ENCOUNTER

EDUCATION FOR MEANING AND SOCIAL JUSTICE

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Editorial

Education for Life and Death

John Fentress Gardner

In July of 1998, one of the three great spiritual teachers of my life, John Fentress Gardner, died. John perceived the world with imagination and stated his convictions with clarity and courage. He understood that true knowledge is indeed a meeting of the Creative in the world with the Creative within ourselves. So he lived his life.

Even as his body was failing him in his final months, he contemplated the meaning and purpose of education in human life. Given the circumstances, it would not seem terribly unexpected that he would turn his attention to the relationship between life here on earth and the passage of the soul in death. For many of us, the notions of "education" and "death" in the same sentence are a contradiction in terms. After all, the very word, "education" coming from the Latin, *educare*, refers to a leading forth, a coming into life.

However, John, following Wolfgang Goethe and Rudolf Steiner, taught me that opposite forces in nature do not always cancel one another out but rather create new realms of possibilities. For example, Goethe demonstrated that it is the dynamic interaction of light and darkness that creates color. When light overcomes darkness, as is the case when we view the darkness of space through the white light of our daytime atmosphere, we see hues of blue. Conversely, when light is overcome by darkness, as when we view the white light of the atmosphere through the dark shadow of earth at dusk, we see hues of red, yellow and orange. Light alone does not make for color. Darkness is a necessary partner. So it is if we are to understand the full potential of life itself, death is a partner.

In October of 1998, I was offered the opportunity to publish some of John's last written work. I gratefully accepted and herewith offer John's essay, "Education for Life and Death."

—Jeffrey Kane, *Editor*

We say that we educate young people for life, but we seldom stop to wonder what we really mean by these words. Life as such seems to be so self-evident. It has so many aspects that no definition could include them all. We select, of course, the aspects that we feel to be most important. Nowadays, these usually concern information together with mental and technical skills that will be required if the individual is to "make a living."

Our educational process hopes also, of course, to establish ethical values and practical life-habits such as prudence and patience, compassion and courage, tolerance and tact. But our still fonder goals are a strong body, a clever mind, and equipment for success in the competitive struggle for a secure physical existence.

This article will suggest that while education today has given much conscientious attention to what it takes to be the basic goals of its efforts (namely good jobs at good pay, a healthy life style and some involvement in community), it has opened itself to being misled by the obvious importance of physical existence. In consequence, it has blinded itself to the less obvious but still more essential facts of spiritual reality. In the long run, therefore, its alleged practicality is proving to be less than actually practical.

Clearly, if the human personality is to live, grow, and function productively here on earth as a physical body in a physical world, it must eat good food and breathe fresh air. It must be wide-awake to see, hear and smell physical reality. It must skillfully exercise all the bodily functions of its five senses, its four limbs and above all its unique brain. Its mental attention must become both focused and aggressive, able to identify, analyze, and classify all manners of factual processes.

But when taken all together, do these various functions actually add up to a *human* life? In their variety and abundance, they almost seem to qualify. Indeed, an observer looking on from the outside at all the busyness could easily mistake it for an adventurous life that is freely chosen and enjoyed. But what do countless individuals themselves say, if we ask them: "How do you feel? Are you satisfied? Glad? Confident? Grateful? Hopeful and creative?"

Sheer information frustrates students because so little of it has any deeper meaning.

Many would answer, "Not so. I am too often fearful and depressed, helpless and even hopeless. I know I long for something more and other, something that I can hardly describe; an inner feeling I can't really name. I see everybody now as in such a hurry to catch up and get ahead, but I don't really feel a part of this. For me, life appears to be simply a big competition. I need to know something about a real basis and goal for it all. Even when in Nature, while it seems wonderfully complex, beautiful, and embracing (and sometimes threatening), I am often lonely, feeling myself to be an outsider and onlooker, standing apart from it. It's true many things undeniably attract me but my pleasure in them is not deep, and too often it does not last. In the midst of all these outer objects, people and events, I guess what I most want is really to love and be loved."

Surely, the world — in its parts and as a whole — has an outer side. But human souls long especially to experience it also in an inner way. They want their experience of the world to awaken feelings of love and gratitude, confidence, and direction. They want a creative fire in themselves to be kindled. Perhaps the real, generally unspoken, question of students for their educators is this: "What does your teaching about what you call the reality of life do to quicken and satisfy me in my heart, not just my mind?" And when this question goes unheard, they may seek the answers elsewhere or not at all.

