-centered cultures, would be regarded as immoral. Again, the critical questions to ask about root metaphors have to do with what is put in focus, what is taken-for-granted and what are the silences. Other questions include asking about how relationships and attributes of participants in the relationships are understood, and who gains and who is oppressed by the “reality” and moral norms constituted by the influence of the root metaphor.

In the chapter on the teacher's role as an intercultural and intergenerational mediator we shall return to a consideration of how root metaphors influence every aspect of the

curriculum, and the responsibilities of the teacher that go well beyond the facilitator role that constructivist theorists assign to them. For now, given the above discussion of the constituting role of root metaphors it is important to return to a further consideration of the misconceptions of constructivist learning theorists.

One of the tests of a theory of learning is that it should explain the thought processes of the theorists themselves. That is, their own way of thinking should not contradict their theory. However, when we consider whether Dewey, Freire, Piaget and their followers constructed their own critically based knowledge we find that their deep, taken-for-granted patterns of thinking were based on the same root metaphors that have given conceptual direction and moral legitimacy to the industrial based culture that is now being spread with messianic fervor to even the remotest cultures. The root metaphor of evolution, which was and is again being used to explain cultural developments, is the basis of how Dewey, Freire, and Piaget explain different levels of intelligence. Each of them represented their own approach to the construction of knowledge as the more evolved form of intelligence. It would not be inaccurate to claim that their evolutionary pattern of thinking has contributed to the mainstream western culturally held belief that nothing can be learned from cultures that have not reached the West's stage of development. And a further generalization is warranted: namely, that this bias against learning from non-western cultures is repeated in the way the promoters of constructivist-based educational reforms in non-western counties ignore the importance of including local intergenerational knowledge in the curriculum.

We also find that Dewey, Freire, and Piaget interpreted change as the expression of a linear form of progress. Furthermore, they shared the cultural assumption that represents the individual as the basic agent of critical reflection and constructor of new knowledge. Dewey had a somewhat different interpretation that represented knowledge as a social construction, but he shared with Freire the assumption that knowledge must be newly discovered and not acquired from the past. The combined influence of a taken-for-granted way of thinking of the never-ending process of reconstructing experience as a manifestation of progress led Dewey to dismiss tradition by saying "Let the dead bury their dead" and Freire to claim that "history has no power." Yet both were reenacting a traditions of thinking that was inconsistent with their theory. And the cultural influences on Piaget, given that he must have considered himself as having reached the stage of biological and cognitive development that would

enable him to be an autonomous thinker, are equally obvious—if we care to look for them. To take another example, all three theorists were influenced by the root metaphor of anthropocentrism—which is now being repeated by the followers of Freire and Piaget. The current interpreters of Dewey are trying to make the case that he did not have this bias, but they ignore that his naturalized interpretation of intelligence did not lead to any suggestions that we can acquire any moral insights from the interdependent characteristics of natural systems—and he did not warn, as noted earlier, against trashing the environment that was well advanced by his time. Lastly, it should be noted that all three theorists were influenced by the root metaphor of patriarchy to use the genderized language of their era—which Freire apologized for late in his life.

The traditions of metaphorical thinking passed on in the writings of these western “fathers” of the different interpretations of constructivist learning is strong evidence that their own patterns of thinking do not fit what they prescribed for others. And the same criticism can be made of the constructivist-oriented professors of education who have learned from the writings of Dewey, Freire, Piaget, and Whitehead to think in the same taken-for-granted patterns—even in an era where Third World voices are becoming more self-confident and challenging of western assumptions, and where there are daily reminders of a deepening ecological crisis that is moving beyond the power of scientists to manage or reverse.

If the leading theorists and current promoters of constructivist-based educational reforms are unable to recognize the culturally specific assumptions their theories of learning are based upon, or to recognize the silences that are becoming by the day more significant, how can students be expected to recognize them? And how can students be expected to construct their own knowledge and thus emancipate themselves so that they can become autonomous individuals when they are exposed to a constant barrage of media messages scientifically engineered to influence the deepest levels of their consciousness and self-identity? The tragedy is simply being compounded by encouraging students to think they are constructing their own ideas, meanings, and identity, when this rootless form of individualism is exactly what serves the interests of the promoters of consumerism. Students may learn to think critically about aspects of their world, but they are not likely to understand that their own subjectively limited knowledge and lack of skills will not provide a real basis for resisting the forces of consumerism and environmental destruction. Like so much that is

learned in western public schools and universities, the abstract talk, critical reflection, and search for the latest intellectual fad will simply provide a ritualized response to the multiple crises we now face. And when this western approach to education is adopted by or imposed upon non-western countries, the possibilities of resisting the western model of development will be further undermined.

We now need to turn to a consideration of the role of the teacher in different approaches to revitalizing the commons, in mediating between different cultural ways of knowing, in helping students sort out the gains and losses connected with adopting a western form of modernism, and in acquiring a more complex and balanced understanding of intergenerational knowledge. We also need to clarify further the connections between constructivist educational reforms, the further destruction of the commons, and the globalization of a consumer dependent lifestyle that few of the world's population have the resources to participate in and which further exacerbates the ecological crisis.

**Appendix D** Show Video by Helena Norberg-Hodge titled “Ancient Futures: Learning from Ladakh”. Video is available from the International Society for Ecology and Culture, P.O. Box 9475 Berkeley, CA. 94709 Phone 510-548-4915

**Appendix E** Pages 103-133 from The False Promises of Constructivist Theories of Learning (2005)

## Chapter 6 Toward a Culturally Informed Eco-Justice Pedagogy

The principle concerns that should guide the reform of teacher education, and thus the education that occurs in classrooms, have been articulated by several writers who have kept in focus the connections between the cultural patterns that are degrading the environment and the rise of political conflict and the spread of poverty around the world. In the last chapter of Our Common Illiteracy (2002), Rolf Jucker discusses 27 reforms that will contribute to transforming classrooms from sites of indoctrination into the culture of consumerism and environmental exploitation into sites for learning how to live in ways that contribute to a sustainable future. His recommendations range from

incorporating into the curriculum examples of ecologically informed approaches to development in other parts of the world, making education for a sustainable future the core feature of every course, to providing staff development in how to teach an ecologically informed curriculum.

David Orr has also recommended several basic reforms that will contribute to ecological literacy. In addition to suggestions for how to contribute to the students' knowledge of place, as well as his recommendations for making school buildings more energy efficient, Orr's insights into the pathology of American culture that teachers need to avoid perpetuating express a Wendell Berry type of wisdom. As he writes in The Nature of Design (2002):

Ecological design at the level of culture resembles the structure and behavior of resilient systems in other contexts in which feedback between action and subsequent correction is rapid, people are held accountable for their actions, functional redundancy is high, and control is decentralized. At the local scale, people's actions are known and so accountability tends to be high. Production is distributed throughout the community, which means that no one individual's misfortune disrupts the whole. Employment, food, fuel, and recreation are mostly derived locally, which means people are buffered somewhat from economic forces beyond their control. Similarly, the decentralization of control to the community scale means that the pathologies of large-scale administration are mostly absent. Moreover, being situated in a place for generations provides long term memory of place and hence of its ecological possibilities and limits. Pp. 9-10

His summary of the basic relationship that are too often ignored can be interpreted as a set of guidelines for teachers in how to renew the commons and local democracy. While some readers may interpret Orr as suggesting that we should return to an earlier, less technologically driven lifestyle, a more accurate interpretation would be to view these recommendations as practical steps for resisting the technological and economic forces that are subverting what remains of local democracy and that are increasing the economic vulnerability of local communities.



In effect, Orr is reiterating the danger of becoming increasingly dependent upon an industrial system that is not accountable in terms of the needs of local communities, the limits of local ecosystems, and the prospects of future generations. Orr's comparison between the virtues of settled, ecologically informed cultures and the consumer-oriented values that many Americans base their lives upon, even while they claim to be the chief custodians of conservatism, could also serve as a checklist for teachers who take seriously whether they are perpetuating the problems of the commons—or contributing to its renewal. What the industrial system has turned into the higher values of our age, according to Orr, is “showiness, ego trips, great wealth, huge homes, hurry, excessive consumption.” What has been lost, with the exception of small self-conscious communities in rural and urban areas, are “cooperation, neighborliness, competence, thrift, responsibility, and self reliance”. These different value orientations are represented in the mix of students in nearly every classroom, and at nearly every level of the educational process. The teacher's curricular decisions are thus critical to which set of values and cultural patterns become the focus of inquiry and affirmation, and which become part of a silent process of indoctrination.

Educational reformers that address eco-justice issues in an increasingly conflict ridden world need to take seriously the recommendations of Jucker and Orr. They also need to take account of the inequities and marginalization that has been part of American history—as well as the history of other western colonizing countries. But the solution to the problems of racism, class inequities, and gender marginalization must be understood in ways that do not strengthen the economic forces of globalization and the consumer-dependent lifestyle it requires. Promoting the industrial approach to production and consumption, along with automation and outsourcing of production facilities to the low wage regions of the world, is not the solution to overcoming poverty and unemployment. Indeed, this approach is showing itself to be a major contributor to the crisis, as we are seeing in American and Mexican communities where production facilities have been moved overseas.

A culturally informed eco-justice approach to teaching and the curriculum cannot, by itself, reverse the trend of globalization and cultural domination. It can, however, play an important part in challenging the deeply held patterns of thinking; and it can contribute

to an understanding of the alternatives to the current emphasis on individual self-centeredness, the incessant drive to get ahead at the expense of others, and the spread of cultural amnesia that accompanies the increasing dominance of the new trinity of the military, the central government/industrial complex, and the religious fundamentalists. The recent role of the school and university in raising awareness of the many expressions of racism and gender bias, and in providing the knowledge and skills necessary for careers that previously could not even been imagined by these marginalized groups, is proof that the classroom can have an ameliorative effect. But first, teachers and professors must realize that they are complicit either as perpetuators or as problem solvers.

An eco-justice approach to educational reform also confronts classroom teachers and professors with an existential choice—of choosing to be aware that the degraded condition of the environment and the global spread of poverty, now widely reported in the media, may be related to the ideas and values they promote in their classrooms. They also make choices about whether they will inform themselves about the issues and problem solving approaches of their more ecologically informed colleagues. To put the problem in its simplest terms, the choices facing western classroom teachers and professors about how to address the deepening ecological crisis is critical to averting the future that approximates Thomas Hobbes’ prediction of human existence becoming reduced to “continual fear and danger of violent death”—a life that is “solitary, poor, nasty, brutish, and short.”

As we are just beginning to understand the pedagogical and curricular issues related to addressing eco-justice and to renewing the commons, the following guidelines should be viewed as provisional. The guidelines should also be adapted to fit the different cultural contexts. Cultures that already have a small ecological footprint, and are now being pressured to adopt western technologies and industrialized economy, will find that the guidelines must be interpreted differently. Their challenge will be to protect the traditions of the commons that do not adversely affect other cultures or natural systems. For these cultures, the guidelines need to be interpreted in a way that helps the students to understand the cultural transforming effects of western ideas, values, and technologies. Teachers in western classrooms will find the guidelines useful in

addressing a different set of problems. The main one being how to renew the commons in ways that reduce the cycle of excessive consumption that leads to higher levels of accumulation and dispersal of toxic wastes that, in turn, adversely affects marginalized groups. This cycle the further exploitation of the resources of Third World countries in order to raise the level of excessive consumption even further.