Despite the good intentions on the part of both students and teachers, mere information goes against the grain. It not only disappoints, but it calls forth a spirit of rebellion. Nowadays, information is much praised and is becoming torrential, and the smothering effect of this torrent gives the feeling that it is actually much closer to death than to life: so abstract, so unbreathable. Sheer information frustrates countless student hearts, because while there is so much to know, so little of it has any deeper meaning.

Preparing for Life?

To think and talk about the purpose of education being "preparation for life" is, of course, easily understood and widely agreed upon. But the time has come to look at the matter from a completely different angle. We need only to stress that the whole question depends upon what we choose to call life.

For many students who have not lost their natural sense of what it means to be alive and active as people of heart and soul, the goal of life their teachers apparently have in mind neither satisfies nor strengthens. It contributes little to either security or happiness. If real life has meaning, the teachers seem to have missed it entirely, or at least mislaid it. When they persist in teaching their subjects merely as outer facts and information, without *human* meaning, they but deepen, in those who sit before them, unwelcome feelings of alienation and loneliness, insecurity and fear. The goals they set are not ones the purely human side of most students would ever have chosen for themselves.

The young person says, "When I think about the world, I want to feel the value of life. I want things to stand, however mutely, for something creative behind or above or within themselves. I want the whole course of events in my life to have a meaning that goes quite beyond my personal desire to exploit. Admittedly, such subtle meaning is beyond my mental ability to specify or visualize, but is not beyond my heart's longing. It represents

what is beautiful and intelligent, what is loving and lovable; that is the vision in my heart. Such a plan would link me and the rest of the world together on the basis of our shared, if subtle and hidden, reality. There is surely something joyful about it that makes life worth living."

To claim that education should prepare the young for *life*, in the usual sense, is to say that teachers are bent upon initiating them into only one of the mysteries of time. The passage of time brings forth ever new and often welcome surprises, but it also makes sure that none of these novel appearances will be of an enduring nature, for the stream of time incessantly moves on. As surely as its first deed is to bring forth life, its next is to swallow this life through death. Human beings, physically speaking, are born, live, and grow. But by the same laws of what we recognize as time, these beings are equally certain at last to find themselves aging, withering, contracting, and dying.

Whatever is born not only in but also of time, will surely die when it comes, as it must, to the phase that is time's second nature. It will inexorably be subject to death. If "education for life" is so conceived that it simply prepares for existence in time (as the medium that supposedly stands for life), it must recognize that is actually travelling all the time towards death. Whatever time has seemed, of itself, to create will also unavoidably be destroyed. There can be no two ways about it, for essential to the mystery of time is its apparently unbreakable link with death. Is this "fatality," when its time has come, to be foreseen with dread or confidence? For the young — unlikely as it may seem—how their parents and teachers feel deeply about this matter will be of fundamental importance.

In our time, all the sciences upon which our culture is based find themselves completely blocked, unable to shed any light on this question: Should we be feeling that death is the end of the human journey, or a whole new beginning? If the latter, as we suggest, a paradox becomes evident. What we call death must be the opening to some other form of life. And this new life must represent a different kind of vital reality: new consciousness, new senses, new faculties of movement and action—one of a radically transformed but essentially continuing kind. But physically based thinking and education today fail to prepare students for this mystery that death is inseparable from Life. The physically based sciences upon which education builds are unable to recognize the altogether real but altogether different Life that is, in fact, the essential nature of what follows human death. If education is not to continue its cultural and spiritual failure, teachers must begin asking how this paradox can be effectively, fruitfully translated into the very touchstone for reform and renewal.

Lower Selfhood and Higher Selfhood In Relation to Time

One way to gain a clue to this paradox is to reflect upon the basic difference between time and what lies qualitatively above it. To begin with, let us examine more carefully than we usually do the three aspects of which time is thought to be composed. These aspects are identified as time past, time present, and time future. Over against each of these let us set the all-important question of human existence — of actual *being*. We can both be surprised and disconcerted to notice that insofar as time is either past or future it cannot be said to represent real *being*. An advancing personality necessarily leaves the past behind and to its future it has not yet come. The human self may well have existed as genuine being in times past, and it may yet appear as a thoroughly human presence in the future moment or epoch, but at the present moment — which lies precisely between past and future — it faces the great question of real existence: Will it choose really to be in the present, or will it not?