What is common in both western and non-western cultures is the teachers' role as a cultural mediator. Even in cultures where there is an effort to recover the moral norms dictated by a religious cosmology that goes back thousands of years, the globalizing of western images that equate consumerism with happiness and individual success, as well as the presence of technologies based on western science, confront teachers with the challenge of mediating between different cultural orientations. The teacher who is located in an indigenous community, where the classroom is itself an expression of western influence, also faces the challenge of mediating between the traditions of the local community and the various expressions of western culture. Nor can teachers in the West escape mediating between different cultural choices, with one set of choices being to perpetuate the high-status knowledge that supports the industrial systems of production and consumption, while the other set involves strengthening the self-reliance of the community in ways that reduce wasteful consumption. Indeed, the question of what cultural practices and values contribute to an ecologically sustainable future by reducing the violence that accompanies economic and technological globalization confronts every teacher and professor—regardless of grade level or subject area. Choosing one set of cultural possibilities over others is a process of mediation that is inescapable—even when the teacher or professor is in denial.

There are many public school and university classrooms where the curriculum challenges the current global trends, and introduces students to cultural practices that are being informed by ecological ways of thinking. However, the majority of public schools and university classrooms continue to perpetuate the assumptions and values that are the source of the double bind where progress is equated with an environmentally destructive dependence upon consumerism. And there are other double binds now endangering the entire world: the strident ethnocentrism of high-level American politicians in an era religiously based radicalism and friend/enemy politics; the relentless drive to create new

technologies that further eliminate the need for workers while at the same time creating new demands for the increased number of consumer products. There is also the threat hanging over the entire world of extremists pursuing their goals by using the technologies created by scientists who view themselves as modern Promethian heroes—but in the employee of the state. These double binds represent alternative futures for students. They also represent how classroom teachers and professors mediate by reinforcing the cultural assumptions that perpetuate these double binds, rather than helping students learn about the many ways in which ecological thinking can be applied in everyday life.

The more immediate double bind facing classroom teachers, and the education professors who now socialize them, is the belief that what students learn is incidental to the more paramount concern, which is that students “use what they know to interpret new information and construct new knowledge.” As Sam Hausfather summed it up, “content... does not come first. Students’ experiences, ideas, and prior knowledge come first” (2002, p. 77). For the followers of Freire, who continue to ignore both the ecological crisis and that the promotion of one approach to knowledge will further undermine cultural diversity, the teachers’ task is to contribute to the humanization of the student by encouraging them to question oppressive traditions --which from the students’ perspective could any anything and everything. There is another unrecognized double bind in these different interpretations of a constructivist approach to learning: namely, that the issues, ways of thinking, and uses of technology related to the ecological crisis are so much a part of the student’s and teacher’s taken-for-granted pattern of thinking that it would never occur to them that they should be made explicit and examined in terms of their impact on the commons. The taken-for-granted status of the cultural patterns of thinking that are ecologically problematic, and the romantic vision of a global monoculture that is constantly undergoing changes initiated by teachers functioning as “transformative intellectuals (to recall Giroux’s formula) have also resulted in the continued disregard of the most important issues facing both Western and non-Western cultures. Just as the destruction of the self-reliant capacities of communities and the enclosure of the commons were essential to the growth and spread of the Industrial Revolution, the current lack of an in-depth knowledge of the shaping influence of technology, of the limits of scientific explanations, of the community-centered

alternatives to consumerism, of the traditions essential to achieving eco-justice, and of how the principles of ecological design differ from the mechanistic models of thinking that are being applied in so many areas of everyday life, are essential to today's corporations, politicians, and media experts who are imposing the nineteenth century classical Liberal economic agenda on the rest of the world.

While the followers of Dewey and Freire assume, as Peter Roberts naively put it, that "all aspects of reality are constantly changing" (2000, p. 49), and the interpreters of Piaget merge his ideas with the earlier child-centered practices of the progressive education movement, there is a radically different way of understanding the role of the teacher. With globalization spreading to even the remotest corners of the world, the teacher mediates between traditions of the community and the forces of change, between the short-lived experiences and the questions of students and the knowledge (even wisdom in some instances) accumulated over generations of living in a bioregion, between western technologies and technologies that are adapted to local conditions, between western science and intergenerational and place-based science, between the industrial model of production and consumption and living within the possibility of the commons, and between cultural pressures that reinforce subjectively based values and traditions that locate the source of values in a culture's formative mythopoetic narratives or religious traditions. The tensions, sources of threat, and supporting patterns will vary within and between different cultures. Regardless of whether they are in western or non-western classrooms, teachers cannot avoid mediating between the cultural cross currents and pressures of different cultures. But they may not always be aware of what cultural orientation they are privileging or how they are undermining the conceptual and moral basis of the commons.

Before discussing the teachers' responsibilities in their mediating role I want to digress briefly by answering the critics of my writings. The criticisms have taken many forms and are made by educational theorists whose ethnocentrism has led them to ignore learning about non-western cultures. One of the criticism is that I take a culturally relativist position. As the existence of nearly 6000 spoken languages, and thus cultural ways of knowing, still exist today (with many on the verge of extinction) I am not sure exactly what would be the opposite of taking the position that knowledge and value

systems are relative to different cultures—and that within these cultures their knowledge and values (or the assumptions they are based upon) are taken-for-granted and are thus not experienced as relative. The opposite position, which my critics want me to adopt, would be the view that there is a universal moral and knowledge system—which is the position taken by many western philosophers who have a long tradition of ignoring the existence of other cultural ways of knowing. As I have pointed out earlier, the idea that there is only one way of knowing (Freire's critical and culturally transforming inquiry, Dewey's method of intelligence, Rorty's ironist individuals who doubt they were born into the right language community, today's classical liberals who think everybody should live by the rules of capitalism, and so forth) reflects a colonizing mentality. Indeed, there is no shortage of messianic thinkers in the West.

A second general criticism of my views is that I fail to provide the criteria for determining which traditions should be renewed and which should be reconstituted or abandoned entirely. One critic even went so far as to suggest that I failed to provide the criteria that other cultures should use to determine which of their traditions should be kept or abandoned. The suggestion that I should decide for others would be similar to the position that the Dewey and Freire took, and that their current followers now take. Namely, that that we have the right to impose on other cultures our supposedly more advanced way of knowing. This expression of hubris is not a unique trait of western educational theorists. E. O. Wilson, Richard Dawkins, and a host of other prominent scientists and technologists have made similar proposals—such as Wilson's claim that all the world's cultures should adopt the theory of evolution as their guiding metanarrative. These non-Western cultures are expected to embrace the theory of evolution that is being re-worked by scientists in a way that explains why they are being selected for extinction (Bowers, 2003). While I continually explain that the West can learn from ecologically-centered cultures, but that we should develop our own ecologically sustainable traditions rather than assuming that we can borrow from other cultures, I am represented as suggesting that we should go back to an earlier time by adopting their traditions—which is a criticism that not only misrepresents my writings but also reflects an evolutionary way of thinking that represents the West as having evolved to a more advanced stage of culture. A fourth criticism that is made by the followers of Freire is that I romanticize

traditional cultures, which is really an ideologically based criticism that ignores that I continually refer to specific indigenous cultures. The criticism that my romanticizing of traditional cultures takes the form of representing them in only a positive way is the Freirean way of dismissing the need to take actual cultural differences into account—particularly differences that relate to their ability to live within the limits of their commons.

In explaining the teacher's mediating role, as well as suggesting the content of the curriculum that should not be left to the student's powers of self-discovery, I will be restating, as I have done elsewhere, the connections between local democracy, intergenerational knowledge of the limits and possibilities of the commons, and the need to resist the forces of economic and technological colonization. These connections can also be viewed as one of the reasons I do not support the prescriptions of my ethnocentric critics who are also in deep denial about the nature and extent of the ecological crisis. And since these critics support their state of denial by claiming that indigenous cultures have also altered and degraded their environment, I need to reiterate what I have written before. Yes, many indigenous cultures have altered their environments in ways that western scientists are just now beginning to understand as examples of good ecological management techniques. And yes, some indigenous cultures have undermined the life sustaining characteristics of their bioregions, or faced environmental changes they could not successfully adapt to. That these cultures have ceased to exist is yet another lesson we can learn from.

It is also necessary to restate that critical reflection, experimental inquiry, dialogue between teacher and students, drawing upon student experience and interest, hands-on problem solving, and embodied ways of knowing are all essential to learning. They represent basic common sense. My criticism is directed at those who assume that there is only one legitimate approach to knowledge. The mediating role of the teacher needs to be based on a common sense understanding of the interplay of the social context of learning, the students' interests and level of background knowledge, what represents the most appropriate approach to learning (embodied, explanations, inquiry, ethnographic-based, etc.), and the cultural patterns that the teacher needs to make explicit. The teacher also needs to take account of the cultural differences in patterns of

metacommunication, as I explain the Educating for Eco-Justice and Community (2001). But the mediating role of the teacher requires that other concerns that are marginalized by all the constructivist learning theorists be taken into account. These concerns have to do with the content of the curriculum that is ignored because of the constructivist emphasis on being a facilitator. Freire described this facilitator role as being “engaged in a continuous transformation through which they (the students) become authentic subjects of construction and reconstruction of what is being taught, side by side with the teacher, who is equally subject to the same process” (1998, p. 33). I quote Freire again because I want to represent him and his following as accurately as possible in order to highlight their suspicion that teachers who bring background knowledge to the learning situation are engaging in the banking approach to education.

This emphasis on teachers engaging students in a process of learning (experimental inquiry, critical reflection, becoming, etc.) creates another double bind that needs to be acknowledged. The double bind is that the teachers who are trained in the various constructivists’ schools of thinking often lack the background knowledge that is necessary to their role as cultural mediators. The result is that both the teachers and students do not know what they do not know. When this illusory state of consciousness is combined with the liberal ideology of constructivist theorists—where change is equated with progress, the student’s subjective knowledge is viewed as the expression of autonomy, the relativity of values and knowledge as expressions of the student’s “authenticity”, and so forth—it is assumed that the students will be more self-realized, authentic, and free. Unfortunately, this is the state of consciousness that a consumer culture promises to raise to an even higher level of self-gratification. Contrary to Freire’s messianic approach to engaging everyone in the ongoing process of renaming the world, which Roberts describes as “a continuous effort to reinterpret reality” (p. 146), the traditions that might serve as sources of community resistance to the western project of monetizing every aspect of daily life—in all cultures—are either ignored or subject in Maoist fashion to “continuous transformation” (Freire, 1998, p. 33).