This question cannot be answered either by time or in time, as it concerns that in the self which endures outside of time and above it. It is the lesser self, the ego born of time, that is met by the ques-

tion, but only the greater Self, the "I" whose being endures, can answer it.

What aspect of time is allotted for the settling of this question of full-fledged presence? If the answer is *now*, how long is this now? The present tense, the "now" strictly considered, is so small as to be immeasurable. It no sooner appears than it has disappeared. As time, it can hardly be said to exist, unless by use of memory (to recall life experienced in the no longer existent past) or imagination (to project life into the still not existent future). Neither of these two will contain actual being, unless it has been, or will be, given such life from the true center and source of being: the "I AM." This true form of selfhood, quite apart from ego-feelings, exists always, and it is therefore available to fertilize time; but when it is accepted, time gives way. Time no longer counts, or can be counted. The "I AM" subsists and endures above, over, or beyond physical existence — beyond both space and time.

Human destiny's great question, which always asks the transitory ego to go beyond itself — "to Be, or not to Be" — cannot be answered by either past or future time; and truly present time is timeless. So only the "I AM," whose habitat as far as time goes is always zero, can speak. The experience of true Being takes place independently of time. When it chooses to enter into time, as it can always do, *time yields*. Time withdraws and stands aside — waiting to resume its lower sway.

Interchange of Opposites

As we have been suggesting in this article, the half of human experience we call life is made whole by the death-half, and vice versa. When we come at last to recognize this relationship, a wholesome, absolutely needed breathing process begins. Dramatic contrasts and contradictions become, for a change, supplementary and mutually reinforcing. Heaven and earth begin working intimately together, rather than as far-spaced standoffs. Indeed, where one holds sway, the other is ever close behind or above or within it. The human ego comes to know itself in two ways: as actually physical and actually spiritual, as lesser self (I am) and greater self (I AM). The theme of paradox is basic not only for the human constitution and experience but for world reality.

Mental, emotional, and bodily health; the ideals of truth, beauty, and goodness — all require recognition of this right moment for reciprocal exchange. Each factor must not only sense, but invite and welcome, the moment that says to it: "Honor and trust your opposite impulse. Die to yourself; make way for the other. Die to become that which you gladly now greet! Realize that in this new becoming, you will not be losing yourself but will be made whole."

Perhaps we can be persuaded that human existence is marked by two equally real, desirably opposite kinds of experience; but we still would like to have a single, comprehensive and unifying term other than such a mouthful as "a blessedly wonderful, rhythmically wholesome breathing process." Let us therefore accept the simple word "Life" as this term. In doing so, however, let us never again lose sight of the fact death accompanies and is interwoven with life at every step. Death, indeed, not only opens the door to a *kind* of life, but one that represents the very Life of life — a life where inward being takes unmistakable precedence over outward seeming.

So we are led back to education. What can the rhythmical interchanges that constitute sound breathing offer as advice to educators as sound method in dealing with subject matter of all kinds, at all stages, and all levels?

If teachers insist upon preparing their students primarily, even exclusively, for life as the manifestation and experience of time, they will need to remember at every step that time, when properly understood, has these two inseparable aspects. In the first phase, the phenomenon of appearance "takes place"; and in the second, such place is displaced. Disappearance sets in. At first, the one aspect predominates visibly — but then it is the other's turn to take over. Neither aspect can be honestly confronted and justly appreciated without awareness of its ever-present, though hidden,

twin brother. When any method of education loses balanced contact with these two sides of the mystery we call "life" (almost identical with the meaning of "time"), it becomes fatally flawed. An inability to give equivalent value to death actually subtracts something essential from the whole positive experience of life.

How shall educational reform be accomplished in the medium that for so many people spells life and for whom the mere continuation of existence in time is taken as the basic criterion of life? Reform should be helping educators to enlighten their students, when these imagine themselves as being entirely bound up with time. They will not rightly know that this is not the case, until they recognize that although they are, indeed, travelling along the time road that will definitely be brought to an end at a certain moment, death in no way implies extinction. Death is not tragedy but opportunity — an awakening to active life in a higher, nonphysical form, quite above and apart from time. Then the release of the human soul and spirit gives every reason for rejoicing over the ultimate mystery of time — its necessary and rewarding link with death.