The Teacher as Cultural Mediator: Guiding Principles



The role of the mediator in labor negotiations is to bring together the two opposing sides, and to facilitate a civil discourse that will lead to an agreement over differences. Just as the mediator in a labor dispute needs to understand the background of the two groups, thinking of the teacher as a mediator retains the same idea of bringing together different perspectives and interests. It also includes the idea that the teacher, when acting as a mediator, understands the historical, conceptual, and lifestyle patterns of the different cultures that come into contact in a classroom—in the lives of the students, through the use of curriculum materials, and the culture that the teacher brings to the classroom. Unlike the labor mediator whose purpose is to resolve the differences between two contending parties, the teacher's role is to help students understand the assumptions, mythopoetic narratives, economic systems, uses of technology, and, more generally, the impact that the different cultures encountered in the classroom have on the commons. Unlike the labor mediator, the purpose is not to achieve a new level of consensus, but to engage students in an examination of the cultural differences. This understanding is essential to being able to recognize the likely consequences of adopting the traditions of another culture. In addition to the emphasis on clarifying cultural differences, the teacher differs from the labor mediator in another way. That is, the teacher's role is not to be neutral. How can the classroom teacher or professor mediate the differences between the agenda of the WTO and local decision making that leads, for example, to a law prohibiting the privatization of the municipal water system? As we all know, the ability of teachers to mediate between political and economic entities is almost zero. However, if the teacher's mediation is to help students to understand the differences that separate two or more institutions, governmental policies, or powerful economic trends (such as outsourcing of production or allowing a corporation to pollute the local water supply)—including the historical roots, interests in terms of who gains and who loses, and the long term consequences for maintaining a life supporting environment—then it may lead to a more informed level of political action. That is, mediation in this sense may help to revitalize local democracy. And local democracy is the only real basis for resisting the forces that are undermining the commons—and the only basis for affirming which local traditions are vital to what remains of community's self-sufficiency and identity.

The rate and scale of environmental degradation in the name of social progress should lead to abandoning the idea that the teacher can adopt the neutral stance of a facilitator of the students' decisions about what they want to learn. The idea that teachers should present both side of an issue and then let the students make up their own minds has been based on a number of misconceptions that supposedly fair-minded people have embraced. However, what is often left out of the conflict where two sides of an issue are presented has often been more important than what was included in the class discussion. The Great Books approach to a liberal education, along with the other well-intentioned approaches to letting the students decide, did not lead to the discovery of racism or gender bias—until political action outside the classroom forced teachers and professors to take a position. Once awakened to have had previously been ignored, many teachers and professors promoted an understanding of equality between different groups. Those who clung to the old silences and prejudices were also taking a position, while those who became aware of what previously was taken-for-granted presented students with examples of racist and sexist practices, provided an understanding of the origins and historical developments that led to today's awareness of yesterday's denials, and engaged students in discussion of social and personal consequences. Unfortunately, there are other silences that still outweigh in significance the two-sides-of-an-argument approach that still prevails in many classrooms. For most classroom teachers and professors, environmental problems are viewed as the responsibility of science teachers. And the rapid changes in cultures and local communities caused by the relentless efforts to monetize all aspects of life and the increasing automation of production and outsourcing are not even recognized—except where there is a glimmer of awareness that the increasing reliance on computers may eventually be automated to the point where fewer teachers will be needed.

Mediators in labor disputes often helped to improve worker safety, job protection, and salaries. But their neutrality was achieved by ignoring the need to take on the responsibilities of an educator. For example, they do not see their task as that of informing the public about the long-term implications of the trend that began nearly a century ago with decision-making being taken out of the hands of the workers and made a function of management. Nor do they see their responsibility as educating the public

about the economic and political agenda of neoliberal groups or, for that matter, helping the public understand what it is that politicians and corporate groups who call themselves conservatives really want to conserve. While the teachers' role as cultural mediator cannot bring two or more opposing groups together, they can provide the background knowledge about the history, interests, and future consequences that will likely result—depending upon which group prevails or what has become lost through lack of attention.

As there are few classrooms in the world today where western influences are not present (if not in the classroom then in the community), I want to suggest that the following guidelines may be useful in clarifying the difference between the teacher's role as a cultural mediator and the teacher's facilitating role in a constructivist-oriented classroom, as well as the teacher's role as an agent of the continuous social transformation that Deweyian and Freirean theorists advocate. In suggesting the different curricular decisions that are part of the teacher's mediating responsibilities, I want to emphasize that I have no suggestions for how the local cultures should go about the educational task of renewing their own intergenerational traditions. Therefore, the following suggestions for thinking about the teacher's role as a cultural mediator are meant to apply to classrooms where different western cultural traditions are present—in terms of ideas, values, behaviors, clothes, uses of technology, and so forth.

#### First Guiding Principle:

The teacher needs to be aware that the students' ability to exercise communicative competence in the political sense where language and background knowledge are essential to the determination of what issues are raised and future consequences are made explicit is dependent upon how the teacher mediates the process of primary socialization.

As explained in chapter three, when students are learning something for the first time (about some aspect of science, the use of a technology such as computers, or a historical fact or event, etc.) the words and concepts that are the basis of the new understanding exert a powerful influence on what and how the student will think about that aspect of culture. For example, if the explanation of technology is limited to a vocabulary that conveys the concept of technology as a neutral tool (and as the expression of progress)

most people will continue to think of it in this way. My claim here that the ability to explain relationships and to recognize issues is partly dependent upon the language acquired in the earliest stages of primary socialization. This claim can be tested by listening to how most adults think about computers—that is, as a sender/receiver technology that is culturally neutral. The generations of cutting-edge thinkers in a variety of fields, including eminent scientists such as E.O. Wilson, who still think of organic processes as having the characteristics of a machine that can be re-engineered, is another example of how language both enables us to recognize and articulate relationships and, in the example of mechanistic thinking, how it can result in thinking being controlled and limited by the earlier ways of thinking encoded in the language. In the case of Wilson and other prominent scientists, thinking of the brain as like a machine, can be traced back to beginnings of modern science in the sixteenth century. Other examples of primary socialization where the language carries forward earlier stereotyped thinking can be seen in how generations in the West were socialized to think that only men could be scientists, artists, historians, and theologians. As primary socialization was changed by giving students the language that named women who had made important contributions in these areas it then became part of the students' taken-for-granted pattern of thinking.

As pointed out earlier, what is made explicit, what is passed on as taken-for-granted, what is based on cultural assumptions that are never examined, and what is presented in an abstract way that represents it as universally truth, will influence what students are able to think about and articulate in social settings where vital issues are at stake. The inability of most American students to recognize what was lost in terms of craft knowledge and community relationships when the assembly line was introduced is an example both of what was not introduced by the teacher in the process of primary socialization—and of how a restricted form of primary socialization limits the ability to resist traditions that undermine the economic well-being of communities. On the other hand, a process of primary socialization that provides the historical background, that includes a vocabulary that is as complex as the phenomenon being presented to the students, that is related to their level of understanding and background experience, that makes explicit the underlying cultural assumptions (including alternative assumptions that would lead to recognizing new possibilities –or old ones that were mindlessly

overturned), and that assesses the implications for the well-being of all the participants in the commons—will have a different affect on the students’ communicative competence in the present and in the future. Hopefully, as adults their communicative competence will be used to address the unresolved eco-justice issues facing the world.

The key point here is that the teacher mediates between different approaches to the process of primary socialization—and this process of mediating between a restricted or an empowering educational experience is one of the constants at every grade level and in every subject area. The teacher’s role as a cultural mediator even extends to the different moral values that are encoded in the language used to communicate in different subject areas ranging from the sciences, history, economics, literature—and teacher education. As most teachers have been socialized in the limited way that represents language as a conduit through which information, ideas, and data are passed, they are not likely to be aware that the language they use in different subject areas encodes the dominant culture’s way of understanding relationships, the attributes of the participants in the relationships, and the culture’s moral norms for how to act toward others (including the environment) that possess the culturally prescribed attributes. The language of colonization-- of the environment and of other cultures--has only to be examined in order to see how language reproduces the moral norms of the culture. An example that comes to mind is the way in which literacy has been represented in classrooms as an expression of progress, and “illiteracy” (that is, oral cultures) as backward. Ignorance about the complexity of oral cultures became the basis of a cultural prejudice which, in turn, became a moral judgment that opened the door for missionaries and other promoters of Western Enlightenment ideas. As the content of the curriculum can only be shared through the use of language, the teacher needs to understand that teaching one of the sciences, history, or whatever, is also a form of moral education (or, as is often the case, moral mis-education).

The proposal that students should construct their own knowledge, and that this will contribute to their realization of being autonomous individuals, ignores the inescapable reality of how the metaphorically layered nature of language carries forward past patterns of thinking that become in many instances the taken-for-granted basis of the student’s thinking. The cultural patterns that the students take-for-granted also influence

what they are able to reconstructs through critical thinking and problem solving, which is the source of another double bind. If the student, like most of us, does not question what is taken-for-granted, and the teacher has abdicated responsibility for including in the curriculum the aspects of culture that need to be understood as essential to the democratic process of identifying what needs to be changed and what needs to be conserved and renewed, we then have a form of education that leaves the students more vulnerable to the different expressions of industrial culture. In the name of freedom and autonomy, the constructivist teacher furthers the forces that are undermining community and the natural environment.

#### Second Guiding Principle:

The teachers' mediation between the different cultural forces and trends needs to contribute to the revitalization of the commons. Furthermore, the teacher must be knowledgeable about the differences in cultural ways of knowing and the characteristics of the local bioregion in order to avoid mediation becoming a process of colonization.

While there are many forces contributing to the degradation of the environment (e.g., population pressures, destructive agricultural practices, exploiting fisheries beyond their ability to renew themselves, etc.) the industrial approach to production and consumption, which is predicated on the assumption that the “law of supply and demand” is the only safeguard needed for not exceeding the only natural limits, has the greatest adverse impact. The cultural assumptions underlying the spread of this industrial/profit oriented culture are reinforced in every facet of the public school and university curricula. In addition to the cultural assumptions about individualism, progress, evolution, an anthropocentric universe, mechanism as a model of thinking and problem solving, science as the most reliable source of knowledge, the primacy of abstract ways of encoding knowledge in every area of the curriculum, students also encounter through the ever present visual reminders of corporate logos and fast food outlets on campuses that their future and that of corporate culture are inseparable—and that they will need to adjust their life goals accordingly.

Unlike the constructivist approaches where the content of the curriculum is largely decided either by the shifting interest of the students or by teachers who follow

the central ideas of Dewey and Freire that education should be a process of “continuous transformation” (to quote Freire again), the teachers who are concerned with addressing eco-justice issues must not only be aware of the many ways in which the industrial/consumer oriented culture is being reinforced in the classroom; they also need to aware of the sustainable traditions that are part of the students’ cultural background. That is, the teachers need to mediate in a way that helps the student understand the positive contributions of science and technology, as well as the aspects of commons they undermine. In addressing the latter, the students need to examine the ways in which science and technology are still being used to further enclose (monetize) the commons, as well as how they are beginning to be used to understand changes occurring in natural systems and has to adapt human activity in ways that take account of the energy flows within natural systems. Students also need to examine the patterns of mutual support and other non-monetized activities and relationships within the different sub-cultures that are represented in the makeup of the classroom. A major focus of mediation should be on clarifying, in terms of everyday practices, the differences between industrial-oriented technologies and technologies that have been refined over generations of observing the changes occurring in the natural systems that are part of the commons. In light of these assumptions, the non-neutrality of the mediation process could not be clearer. Our future, in effect, depends upon students learning to think ecologically. The changes in the environment are now dictating that we face up to this challenge; which means that this recommendation is based on environmental imperatives and not on an ideology.

The revitalization of the commons involves mediating between the dominant culture trend where excess—in the over-sizing of SUVs, houses, meals, televisions, and body size—is being turned into a civic virtue and the still existing traditions of mutual support, mentoring, intergenerational knowledge of place, healing, and other activities that have not been turned into market opportunities. But mediation is not a matter of presenting students with an either/or set of possibilities and practices. Rather it involves helping the students recognize the trade-offs, how gains involve losses, that patterns of mutual support may involve the use of technologies and even industrially produced products, and that human activities need to be constantly assessed in terms of their

adverse impact on natural systems—with the new commandment being “the less impact the better for the present and future generations.”

Something more needs to be said about the teacher’s role in mediating between the forces of modernization and traditions that are re-enacted in everyday life. As mentioned before, Western education is based on the Enlightenment assumption that the rational process reduces the need to rely upon traditions. Indeed, many prominent Western thinkers view traditions as an impediment to progress and as in opposition to the various expressions of the rational process, including critical inquiry and experimental problem solving. As traditions include all the patterns, practices, technologies, ways of thinking, and so forth, that have been carried forward over four generations, the Western thinkers who view the rational process as a means of overcoming the hold of traditions do not recognize that their way of thinking of the rational process is itself a long-standing tradition.

Both Freirean and Deweyian thinkers view traditions as non-thinking habits and as impediments to the activities of “authentic subjects” engaging in the continuous renaming of the world. As I have pointed out earlier, this could not be a more traditional way of thinking—and one that has had a privileged role in the development of the industrial culture that has been trashing the environment for nearly two hundred years (a process that has escaped the attention of these supposedly rational thinkers). But the more important issue here is that in mediating between the various expressions of the culture of progress and the traditions that contribute to the renewal of the commons, the teacher needs to be clear that in helping students gain a more balanced and nuanced understanding of tradition, including the idea that taking seriously the importance of renewing traditions does not mean going back in time. Students also need to recognize that living traditions are not static, which they can understand better by examining the patterns of change and continuity within their own communities.

When traditions are understood in this way, educating for responsible citizenship in the commons is not a reactionary position. Nor should it be understood as recovering what has been lost. The challenge for the teacher is to help students identify the intergenerational knowledge and practices that have been marginalized by the attention being given to the traditions of modern, industrial culture that expand by undermining the



non-monetized aspects of the commons. If the teacher can keep in focus that anything that has been passed along for over four generations or cohorts is a tradition, it will be easier for students to understand that the basic conflict is not between progress and tradition, between the industrial system of production and consumption and the intergenerational patterns of mutual support and non-monetized relationships. Rather, what needs to be clarified, in addition to the fact that not everything we do, think, or make becomes a tradition, is that traditions need to be assessed in terms of their impact on the commons and thus on the prospects for successfully addressing the eco-justice issues that confront the world's cultures.

For example, the tradition of small farms (which has not entirely disappeared) that relied upon organic practices (again not a new tradition) makes a constructive contribution to the commons—in terms of providing more nourishing food, economic interdependence, and sense of community, and in terms of renewing the soil, providing the ground cover necessary for other species to exist, ensuring that the ground water is not contaminated with toxic chemicals, and so forth. The tradition of agribusiness, with its industrial approach to monocrops, use of pesticides and fertilizers that contaminate the ground water and become part of our body tissues, also needs to be assessed in terms of its impact on local communities and democratic decision making. Other traditions that need to be assessed include the placing super-sized Wal-Mart type stores on the outskirts of communities, and the tradition of small retailers located in the center of the town—where people interact in ways that are more likely to lead to conversations with a wider range of people, and to discussions of topics that influence local democratic decision making. The tradition of meg-stores where everyone is expected to purchase tools that they may only use one or infrequently needs to be assessed in terms of the tradition of the library, which has been adapted in Berkeley, California, as a tool library where tools can be checked out when needed and returned for use by other people. Renewing the tradition of thinking of work as returned rather than as paid needs to be compared with the industrial approach to work. And again, the reference point for sorting which is more suitable is the impact that each has on the commons. I say, “renewed” because it is a tradition that is still taken-for-granted within different

religiously based communities such as the Amish, and it is practiced even among families and neighbors in the dominant culture.

The above examples of cultural mediation highlight another point that is at the root of why the recommendations of the various constructivist theorists of learning contribute to the crisis of industrial culture. When the teachers avoid framing the issues in terms of dichotomous categories (e.g. progress vs. tradition, consciousness raising vs. oppression, etc.), and avoid indoctrinating students to accept without questioning the western god words of change, progress, autonomy, emancipation, the students will be better informed about the importance of asking “what do we need to conserve?” As both Confucius and Wendell Berry point out, if we want to put right our relationships and our sense of moral accountability, we need to use language in a way that accurately expresses what we stand for, and what we take to be the fundamental relationships. This brings us to the third principle that should guide the teachers’ responsibilities as a cultural mediator.

Third Guiding Principle:

Mediating between the neoliberal ideology promoted in universities, and by politicians and spokespersons for corporate culture and the conserving practices of environmentalists and others working to renew communities and cultures should be a constant focus of teachers who are concerned about eco-justice issues. While many cultures where constructivist educational reforms are being introduced are based on religions, cosmologies, mythopoetic narratives (or a combination of all three) that emphasize the importance of looking to traditions as the source of authority, the teachers and students still are being exposed to the influence of the neoliberal ideology that underlies the values promoted in the Western media, consumer products, and in many of their own government’s policies. Thus, it is important for teachers in non-Western classrooms to help students understand the broader implications of the ideological cross-currents in their lives. Clarifying the ideological underpinnings of the ideas, values, interpretation of historical events, and even the metaphorical language in the different areas of the curriculum is also central task of teachers in Western classrooms.

Suggesting that this should be an important focus is one thing. Expecting teachers trained in the constructivist ways of thinking to take it seriously moves into the domain of fantasy. It is important to keep in mind the nature of the assumptions constructivist teachers share (including Dewey and Freire) with the advocates of economic globalization. Even the constructivists who are critical of capitalism and globalization share with the more dysfunctional members of their extended ideological family the assumption that change is a constant—and the more of it the better. They also share the assumption (but for different reasons) that individuals must be emancipated from the community's network of traditions and responsibilities. Other shared assumptions include an anthropocentric way of thinking about human/nature relationships, the power of critical inquiry to free the individual or the group from the intergenerational knowledge of the community, an evolutionary way of thinking that represents the constructivist's one-best-mode-of-thinking as more evolved than cultures that rely upon multiple ways of knowing. All the members of this dysfunctional family of liberal ideologues, while genuflecting once or twice in their writings in the direction of suggesting that some traditions should not be overturned, assume that traditions impede progress .

As the classroom is often located in communities where various non-monetized relationships and activities are still carried on, the teacher is in a situation where mediation is unavoidable. Silence on the teacher's part is even an expression of mediation, but it is one that will often leave the student caught between the two worlds of consumerism and intergenerational expectations of mutual support—between the West's illusion of freedom and self-determination and the constructivist's representation of the community as the source of the oppression. The western media, curriculum materials designed for constructivist classrooms, and the spread of shopping malls that communicate the plenitude of the industrial way of life, and even the training of constructivist teachers—all reinforce the neoliberal ideology.

As a mediator between the ideology that promotes the spread of the consumer-oriented culture and what remains of the non-consumer practices and relationships within communities, teachers must take a position in opposition to the indoctrination and disempowerment that are hidden behind the liberal god words of individualism,

autonomy, progress, and freedom. Regardless of cultural setting, they can do this by asking the question that is never raised in the writings of the leading constructivist learning theorists, or in the practice-oriented textbooks written by their followers. The question that should be asked in every area of the curriculum and at every grade level is: What needs to be conserved (and why) and what needs to be changed? That few teachers ask this question, which takes account of the cultural and natural ecology that constitutes the students' world, testifies to the degree of liberal indoctrination that occurs in the teacher's own education, and in the education of the people who write the curriculum materials.

The irony is that while in their own lives teachers conserve (re-enact) the traditions they take-for-granted in their own homes and in the community, most teachers (and especially university professors) equate the words "conserve" and "conservatism" with a reactionary way of thinking. They also share the same basic misconception that is reinforced in the media when neoliberals are referred to as conservatives or neoconservatives. The question of "what needs to be conserved (and why) and what needs to be changed?" needs to be asked in classes in science, history, literature, political science, and in the use of computers and other technologies. Indeed, there is no area of the curriculum where the question should not be given extended attention.

In talking with others about why this question is especially important today, there is always the need to clarify how our political vocabulary is currently being misused by allowing neoliberals to masquerade as conservatives. This, in turn, requires explaining the contradiction in labeling environmentalists and people working to renew communities as liberals, especially since the industrial culture that is undermining both the environment and communities is based on the theories of classical liberal thinkers. Clarifying what conservatism stands for in terms of how we participate in the commons requires going back to the ideas of Edmund Burke's conservatism. This requires explaining his two key ideas about ensuring that changes make a positive contribution to life in the community and that each generation has a responsibility for carrying forward the genuine achievements of previous generations so that future generations can build upon them. The next step in this process of clarification involves explaining why Burke's understanding of conservatism needs to be expanded in ways that take account of

the natural ecologies that are the basis of the commons. Inevitably, the word “tradition” will come up in the discussion. The widespread misunderstanding of this word can only be addressed by connecting it with the everyday cultural practices, technologies, ways of thinking, and so forth, that go unnoticed as examples of tradition because they are a taken-for-granted part of experience. And when the conversation leads to understanding traditions in this more complex way, the question of which traditions should be changed and which conserved needs to be framed in terms of what contributes to the self-sufficiency of the community—which leads then to a discussion of the nature of the ecological crisis, and how the traditions of industrial culture have contributed to it. Asking the question about what needs to be conserved is much like peeling an onion, where each layer that is peeled back leads to another hidden layer that, in turn leads to a still deeper layer—until the core assumptions are reached.

To summarize the main point: the key question that needs to be asked in both western and non-western classrooms does not fit what teachers in constructivist classrooms would consider to be politically correct. However, I suspect that in non-western classrooms many students will recognize the messianic and colonizing nature of the neoliberal ideology that underlies constructivist approaches to learning. And while their Western educated teachers and educational bureaucrats may not recognize that the liberal assumptions underlying modernization are not universal principles that govern the “evolution” of all cultures, the parents and other members of the community still steeped in non-Western traditions will be aware that the state’s educational reforms are a source of intergenerational alienation. Whether the students will resist the pressures to become entirely dependent upon a money economy, which is promoted through the spread of industrial culture, is another question—especially when they realize that the promises of the industrial culture can only be achieved by the elites who control the system.

When I was first challenged to think about how teachers in the Quechua communities should teach the part of the curriculum prescribed by the government (seventy percent of which is to be based on western content) I initially thought that I would present two different explanations of the teacher’s mediating responsibilities. One explanation would address the pedagogical and curricular issues relating to eco-justice and the renewal of the commons in Western classrooms. The other explanation would

then address the same issues, but within the context of non-Western classrooms. Then I recognized that my lack of knowledge of the student's local culture meant that I had no right to make any recommendations about the teacher's mediating role in carrying forward and renewing the local traditions. This is the responsibility of the community in conjunction with the teacher, whether it be in a Zapotec, Muslim, or urban community in Brazil. The second realization was that when the curriculum is based on western knowledge the teacher's mediating responsibilities are the same for western and non-western classrooms.