Even the youngest — and certainly all — children must be decisively prepared, in the sense of reverence and wonder, hope and trust, for what is called death, at the very same time they are undergoing preparation for what is called life. We feel ourselves all the more moved to ask: For what shall we educate? For the tangible or the intangible? For what can we usefully manipulate and master, or that which has a superior power that can helpfully transform and master us? Must it be the one or the other, or should it be both?

What attitude of heart and mind is suited to perceive the imperceptible, lay hold of the intangible, be sure of the unproven? What sincerity and purity of motive in seeking has power to call down that which lies above and beyond time? What honest, unselfish openness will feel assured when inviting intimacy with the hidden and allegedly unknowable?

It will help when our teachers make the transition from the quantitative and numerical aspect of their subjects, with its primary appeal to the intellect, and give equal and even superior attention to the qualitative, whose appeal is to wide-awake feeling. Then, at last, heart can begin to replace brains as our most reliable center for cognition of intimate truth. When the heart's silent reverence and wonder are permitted to take the place of intellectual aggression, one waits (expectantly, patiently, gratefully) for the heart to convey its own message in its own language. During this kind of trustful, focused attention, the heart is vividly enlisted and the will is movingly engaged. Later, last of all, conveyable insight will dawn and speak in the idiom understood by the inquiring mind. It will recognize that the deeper aspects of Truth will have been revealed to heart and soul. Their ability to awaken to *realities* will be what lifts inquiry to levels higher than the abstract, intellectual, and materialistic. It is they that have the power to thoroughly humanize every revelation.

The Mystery of Good Education

In an article of this length we cannot hope to enter now into details of either academic curricula or scholastic methods. There are so many subjects at so many levels and serving such different purposes. But perhaps a single example will suffice to show how the symbolic concept of rhythmical breathing can give the clue, at least, to how any and every lesson can advance as Life in a truth-giving, health-supporting way. Only to such lessons can we look for the actual transformation of our present culture, enthralled and misled as it has increasingly become by educational goals and methods that are leading us ever more deeply into conditions that are unworthy to be called either true life or true death.

Let teachers take upon themselves—not only as their therapeutic task but as their personal pleasure — the glad vow to insure that their subject, whatever it may be, will always be approached within each lesson period in a livingly twofold way. It will speak successively to both the lesser and the greater self — to both the "I am" and "I

AM." It will be at pains to enlist the whole of human nature, evoking a fully breathable experience of reality.

As the symbol of any particular kind of subject-matter, let a few seeds, in this case acorns, be placed before students. Let their hands and eyes examine these closely, taking wakeful account of their size, shape and color, perhaps also the weight and odor. Let their intellectual minds identify these seeds as belonging to the oak family of very large, strong, beautiful and useful trees. (A certain amount of added information, uncovered in the lab or taken from the lore of chemical analysis and biological theory can be added here, but to hold to our example of seeds as lesson subject, it were best to remain for now with the simple, intact acorn.)

Thus far, the lesson will have sought to activate the physical sense and the bodily oriented mind. They have taken account of what the class can appreciate of an objective, apparent reality. Now let the lesson pass from objective, tangible but transient appearance to the intuitively sensed potentiality that invests this appearance — that is, advancing from the visibly tangible to the invisible and intangible, thus calling upon other than physical senses (which senses are being gradually formed by this very effort) and upon an imaginative rather than an intellectual mentality. For this purpose, both sense-perception and mind need to relax the focus they have been directing upon the physical acorns. Without losing the power of focus, however, they must allow it to open and expand. Instead of looking with eye and mind, imagination and intuition will now be required.

The best tool that can be chosen for the concluding phase of this lesson will be silence, a stillness whose power of attention is no longer directed in a curious (but therewith unconsciously arrogant) way upon what was first handled as a foreign object. Rather, a feeling of intimacy quickens, as though about to deal with a potential friend, into whose health and prospects one makes bold, but in a modest and loving way, to inquire. Merely cool "looking at" now kindles to become cordial, hopeful "invitation." A hitherto closed door in the observers now begins to open. Not mind alone but heart is now seeking its own. Impatience is lost in honest wonder. The shallowness of desire, as it were, is replaced by the deeper feeling of love. The question is no longer: What can we as cool observers dig out, or as theoretical speculators add to these oak-seeds, but what can the acorns themselves — wonderingly, quietly, hopefully considered — tell us? What thoughts have they to offer to our human wakefulness? Not what thoughts can we come up with about the acorns, but what thoughts will they themselves convey to us as truth-oriented feelings that can be depended upon to ripen into truly objective thoughts?