The latter statement may appear to contradict everything I have written before. However, if the western part of the curriculum is understood not as representing the most advanced state of human knowledge and technological sophistication, but as the conceptual basis of an individually and materialistically-centered lifestyle that is being aggressively promoted around the world, then the suggestion that teachers, regardless of their cultural context, should view their role as cultural mediators in a similar way is not a contradiction. Regardless of whether the western curriculum is being taught in Armenia, Uzbekistan, Thailand, Japan, New Zealand, or the United States, the same fundamental problems exist. That is, while these cultures vary widely, they all face an ecological crisis—which may take the form of toxic contamination of food, water shortages, loss of topsoil and ground cover, droughts caused by global warming, and so forth. In addition, they all face the loss of intergenerational knowledge as the western media, and its imitators in non-western countries, promote consumerism and the other virtues of a western lifestyle. They also face the economic hardships that result from a monetized economy, the industrial approach to production, and the economic competition that is promoted by the policies of the World Bank and WTO. In effect, the multiple dimensions of globalization now confront different cultures with a common set of challenges—which also includes how to carry on the process of intergenerational renewal that is essential to maintaining a viable commons.

The dominant characteristic of all the constructivist learning theorists, as well as their interpreters that control the content of the required teacher education courses, is that they all emphasize learning as a process. As noted earlier, socialization is also a process that enables one to thinking within the taken-for-granted patterns of the culture—and to

become communicative competent in the culture's languaging processes. But what distinguishes the constructivists' understanding of learning as a process of inquiry and the construction of new knowledge from the patterns of everyday socialization is that the constructivist view of process places the responsibility on the student for determining what is important to learn. Socialization in various social settings usually involves an adult, peer, or someone with the knowledge that is being shared making the initial decision about what is important to learn. For Dewey, the content of socialization—the ideas, issues, historical background account, etc. —cannot be specified in advance. Nor can the knowledge be taught in a systematic manner where knowledge is build upon a previously acquired foundation of knowledge. Rather, learning occurs for Dewey in the ongoing process of reconstructing experiences that are found to be problematic. That many taken-for-granted aspects of the student's cultural experience would not be recognized as problematic did not occur to Dewey and his followers. The reason for Dewey's lack of awareness that what is taken-for-granted may represent a significant threat to the commons is that he lacked a theory of how language encodes earlier ways of thinking, and how most of a person's culture is learned at a taken-for-granted level.

Piaget's emphasis on aligning the curriculum with the student's stage of cognitive development, as well as his understanding of what constitutes the highest stage of reasoning and autonomy, also made any judgments about what a student needs to know both irrelevant and an expression of authoritarianism. Freire and his current followers are even more insistent that critical inquiry is the one and only valid approach to learning—in all areas of the curriculum. What Freire proposed in the Pedagogy of the Oppressed about the need for individuals, in order to achieve their highest potential as human beings, to rename the world and thus to become emancipated from the patterns of the previous generation is restated in his later writings. In Pedagogy for Freedom (1998), he writes that

the educator with a democratic vision or posture cannot avoid in his teaching praxis insisting on the critical capacity, curiosity, and autonomy of the learner....in the context of true learning, the learners will be engaged in a continuous transformation through which they become authentic subjects of the

construction and reconstruction of what is being taught, side by side with the teacher who is equally subject to the same process. Pp. 33 *italic added*

The writings of his chief followers—Peter McLaren, Henry Giroux, Donaldo Macedo, and Peter Roberts—continue to restate what has now become a pedagogical formula. Namely, as transformative intellectuals teachers are to guide students in reaching the highest level of process thinking, which is to subject all forms of knowledge and experience to critical inquiry. Roberts states the Freirean universal pedagogical Truth that is to guide education in all the world’s culture in the following way: “the ontological and historical vocation of all human beings is humanization” which means learning to think critically about how to transform existing structures—and to engage in the struggle of continuous liberation. (2000, p. 49-50), It would be hard to find a more direct statement of an educational theorist’s imperialistic intentions. Unfortunately, this insight does not come easily to those who possess a messianic spirit, an ethnocentric understanding of the world, and the hubris that eliminates any doubt that they—and only they—know the Truth that others should submit to.

As mentioned before, all of the constructivist learning theorists, as well as a majority of their followers, ignore the ecological crisis and the differences in cultural ways of knowing. In light of the reforms that should be understood as related to the teachers role as a cultural mediator, it needs to be restated that in sharing the core cultural assumptions that gave conceptual direction to the formation of the industrial culture of the West, all of the constructivist learning theorists should be viewed as reactionary thinkers. That is, their solution for addressing today’s environmental problems is to impose the largely British tradition of classical liberal thinking-- with its emphasis on change, individualism, survival of the fittest idea that emerges from critical reflection or economic practice, anthropocentrism, and viewing the rest of the world as culturally backward—on the rest of the world through the actions of classroom teachers who view their role as “transformative intellectuals.”

Themes and Issues that Need to be Addressed in a Western Curriculum:

Regardless of whether the classroom is in Syracuse, New York, Gallup, New Mexico, Cuzco, Peru, Tokyo, Japan, Oxford, England, or any other city or village where



the curriculum is based on western knowledge, there are certain themes and issues that must be addressed. These cultural themes and issues are essential to understanding the cultural basis of the ecological crisis as well as the local cultural traditions that need to be revitalized in ways that can help reduce the rate and scale of environmental degradation. These themes and issues include: (1) the tensions between the sustainable practices within the commons and the spread of industrial culture—with its dual emphasis on consumerism and the further automation of production; (2) the difference between modern and indigenous (or low impact) technologies; (3) the gains and losses connected with scientifically based technologies, including the colonizing nature of western science; (4) the ideology that represents change as a progressive force and traditions as a source of backwardness—and the destructive impact of this view of tradition on revitalizing the commons and local democracy; (5) and the aspects of everyday life that can be enhanced by learning to think ecologically as opposed to an industrial model of thinking.

What is particularly important is that students should be able to understand why these cultural themes and issues are relevant to clarifying what is constructive and destructive about the high-status knowledge of the West—which for the world's diverse cultures has an inescapable influence. Equally important is the need to emphasize that the constructivist approach to learning, regardless of whether it's the approach of Dewey, Freire, Piaget, or a watered down version of all three, does not require that the teacher possess an in-depth knowledge of anything. Constructivism, in its various expressions, requires that the teacher and students learn together. Any background knowledge in the sciences, history, geography, and so forth, is considered as suspect as it may become the source of imposition on the student—thus inhibiting them from achieving their “authentic” interests. Recall the way in which constructivist learning theorists rely upon dichotomous categories in order to make their case for their one-true-approach to learning. For Dewey the opposite of experimental inquiry is the spectator approach to knowledge. Freire relies upon the distinction between consciousness raising (critical inquiry) and the banking approach to education, and for Doll the opposite of an open system is a closed system. This degree of simplification and distortion of the multiple ways in which learning occurs is really quite remarkable, especially since generations of professors of education have embraced these categorical distinctions without considering

whether they account for their own largely culturally prescribed patterns of learning. One of the consequences of this follow-the-leader mentality is that teachers are not expected to have any in-depth knowledge of their own culture—or of other cultures.

What is being recommended here thus requires a radically different approach to teacher education and, by extension, what is learned in the other university classes. Without an in-depth knowledge of their own and other cultures, teachers in western countries will, in the name of individual autonomy and self-realization, reinforce the basic misconceptions that further undermine what remains of the community's traditions of self-reliance. In non-western cultures, the lack of in-depth knowledge of the cultural themes and issues listed above will likely result in the western content of the curriculum being presented as factual—and as the basis of the modern technologies and consumer goods that have such a seductive pull on the youth of many non-Western cultures.

Given this potential lack of background knowledge, the following suggestions may help teachers mediate between the cultural differences implicit in the western curriculum and the students' largely taken-for-granted culture. The first suggestion is to recognize that the curriculum, regardless of whether in a western or non-western classroom, has a built-in status system. What is included in the curriculum is the outcome of a political process that represents a judgment about what is worth learning. What is excluded from the curriculum is also the result of a political process of decision making about what is unworthy—and thus has lower-status. The political process of determining what is to be included and excluded may represent the efforts of the central government to undermine regional or ethnic differences, and even to create a uniform workforce. It may also reflect deeply held biases, often reinforced by what is learned in universities, that the educated must share their supposedly more advanced knowledge with the less advanced segments of society.

The teacher who is mediating between different cultural forces (including economic, ideological, and ethnic differences) needs to treat the curriculum, regardless of content area, as representing different approaches to knowledge. Part of the process of cultural mediation involves helping the students to understand not only the nature of the status system, but also how the status system is dictated by the contradictions in the industrial culture. The local knowledge that is excluded from the curriculum needs to be

made explicit, and examined in terms of its contributions to sustaining the commons. Similarly, the high-status knowledge needs to be assessed in terms of its consequences for the commons. As students realize the importance of the knowledge excluded from the curriculum, as well as the cultural transforming nature of high-status knowledge, they will be better able to make decisions that reflect what some scientists now refer to as the “precautionary principle”. This principle, in short, states that “when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically” (Rampton and Stauber, 2001, p. 134). Science, of course, is not the only basis for assessing the nature of a threat, which can also be directed at the well-being of the community. Housing projects, the building of a freeway, clear-cutting the nearby forest, selling a small local enterprise to a transnational corporation—can all be threats that suggest the need for invoking the precautionary principle. There is also the possibility that the high-status knowledge encountered in the classroom may convey the message that the oral/intergenerationally based knowledge that is excluded is inferior—and that those who live by it are inferior individuals.

When teaching western science, the process of cultural mediation should include a comparison between the high-status mode of scientific inquiry and the local approach to observation, prediction, and control that have been practiced over generations. Examining the local approach to science, which may involve the guiding principle of moral reciprocity with the natural world and a long term sense of responsibility for sustaining the commons for future generations, will bring out an important insight that can be marginalized by representing western science as more advanced. The key concept that should be examined relates to thinking of the sciences, not in terms of one being more advanced over the other, but as different sciences. And the examination of the differences needs to include the way in which local science is embedded in the mythopoetic/moral narratives of the culture—just as western science is also influenced by the mythopoetic/moral narratives that have shaped the Western cultures. That is, students need to understand the assumptions that underlie the Western approach to science: that it is based on the separation of facts and values, that it involves an objective

way of knowing, that the scientists are not responsible for how scientific knowledge is turned into technologies that may have unintended consequences.

In addition to learning about the method of inquiry and achievements of western science, the dark side also needs to be examined. This includes considering the connections between science and the production of weapons of mass destruction; the increasing merging of science, technology and corporate culture; and the whole range of ethical questions that are connected with the genetic engineering of plants and animals. And as part of the cultural comparison between western and local science, the ways in which Western science undermines the moral values of non-western cultures also needs to be considered—including the connection between western science and the consumer-dependent lifestyle that has become a major cause of environmental destruction. All of these aspects of Western science need to be assessed in terms of their impact on the life-supporting systems of the local commons—including their impact on the economic system that the local community depends on. Finally, mediating between the different approaches to science should lead to a consideration of what aspects of western science, and the technologies it has led to, can be adopted without undermining local traditions of self-sufficiency. In effect, learning about Western science in this way becomes a matter of exercising the “precautionary principle” where the new and supposedly superior approach to knowledge is carefully considered in terms of local traditions, needs, and patterns of moral reciprocity. The precautionary principle, when applied to the teacher’s responsibility as a cultural mediator, leads to local democratic decision making that is not predetermined by the assumption that Western science is superior—and that not to embrace it is a sign of cultural backwardness.

The treatment of technology, tradition, consumerism, as well as other themes and issues in a western-oriented curriculum needs to be mediated in a similar way. Western technology is also represented in the curriculum as more advanced rather than as different from the technologies that have developed over generations of dwelling in a bioregion. Mediating between Western and local cultural approaches to technology should be focused on the fundamental question of which technologies contribute to the health of the local ecosystems, and the systems of mutual support and self-sufficiency within the community. Further discussions need to address the ways which Western technologies

marginalize the development and use of craft knowledge, create a dependence upon a monetized economy, reduce the need for workers, undermine how ceremonies are an integral part of certain forms of work such as planting and harvesting, transform work from a communal to a solitary experience, create a dependence upon outside experts, and create indebtedness through the constant need to purchase the steady stream of new technologies. As in the case of mediating between western and local science, mediating between the local uses of technologies and the technologies being promoted as essential to economic development is not dependent upon taking university courses. Western universities are the seed-beds for creating new technologies, but they offer few courses that provide students with the opportunity to examine the questions and issues cited above. And there are even fewer university courses where students learn about the nature and uses of technologies in non-western cultures. The possibility that teacher education programs would provide guidance on how to address the questions about the differences between modern and traditional uses of technology that should be explored is non-existent. Teacher education is based on the assumption that technology is both culturally neutral and the latest expression of progress. The history of how technology has influenced the area of teacher education has been one of blind acceptance and hyper-euphoria about how the new technology would overcome previous limitations, followed by results that did not live up to initial expectations, followed by an unquestioning embrace of an even newer technology.

Teachers in non-Western classrooms should not be reluctant to engage students in a discussion of the questions and issues I raised because they feel they have not taken a course in the subject area. If they rely upon their own as well as the students' knowledge of local traditions, whether in the areas of scientific explanations, uses of technology, traditions that are relied upon, or whatever, they will have a sound (indeed more accurate) basis for engaging students in a comparative discussion of cultural differences. After teachers have discussed with students the knowledge presented in the Western curriculum, they should identify the assumptions that the western knowledge is based upon—and then engage students in a discussion of how this knowledge has influenced developments in western and non-western cultures. Again, teachers must trust their own ability to bring to the process of learning about the relationships and trends that they and

their students observe in everyday life where western influences are being intermixed with local traditions. A point that was made repeatedly in the earlier discussion of constructivist theories of learning, and how they have affected teacher education program, becomes critically important here. That is, the process approach to classroom learning has totally marginalized the importance of teachers being knowledgeable about the nature of culture—including how its traditions are largely taken-for-granted and unconsciously passed on to students who will, in most instance, continue to live by these taken-for-granted patterns. Teachers in both Western and non-Western classrooms need to break from this tradition of ignoring the complex nature of cultural traditions, and how they differ between cultures. In effect, teachers need to realize that they can compensate for this void in their own professional studies by becoming their own ethnographers—and helping the students to learn to observe the patterns they live by and to assess how these patterns (traditions) contribute to the health of the commons.

In addition to comparing the content of a western curriculum with local beliefs and practices, teachers also need to recognize that the process of cultural mediation is dependent upon understanding the languaging processes as being profoundly different from the way language is represented in western universities. As I do not have knowledge of how language is understood in non-western cultures, I will not make a generalization here. Therefore, the following comments should be understood in the context of the dominant way of thinking about language in the West, including the role that language plays in a western-oriented curriculum. But the pedagogical implications need to be understood by teachers in both western and non-western classrooms.

Western curriculum materials (and this is likely to be the case with curriculum materials written by educators in other countries who copy the western patterns) are based on the assumption that language is neutral: that is, a conduit through which ideas and objective, factual information can be passed. This view of language as culturally neutral, and as functioning as a conduit for passing ideas and information across from one person to others, is essential to maintaining the myth that there is such a thing as objective knowledge. It is also essential to the western myth that is so central to constructivist learning theorists, as well as to most academics. This myth represents the rational process, critical thinking, moral judgment, etc., as the activity of an

individual—with the further assumption that the greater autonomy of the individual leads to a greater capacity to be rational and to think critically. The myth of language as a culturally neutral conduit for communicating “factual” knowledge and ideas is also essential to the process of cultural colonization, which is dependent upon the members of other cultures using one of the western languages as the basis of their thinking and communicating. For example, the conduit view of language is essential to persuading the members of other cultures to accept the such words as “development”, “democracy”, “individualism”, “progress”, and “modernization” as representing possibilities that are universal in nature—and that are attainable as part of the process of cultural evolution.

The process of cultural mediation in western and non-western classrooms needs to be based on an entirely different view of language. And this different view of language leads, in turn, to viewing intelligence in an entirely different way. When language, as I described it in an earlier chapter, is understood as encoding and carrying forward earlier culturally specific metaphorically based conceptual patterns of thinking derived from even earlier processes of metaphorical thinking, then intelligence can more correctly be understood as largely cultural in nature. That is, to restate the basic connection, as infants are socialized to the language that carries forward the conceptual schemata of their culture, their thinking and behavior is largely influenced by the taken-for-granted thought patterns encoded (for lack of a better word) in the language. That is, language thinks them as they think within the language. Even though language carries forward earlier patterns of metaphorical thinking, the individual, when facing a new situation, may recognize a different analogy as having more explanatory power. So the above statement about language doing the thinking (so to speak) has to be qualified so that it is understood as being a powerful and largely taken-for-granted influence—but not entirely deterministic.

The teacher who is mediating between cultural differences in western and in non-western classrooms needs to be constantly aware of the metaphorical basis of what is represented in the curriculum as knowledge—about science, technology, history, literature, literacy, modernization, and so forth. As discussed in an earlier chapter, what is represented as high-status knowledge in the West is based on deep cultural assumptions, or what can be called root metaphors. Examples of these root metaphors

include patriarchy and anthropocentrism—the origins of which can be found in the mythopoetic narratives in the Books of Genesis. These examples are important for another reason; namely, that the root metaphors that are the basis of other cultures are also found in their stories of creation—or what I am referring to as their mythopoetic narratives. Other root metaphors that influenced the development and are still the basis of further developments in the high-status knowledge of the West include mechanism, individualism, progress, economism, and now evolution.

To summarize the role that root metaphors play in influencing the thought and behavior behind certain culture approaches to development: the root metaphors provide the interpretative framework for understanding relationships, how activities should be carried out, how problems are understood, the attributes possessed by the participants in the relationships—and thus the moral values that should govern the relationships. And the shaping influence of a root metaphor can be seen in many areas of the culture—and over a long period of time. The root metaphor also influences the process of analogic thinking where something new is being understood in terms of what is already familiar. Over time the analogy that prevails over other possibilities becomes encoded in iconic or image metaphors such as “data”, “traditions”, “development”, “freedom”, “creativity”, and so forth. The early twentieth century efforts to establish sociology as a science led to a process of thinking of sociological research as being like scientific research—and thus what was observed was also to be understood as having the same objectivity as what is yielded by Western science. To cite another example, the Western notion of creativity, if we trace the history of the metaphor, has shifted in meaning in ways that reflected the emergence of individualism as a root metaphor. And the influence of the root metaphor of mechanism can be seen in the process of analogic thinking that is going on in the fields of brain research, genetic engineering, medicine, education, agriculture, architecture, and so forth.

The challenge facing the teacher as a cultural mediator is the difficulty of recognizing how taken-for-granted patterns of thinking are present in the curriculum. And the problem is compounded by the fact that few if any teacher education programs prepare teachers to become aware of the root metaphors, processes of analogic thinking, and the iconic metaphors that are present in every page of a textbook, piece of literature,



scientific explanation, historical account—and present in every educational software program. What I am suggesting can and has been done by teachers who after generations of not being aware became aware of the root metaphor of patriarchy. Some teachers are becoming aware of anthropocentrism in curriculum materials. In both of these examples, teachers became aware of how language carried forward earlier culturally specific ways of thinking when social activists began to demand the end of domination—which was based in the languaging process that influenced every aspect of culture.

Since some teachers have proven that awareness of the shaping influence of language is possible, the next question becomes: what do the teachers as cultural mediators need to keep in mind in order to compensate for the void in their professional studies? Again, I want to emphasize that the awareness of the influence of language on how the students learn to think about their culture, and the influence on how they think about other cultures, is an integral part of a cultural mediation pedagogy in both western and non-Western classrooms. If teachers in a Japanese, Bolivian, or other cultural classroom is teaching part of a western-based curriculum, they need to recognize that the words have a history, and that they carry forward earlier processes of metaphorical thinking that were influenced by the prevailing root metaphors. An example of how words encode an earlier, culturally specific way of thinking can be seen in such terms as the “Middle East” and the “Far East.” Even though I must travel west in order to reach Japan from my home in Oregon the conventional way of talking is to say that I am going to the Far East. The words encode the thought patterns of British colonialism, where London was the center of the world and to travel from London to Japan or Iraq was to go east. Similarly, the word “pioneer” is often used in American textbooks to refer to the settlement of “wild” West. The metaphor carries with it the meaning of first people in a new space—the “unsettled West” or in space. The word “pioneer” encoded the way of thinking of the Anglo and Euro-Americans who did not recognize the indigenous cultures that had settled the land for hundreds of years as being human and thus as possessing any rights to the land.

In addition to helping students to recognize that words such as “development,” “individualism,” “literacy,” “data,” and so forth have a history and encode the assumptions that prevailed at an earlier time in a culture’s history, they also need to

clarify the nature of the root metaphors—including the historical circumstance that gave rise to them. When did thinking of organic life as machine-like come into the western pattern of thinking? When did it represent a more useful way of thinking, and what useful technologies did it lead to? When has it led to ways of thinking and to the use of technologies that have had a destructive impact on the commons in western and non-western cultures? How has this root metaphor reinforced other root metaphors such as “progress” and “evolution” that have become powerful ways of legitimating western imperialism? How does the root metaphor of mechanism differ from the root metaphor of ecology that is now becoming the basic interpretative framework for environmentally conscious people? Is the idea of the commons unintelligible to a person whose thinking is based on a mechanistic root metaphor? Why is the person who thinks in terms of ecological design processes, culture as an ecology, and natural systems as ecologies more receptive to thinking of the “commons”, and to recognizing that the idea of the commons overcomes the traditional way of thinking of the human community as separate from the natural environment?