Students are asked to picture as realistically as possible the active seed nature and essence they seek to approach — the one that lies somehow before them yet cannot be physically seen. Faintly to be sure, the mere concept of Oak, when intensified and waited upon, begins to take on presence and living shape for the heart. Not an elm or maple or beech, but distinctively an Oak — major and mighty! For some devoted observer it might seem to be born as the work of earthly soil and water below, of heavenly sun and stars above, as well as the winds and mists that blow between. It is surely not awake as humans are, but perhaps is therefore all the more fully in tune with the universe as a whole, to whom it looks.

If this single lesson may be used as a sample of the two-phased, heartfelt, humanizing approach being suggested for all lessons — no matter how different individually they at first may seem in their content and purpose — what are some of the bases that have been rounded? What has been accomplished that is spurned or ignored by most teaching done today, whether in public, parochial, or independent schools? A clear wake-up call to what we've been identifying as the ordinary "I am" consciousness is always made by good teachers: but then what of the subtler, deeper, yet more uplifting contribution of the imaginative and intuitive kind of intelligence — still focused and wide awake but in a new way? The first approach naturally but somewhat aggressively visualizes the ob-

vious flesh and form of the acorn being examined. Both of these are natural, actual manifestations, but both belong to the cycle of physical birth and death. The second approach opens itself to the invisible shaping power of Oak, as this surrounds and envelops all physical acorns. It is independent of their transience. This ideal, hidden, but livingly formative identity lives in a different dimension. As such, it never "exists" physically, so as to be seen by biologists, but "persists" or endures in its own realm, where it is available to what we have called the "I AM" consciousness. In opening towards it, this higher form of intelligence (of which all human hearts are capable, and which is the beginning of wisdom) is made aware of the reality of its own being in that same high realm. There mere life becomes Life, and truth, too, is reborn. Both become the kind of Actuality that the heart can recognize as its own.

When Time Becomes Real

Surely, true health and joy in living follow upon familiarity with and trust in the reality of the invisible, rather than the physical security that rests upon the tangible. True joy is born when intellectual understanding rises to imaginative and intuitive participation in the creative processes behind everything material.

The distinction is unusual and thus awkward, but it seems necessary to suggest that there is time living and time dead. Living time is quickened, at every instant made light and warm by that which has this power to transform — by the creative "I AM." Living time is no longer numerical; it has become spiritual and is not to be calculated. Actually enduring and ever present, its content is self-existent and self-productive. In contrast, the unresurrected kind of time is but a mechanized abstraction.

When uplifted and transformed by the "I AM," time becomes real. It is also synonymous with Life. Intact as Life, it passes without change over into death. For physicality has no hold on it. Called everlasting, it ever was and ever will be. Capable of infinitely variable manifestations while remaining ever essentially the same, it built the present universe and looks forward to the successor it will build with humanity as a key contributor, through its continuing powers of creative transformation. Real Time says of itself, "I AM, and for me, death is but a change of garments. I survive all of them because I produced them in the first place." The sign of a truly good, truly practical education is that it is mainly unforgettable precisely because it was conducted in living time. It remains because so marked. In childhood it is loving wonder, and it grows only more alive as physical aging and death approach. So called death has this Real time, this spiritual Duration, as its concealed partner and creative second nature.

What is the "I AM"? It is the spark that wakens to become a flame that burns only to transform and beautify. Whether concealed or apparent, outwardly active or still latent, it never goes out. The creative fire of the "I AM" is ever young, ever in its prime. It is the Tree of Life whose infinitely abundant fruits are not only enduring but ever as fresh as dawn.

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The Six Paramitas

Outline for a Buddhist Education

Nathaniel Needle

The six paramitas of Buddhism can be a viable basis for an effective alternative to schooling.

As an American Buddhist working in an American alternative school, I often wondered how I might start an organization that would merge these two precious and life-giving streams of experience. Unfortunately, right off the bat, the very phrase "Buddhist Education" conjured up, even in my own mind, an image of a sectarian curriculum aimed at inculcating some fixed body of doctrines or customs. This idea was completely at odds with the principles animating my experiments in teaching, such as respecting the student's power to direct his or her own learning, participate in forging democratic decisions, and carry on learning outside the confines of any building called "school." Among parents and students receptive to such an educational philosophy, I thought, many would have misgivings about a program derived from any religion, let alone one so unfamiliar.

Yet the dream of Buddhism and holistic, democratic education as suitable mates did not let go of me so easily. It followed me to Japan, where, as is commonly the case, expatriate life has granted me a broader appreciation of my own country's possibilities. It has pushed me to look more deeply into the heart of my own daily spiritual practice, to intuitively find the point at which the two streams intersect. Within the Buddhist teaching of the six paramitas, I believe I have found a way to unify at last my inward spiritual efforts with my outward educational aims.

Paramita is a Sanskrit word which is sometimes translated as perfection or virtue but which (to quote Suzuki-roshi, the late Zen master) literally means "to cross over, or to reach the other shore" (1970, p. 65). The six paramitas are *Dana* (generosity, marked by opening one's heart); *Sila* (ethical discipline, marked by not doing any harm); *Kshanti* (patience, marked

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by acceptance, allowing the moment to be as it is); *Virya* (effort, without strain yet relentless, marked by joy); *Dhyana* (meditation, marked by concentrated absorption); and *Prajna* (wisdom, marked by seeing clearly).

Now, it is not easy to create a community that simultaneously offers a shared spiritual discipline and a commitment to individual freedom. To come right to the point, how would we prevent these marvelous keys to our unfolding, passed along through the millennia, from becoming in-group jargon, or, worse, dogmatic tools for a control scheme bent on conformity? Of course, no matter what, it is the psychological make-up of the folks involved that will make the difference. Even so, if we take our cue from some of the Buddha's own premises, I think we can get started in a fruitful direction.

Trust yourself. The Buddha enjoined people to believe nothing on the basis of authority, but only as a result of one's own reflective experience, of observing what is in fact conducive to one's own well-being and that of others.

You are Buddha. You are the only person who can awaken the Buddha within yourself. Teachers and teachings can only support you in this process.

Words are not the truth. Words, rituals, and outward signs cannot substitute for inner skill and experience and can in fact be hindrances, tempting us to mistake show for substance. Any kind of overbearing perfectionism, unvarying routine, or sloganeering would be a sure sign that we had lost our way. The paramitas must be reflected, not so urgently in the content of learning and teaching as in its context: in the way we relate to one another and conduct our daily lives. I am charmed by Bhave's idea (1996) of "invisible education," which he likens to the sugar in tea. We do not mention the sugar when we say we are drinking tea, but it is there anyway, sweetening the tea without calling undue attention to itself. When we do talk about the paramitas, we should be able to connect them to actions and feelings that are commonplace in our experience.

Watch your mind. The cornerstone of Buddhism is a detached and unflinching awareness of all the comings and goings of one's mind: sensations, thoughts, feelings, intentions, even consciousness itself. Regarding outward speech and action, our first task is to know where we are coming from. Our most insidious lies are the ones we tell ourselves. When we are not aware of our inner life, when we are not minding our own store, so to speak, it is easy to hide our desperate need for control behind requests for "cooperation" or mouth mantras about serving others while actually craving a medal for holiness. Ken Jones, in his book about Buddhism and social action (1989), calls this split between what we express outwardly and what's really going on inside "the Janus effect" after the Roman god with two faces. He describes how even groups with noble aims can fall prey to the ego-driven agendas of the individuals in them. I can only hope that in a group familiar with the wiles of the mind, some spiritual friend will spot my lie for me if I don't catch it first.

The path and the goal are one. The function of the paramitas is to ferry us to the other shore of liberation from the bondage of ego-self. Yet we must take completely to heart Suzuki-roshi's remark that with each step of the crossing, the other shore is actually reached. All I have to do is immerse myself in the nitty-gritty step I am taking here and now: watching this breath, letting go of that angry feeling, noticing the fear behind what I just said to my wife, and so on. That is the Buddha of this moment. If I start imagining a linear path with people parading along in some hierarchical order, before you know it I will be moralizing to those I think are further back and allowing myself to be moralized to by those I think are up ahead.