Mediating between different cultural patterns means helping students understand that language is not a conduit, but carries forward over generations the earlier patterns of metaphorical thinking of a culture. That the metaphorical language of the high-status Western knowledge can also be a powerful source of cultural domination is also critical for all students to learn—both in western and non-western classrooms. In Western classrooms, the domination may take the form of undermining or creating areas of cultural silence about what remains of the non-monetized intergenerational traditions of the community. The language may also carry forward and thus dominate the next generation in ways that preserve patterns of discrimination. And it may reinforce the development of technologies that are environmentally destructive while representing them as a further step in “progress” and in designing the natural systems we want (which may really be a matter of creating new market opportunities for transnational corporations). In non-Western classrooms, comparisons between the local patterns of thinking, including the complex vocabularies that encode and carry forward the intergenerational stock of knowledge of the characteristics of the commons, and the language in the western-oriented curriculum needs to continually brought out in ways that

connect with the students' own language experiences in the community. Again it needs to be emphasized that the process of cultural mediation involves making comparisons between the abstract high-status knowledge represented in the curriculum and the cultural practices it leads to, the local knowledge of the students and their community. But the moral, political, and ecological framework that needs to be kept clearly in focus is the long-term sustainability of the commons. Morally, there are the eco-justice issues of living in a way that does not damage the health of others and the prospects of future generations. Politically there are the issues of local decision making, the right to protect what contributes to the systems of mutual support and self-reliance that reduce the prospects of sinking into poverty and to destroying the environment in order to survive. Ecologically, it means helping students to recognize the ecological thinking that already exists in the community, how ecological thinking can lead to reliance on the sun rather than the current environmentally damaging sources of energy, and how the interdependent systems that make up the commons requires thinking of the quality of life in terms of nurturing relationships rather than in terms of the acquisition of material goods

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Pages 82-92 from online book, Critical Essays on the Enclosure of the Cultural Commons (2007)

The Role of Mediator Between the Cultural/Environmental Commons and the Industrial/Consumer-Dependent Culture. It would not be inaccurate to claim that all uses of computers involve some form of learning. What is being learned, however, ranges from learning about changes in natural systems that can only be modeled by a powerful computer, participating in an online course that enables students to interact more freely than in a traditional classroom, acquiring the technical information for assembling a bomb and coordinating its use in a terrorist attack, to accessing information on government policies that otherwise would remain hidden from public view. Many pages would be required to list everything that is being learned from using computers. Not all forms of learning contribute to the well-being of the individual, the community, and the environment. And much of what is being learned, as pointed out in the earlier discussion

of how language carries forward the misconceptions of past generations, increases the ability of corporations and other anti-social justice groups to further exploit the cultural and environmental commons.

The question that now needs to be asked is “What should be the responsibilities of school teachers and university professors in this era of increased reliance on online learning?” Currently, there is widespread acceptance of the idea that public school teachers should be facilitators of student initiated learning. Teachers are not to impose their ideas upon the students, but rather limit their influence to that of providing a complex set of learning possibilities. However, as many students, even the very young, have achieved greater competency in the use of the computer than their teachers, the teachers’ role as facilitators is often reduced to that of making various educational software available—and leaving the students exposed to the values and cultural assumptions that the designers of the software take for granted.

In the upper grades as well as in university classes, the role of the teacher and professor continues much as before computers appeared on the scene. Assignments are expanded by making the computer a research tool that provides access to a wider range of information—including already written papers that students can download and hand in as evidence of their own diligent efforts. Online courses change the dynamics of the teacher/professor relationship with students in a fundamental way. Online relationships have the advantage of marginalizing skin color, as well as the clothes and body language that communicate social classes and ethnic differences that sometimes are the basis of prejudicial judgments on the part of the teacher and professor. Computers also tend to make the relationship between students and teacher/professor less hierarchical, as well as freeing students to exchange ideas with each other—rather than with an authority figure standing in the front of the room. Ideas and questions can be exchanged without becoming part of the power relations that are communicated through the body language that is often misinterpreted and thus damaging to achieving mutual understanding of what is being discussed. In addition there are the economic advantages for both the students and the university. Students can take courses while living a great distance from the university and even when their work schedules do not match the rigid scheduling of courses on a university campus. Universities gain economically by being able to offer

courses to large numbers of students scattered around the world. Thus, they are able to extend the “market” for online courses and degrees.

What may not occur to the professors teaching these online courses, or to the administrators ever in search of new markets from which to draw students, is that the online courses represent a form of cultural colonization to the idea that education automatically translates into a higher material standard of living. The colonization takes two forms: that of educating students to taken-for-granted Western assumptions—including the assumptions that Western technologies and ways of thinking are the most progressive and enlightened in the world. The other form of colonization that online education promotes is the way it represents both directly and indirectly the knowledge, practices, and activities of the local cultural commons as the expression of backwardness—even though the cultural commons is, in many instances, a storehouse of knowledge about how to live the more self-sufficient/non-consumer lifestyle that global warming will eventually force all cultures to adopt.

I have argued in The False Promises of Constructivist Theories of Learning: A Global and Ecological Critique (2005), as well as in the online book, Transforming Environmental Education: Making the Cultural and Environmental Commons the Focus of Educational Reform (2006) that given the adverse environmental impact of our industrial consumer-dependent lifestyle it is now necessary for school teachers and university professors to recognize how the high-status forms of knowledge they promote contributes to the ecological crises. In these two books, as well as in the other essays in this collection, I have argued that most academic disciplines carry forward the prejudices and silences that further undermine what remains of the cultural and environmental commons. If educators at all levels of institutionalized education are to contribute to slowing the rate of global warming and reducing the amount of carbon dioxide that is changing the chemistry of the world’s oceans they will need to recognize that the world is now divided in two ways: the industrial consumer-oriented culture that is now being globalized, and the diverse cultural and environmental commons that go back to the beginning of human history. The commons of cultures that have been heavily colonized by Western ways of thinking and the consumer lifestyle are being enclosed faster than the cultures still under the influence of religions that have not made economic progress the

highest expression of human success and a sign of God's chosen people. Unfortunately, many of their environmental commons have been degraded by population pressures, changes in weather patterns, destruction resulting from local and global wars, and the exploitation of their resources by international corporations. But this is another story that is not the primary focus here.

The issue that requires our attention is why these two cultural orientations –the industrial, consumer-oriented culture, and the diversity of the world's cultural and environmental commons—should lead us to rethink the role of the school teacher and the university professor. The fundamental differences between these two cultural orientations suggest the nature of the changes that need to be made in how we understand their responsibilities in this era of global warming. The suggestion that social justice liberal school teachers and university professors should reach a consensus about the primary challenge we now face is not likely to lead to widespread agreement. Indeed, getting agreement in our individualistic culture, where it is assumed that social progress is advanced when each person pursues her/his own interests, is like herding a group of cats. Even though my argument may be ignored, I will nevertheless present the reasons why teachers and professors should stop promoting an uncritical acceptance of the high-status knowledge that furthers the enclosure of the cultural and environmental commons, as well as the reasons why they should adopt the role of mediators between these two cultural orientations.

As mediators, the teachers' role should change from that of reinforcing the taken-for-granted cultural assumptions that underlie the industrial culture to helping students identify the **genuine** achievements of the last two hundred or so years of Western science and technology, as well as how the misconceptions of the past have prevented a more critical assessment of scientific and technological discoveries. That is, the achievements must be assessed in terms of whether they contribute to a more ecologically sustainable future, and to more socially just international relationships. In short, their mediating role requires avoiding socializing students to take-for-granted the idea that the industrialized and scientifically based West has achieved a higher level of development than the non-industrialized and non Western scientific based cultures. In so many ways, the decline in the ability of natural systems to support the current level of human demand suggests that

the hubris and the cultural assumptions formed in the distant past, and that still serve as the basis of the thinking of experts, are both fundamentally flawed.

Mediating between the two cultural orientations also requires that the cultural and environmental commons not be represented as a lost paradise, and the industrial consumer culture as a colossal mistake. If a colossal mistake has been made it has taken the form of ignoring the nature and ecological importance of the local cultural commons as well as the diversity of the world's commons. Not only have the cultural commons been ignored, but the promotion of high status knowledge has prejudiced students against the traditions and intergenerational knowledge that exists largely outside of the money economy. This mistake cannot be rectified by policies that further expand the economy and the level of consumerism, even if these policies also promote the wider use of energy efficient technologies.

Mediating between these two cultural orientations will require a fundamental shift away from those aspects of the Cartesian mind-set that are so widespread in our educational systems. Helping students become aware of the differences in relationships, values, and patterns of mutual support that separate the two cultural orientations will require replacing the assumption about the authority of their subjective judgments as well as their equally subjective perspective on an external world with a more focused and in-depth understanding of the complexity of the cultural patterns that are consciously and unconsciously re-enacted in everyday life. Introducing students to an ecological way of thinking will help them recognize that the dominant characteristic of everyday life involves interdependent relationships—with others, the environment, and the legacy of the past of which they may not even be aware. The Cartesian legacy not only misrepresents the autonomy of the individual's perspective on an external world, but also reinforces a key element of the industrial consumer-dependent mind-set, which is to ignore the legacy that everyday life is largely based upon. Viewing the past as irrelevant helps to ensure that what is being enclosed by market forces will go unnoticed—even as the loss, such as in the areas of civil liberties and mutual support systems, increases peoples' vulnerability to forces over which they have less and less control.

Mediating is different from indoctrinating or privileging one point of view over others. Rather, it requires recognizing that the old criteria for thinking about progress no

longer holds—which was largely a matter of equating new ideas and technologies with progress. Today, each aspect of the cultural and environmental commons, as well as the many technologies and expert systems, must now be assessed anew as to whether they contribute to the long-term sustainability of the culture, as well as a culture that has achieved a greater level of social justice. As I point out in Chapter 4 of the online book, Transforming Environmental Education, mediating between the two cultures may take the form in the elementary grades of helping students to articulate—that is, to name and to identify relationships and interdependencies that often go unnoticed. This may include discussing the differences they experience in face-to-face conversations and what they experience when communicating through the printed word—and through a computer. Later in the students’ exploration of the two cultural orientations they experience on a daily basis, the process of mediating may involve an examination of the differences between different forms of oral communication (face-to-face, narratives, expressive arts, etc. and different forms of abstract communication (mathematical and other forms of modeling, printed word, abstract art, learning about the past and other areas of the world that can never be evaluated in terms of direct experiences, ideologies derived from earlier texts, and so forth).

The range of activities, skills, relationships, and forms of knowledge that separate the two cultural orientations should be the focus of the curriculum at all levels of formal education—and the teacher’s and professor’s role as mediator should essentially be the same. That is, helping students learn how different forms of enclosure undermine local democracy and contribute to greater dependence upon a money economy that is becoming increasingly unreliable for many people. They should also help students recognize and understand how different forms of enclosure may represent a genuine contribution to the community and to achieving a more sustainable form of existence. The tradition of segregation in the South and the racial prejudices that dominated the workplace in most regions of the country was part of the cultural commons that needed to be enclosed—that is, it required overturning the use of racist language, narratives that upheld the virtues of slavery, and the laws that supported a racist society.

Mediating between cultures also requires helping students acquire an awareness of, as well as the language for articulating the empowering and mutually supportive



activities that are part of the local cultural commons. Learning the traditions of knowledge and interdependencies being lost when a corporation such as Monsanto introduces a genetically altered cotton seed that resists the pesticide Round Up, or when young people have been too preoccupied in cyberspace to learn how to prepare a meal using traditional family recipes that they have to rely upon industrially prepared food, could also be the focus of learning about the differences between the two cultures. Other examples include clarifying how giving corporations the same status and legal privileges as individuals, as well as the court's recent interpretation of what can be patented, have impacted the local cultural commons in different parts of the world. The mediating process should also help students examine the differences that separate the core cultural commons that sustain the identity and mutual support systems within their ethnic culture from the industrial, consumer culture where everything potentially is for sale—and where relationships between the producer and consumer are increasingly anonymous and based on the exploitation of young workers in factories located in the low-wage regions of the world.

Some professors may view as naïve and as a poor use of their special fields of knowledge the suggestion that their focus should be on the sustainable characteristics of the cultural commons, as well as on helping students acquire the communicative competence necessary for challenging various forms of enclosure that are both environmentally destructive and that create new forms of dependency upon a money economy. This response will reflect their lack of understanding of important characteristics of their discipline, as well as a lack of understanding of the complexity of the culture they, like their students, largely take for granted. As pointed out in the chapter on how Western philosophers have contributed to the Titanic mind-set driven by hubris and an excessive privileging of abstract thinking, most academic disciplines are deeply ethnocentric, as well as lacking in an awareness of how their most fundamental interpretative frameworks have contributed to the high-status culture that is overshooting what the environment can sustain. Reframing future inquiry in their disciplines can be achieved by examining how the dominant interpretive frameworks in fields such as economics, philosophy, political science, literature, psychology, sociology, business administration, educational studies, and so forth, have contributed to the different forms

of enclosure that are now being accelerated by the globalization of the Western system of production and consumption.

A topic as seemingly banal as helping students understand the difference between making something that is based on self-directed craft knowledge and skill, and industrial production, would require going into the history of industrial production, including the role that Taylorism played in creating the separation of intelligence from the act of production, thus contributing to the increasingly segmented and repetitious work of the assembly line. The history that students need to learn goes back even further to why the Luddites of the English Midlands protested the factory system, and then back to the forces that led to the enclosure of work itself—where the tradition of work that is returned was replaced by work that had to be paid for. It would also be important to learn why other cultures value different forms of production, why many commons-centered cultures have located their market in one location and held on specific days -- which is so unlike how our market-oriented mentality has made it an nearly inescapable presence.

There is also the need to bring an historical and cross cultural perspective to understanding the intergenerational sharing of a craft, which may range from glass blowing, making a musical instrument and a piece of furniture. The cultural assumptions that have created the status system that continues to influence how we think about the person who works with her/his hands can even be traced back to the ideas of Plato. Students would also benefit from exposure to the early history of the labor movement, as well as the economic and ideological forces that are now enclosing the local economy in so many different ways. Other seemingly prosaic aspects of the cultural and environmental commons need to be studied from a variety of disciplinary perspectives. Much of the research on these relationships has already been done, but it should be presented to students in a way that helps them understand their own embodied/conceptual experiences as they participate in different activities of the local cultural and environmental commons. Most of the existing scholarship that should become part of the cultural mediating process has not been framed in terms of the most crucial issues we face today—which includes the need to reduce the cultural practices that are contributing to global warming and to the changes occurring in the chemistry of the world's oceans.

The difficulty of mediating between these two cultural orientations is that most of the cultural patterns that need to be named, understood in terms of how they are part of an ecology of historical misconceptions, unexamined cultural assumptions, daily practices, ongoing languaging systems that reinforce many of the patterns most in need to being made explicit, are part of what both professors and their students too often take-for-granted. The ability to name and thus make explicit the taken-for-granted cultural patterns, and to understand how they interact with other taken-for-granted patterns, is essential for participation in the democratic process. If students lack the knowledge necessary for exercising communicative competence it will be impossible for them to resist the forces of enclosure as well as to conserve the practices and traditions that contribute to the self-sufficiency of the community. Indeed, it is more likely that they will not even be aware of different forms of enclosure—especially as they are usually represented as the latest expression of progress. As mentioned earlier, the failure of our schools and universities to identify the silences in the curriculum can be seen in how the tradition of habeas corpus has been enclosed by a combination of military, corporate, and market liberal ideologues, with only a minority of the population expressing concern. If students can't name it, know its history and why it is important, they cannot protect it.

In summary, when we begin to consider the relationships and forms of knowledge that are part of the process of mediating between the two different cultural orientations, we find that computers are extremely limiting. In comparing the limitations of computer-based learning to what is required when teachers and professors view their responsibility as mediating between the two cultural orientations, we find the following: (1) As mediators teachers and professors need an in-depth knowledge of the local culture that others take-for-granted—including the taken-for-granted conceptual and moral foundations of the culture of consumerism as well as the moral traditions that are the basis of the cultural commons social justice legacy. (2) The mediating process also requires face-to-face questioning, sharing of insights, developing the language for naming what previously was the un-named and un-recognized part of experience, and the continual comparing of the abstract representations of everyday experience with embodied experience. None of these requirements can be met by the experts who write the software, as they will be unable to represent accurately the local experiences, cultural

contexts, and the characteristics of the bioregion. The best they can do is construct abstract scenarios and models that may replicate certain cultural patterns of decision-making—but they will still be abstract and thus reinforce the spectator and game-oriented mentality of students.

The use of constructivist theories to justify the increasing reliance upon computers is also problematic. What we should have learned from earlier approaches to student constructed learning during the late nineteen twenties and early thirties, but didn't, is that students, like many adults, are unaware that what is most critical to learn—namely, what is taken for granted. Constructivist approaches to learning in the child-centered classrooms did not lead students to ask about racism and gender bias, nor were they concerned about the destruction of the cultural and environmental commons that were coming under assault by the new technologies and market forces that changed the meaning of the word consumption from that of a disease to a social virtue. Learning about the skills and accumulated knowledge connected with most cultural commons activities will be beyond the grasp of students who have been indoctrinated into believing that they can only find oppression and the stunting of their creative insights if they learn from the traditions of their community. The questions that should have been asked by the early progressive educators, and by today's proponents of constructivist, computer-based learning are: Will reliance upon the students' immediate experience and insights enable them to learn about the medicinal characteristics of different plants, how to perform the skills connected with the building trades, how to prepare a meal that has the right nutritional ingredients, how to set up a loom and to play a game of chess, and what civil rights they should protect? Will they be able to recognize the political changes that characterized other democratic societies that allowed themselves to be transformed into fascist societies? What the constructivist-oriented classroom teachers will not do out of fear of imposing their knowledge on supposedly vulnerable students is to ask the important questions. And this is exactly what the role of mediator requires—to ask the questions about the taken-for-granted and ecologically problematic aspects of the culture that few if any students have the background knowledge to ask. It is in knowing what the important questions are-- what taken-for-granted ways of thinking and experience need to be named and thus critically examined, and what needs to be changed and what needs to

be intergenerationally renewed--that makes the constructivist approach to teaching and learning so inadequate. Indeed, given the silences about the nature of the ecological crises that characterize the thinking of constructivist learning advocates, it would not be incorrect to say that their approach is an example of the culturally and ecologically uninformed leading those who lack the background for recognizing what is happening to the environment on a global scale.

Computer based learning provides access to important and to what is often misleading information, as well as a sense of an abstract community that reduces personal vulnerabilities. However, it can never be the basis for learning about the experiential differences between the cultural commons and a money dependent existence--or about the cultural roots of the ecological crisis that the computer, as well as the people who use it, are complicit in deepening.

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### **Examples of Comparing Taken-For-Granted Patterns in the Two Sub-cultures**

As suggested in the example of encouraging students in the early grades to give name the feelings, questions, relationships made possible and limited, and so forth, that accompany talking with others, and the differences when communicating through a computer or cell phone, different aspects of the cultural commons can be introduced at all level of the educational process. In the early grades, the mediating process move beyond the language and conceptual understanding of which the student is capable. If the same differences between orality and literacy were to be the focus at the university level, the historical, ideological, economic, and philosophical issues would be brought into the discussion—along with such questions about the ways in which technology (print-based communication) contributes to the enclosure of important traditions within other cultures. Thus, in the early the students' experiences in the areas of food, creative arts, ceremonies and narratives, moral traditions, craft knowledge and skill, technology, civil liberties and even language itself could all be the focus of discussion differences experienced by the students as they move between the activities in the two sub-cultures

The different experiences within the cultural commons and their monetized counterpart in the culture of the market place, to recall from Chapter 4 of Transforming Environmental Education, include what is being grouped into the following categories:

food, creative arts, moral values, ceremonies, narratives, landscapes, build environments and craft knowledge and skills, technology, language, and civil liberties. Each of these categories encompasses a wide number of examples, such as all the different approaches to preparing food and sharing it with others, as well as the different approaches to growing and preserving it. The creative arts includes poetry, theatre, sculpture, painting, dance, and so forth. The important thing for the mediator to keep in mind is that the initial discussion of the differences in experiences between some aspect of the cultural commons and its monetized and privatized counterpart begins with giving attention to the patterns and relationships of the student's immediate experience—rather than with the abstractions from a textbook, software program, or the teacher's prepared lecture. To use Bateson's metaphor, the map that does not have its origins in the immediacy of experience in different cultural contexts is more likely to provide little guidance for understanding the territory (the territory being the cultural patterns that the students' experience is embedded in). To paraphrase Bateson, "the map is not the territory"; or to use a different metaphor, the language that is not grounded and informed by actual experience may contribute to ignoring the lived experience. The use of a map that is disconnected from context is like the use of abstract words such as progress, freedom, individualism, and so forth. As mentioned earlier, few today ask what people who call themselves conservatives want to conserve, and people who use the abstract word "progress" as if it were universal seldom consider the destructive impact of new technologies or expert systems (though this traditional ability to ignore the degraded state of the environment is beginning to lead to minor changes in this area).

Mediating between how the students experience daily life in the two sub-cultures always needs to involve encouraging them to articulate their feelings, insights, questions, relationships, what is being limited and what is being made possible, sense of beauty and ugly, fair and unfair, what needs to be changed and what needs to be intergenerationally renewed. Depending upon level of experience and maturity, the historical, comparative cultural, and social and ecojustice issues need to be mutually explored. In effect, mediating must always begin with the student in her/his cultural context—which means it does not begin with some abstract situation such as learning about the Constitution or racism. These issues need to be brought into the discussion after the culturally

grounded/experience-based starting point has been established. The other key point is that in mediating the thought/linguistic/embodied dimensions of the students' everyday experience in the two sub-cultures, the paramount question must be: what contributes to the moral coherence and self-sufficiency of the community, and what contributes to a more ecologically sustainable future? One of the paramount goals of this approach to education is to help students acquire the knowledge and communicative competence necessary for resisting and even reversing the different ways in which the cultural and environmental commons are being enclosed by the excesses of the industrial/consumer-oriented culture. Language, that is the conceptual maps of previous generations, has too long contributed to our failure to recognize how we are destroying the natural systems we depend upon. But it is also important to recognize that we cannot put the blame on the language given to us as we become members of the language/cultural community. We have a choice in whether we will accept how the language given to us represents what we are experiencing or whether we want create new metaphors or to connect old metaphors with new analogs.

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