Your obstacles are your teachers. The Buddha's aim was intensely practical. Having realized that existence is inherently beset with the disease of suffering, he set out to find a fundamental cure. He located the cause of human suffering in our ignorance of our originally selfless nature. From that ignorance, and the accompanying fear bound up with the idea of a "self" arise our twin habits of greed (craving or attachment) and anger (hatred or dislike). The poisons of one's own greed, anger, and ignorance are what produce suffering, quite likely for others, but absolutely and inevitably for oneself. We are all in the same boat, afflicted with the three poisons; it comes with being human. At the same time, however, we are all essentially Buddhas, endowed with the potential for self-liberation. We therefore have the power

actually to transmute greed, anger, and ignorance into nourishment that, like compost in a garden, gives our spiritual bacteria something to feed on and decompose. Putting it another way, the three poisons are like gravity for a weight lifter or mountain climber, as the force against which we push in order to get strong or go up. Goodness is thus an accumulated skill cultivated as a result of dealing with, over and over, that perfectly designed training apparatus, the three poisons. Ultimately, character growth does not result from any approval-seeking, punishment-avoiding obedience to the moralizing of others. Rather, it is a matter of honing one's skills through persistent practice, which is likely to involve a fair number of falls, scrapes, and bruises.

As in a devoted yet relaxed basketball club, we can imagine people of all ages, at all levels of skill, with complementary strong and weak points, helping each other develop their game. As in any game, we improve by honestly admitting our errors and transforming them into lessons, without getting so stuck on the last shot that we miss the next three. The paramitas are the specific set of psychic qualities needed to play this game. They represent precisely targeted antidotes to the three poisons that open the gate to a harmonious community as well as to one's own spiritual awakening. They are tools for getting wise to the "compost." Each deals with a different angle of the same ego story.

Dana. Giving, be it time, money, attention, or anything else, requires the practice of *trusting and letting go* of attachments despite the impulse to hold on out of fear. Upon a bridge which I cross on my way to work stands a silent monk, begging. Every time I reach into my pocket for a 100 yen coin (now about 75 cents), my mind clutches at me: to keep it, or at least. give less! Each time I go through with that small gift, I diminish the power of that strangling little voice, and step into a bigger life. Giving includes forgiving, which is compassionately letting go of resentment and the compulsion to punish oneself and others.

Sila. We usually stress the negative aspect of ethical discipline: no more drugs, no extra sex partners, no fibbing about where I was last night. Undoubtedly we need this power in our psychic first aid kit, especially in emergencies. However, underlying our tendency to grasp for more (more things, more stimulation, more compliments, more victories over others), is our inability to practice *grateful satisfaction*, to absorb it thoroughly in each bite, each sip, each breath, each dose of fully experienced reality. At the root of ethical discipline is the expansion of our capacity to *receive*: to be so busy saying "yes" to what is in front of us at the moment, that saying "no" to more becomes less frightening, and thus easier.

Kshanti. This brand of patience involves the cultivation of a sense of *inner self-sufficiency* in the face of the impulse to control others and situations in order to relieve discomfort. The other day I was meeting my wife and son outside a train station before going out to dinner with them, and they were late. It was a hot day, there was no place to sit, and I was hungry, sweaty, and tired. I thought of past waits when I had slowly built up anger and frustration, then vented it on my wife. This time I tried something better. I got myself something cool to drink. I looked at people, imagining their lives. I did a little walking meditation. She came before long. Nobody suffered. Patience, I believe, reflects our power and responsibility to take care of ourselves internally. When outer changes are called for, patience enables us to select actions that transform the whole situation, rather than knee-jerk reactions that, at best, appease discomfort but briefly, and at worst, sow seeds for multiplied suffering.

Virya. When I was a child, we used to play ball on a hot summer day until it was so dark that we simply could not see the ball any more. Nobody thought about yesterday's or tomorrow's game; that game was a complete cosmos unto itself. The secret of this kind of joyous, inexhaustible effortlessness-within-effort is practicing *full participation* in each complete moment rather than resistance, comparisons with past results, or anxiety over future results. If I try to write on this hundred-degree day, crammed with thoughts of making the future better than the past, or completing my incomplete life story, or living up to a self-image built on past achievements, then I have to keep whipping myself as I run out of energy. When I simply immerse myself in this day's labor, grateful for my small electric fan and glass of iced green tea, then the article and I become one. My wife has to pry me from the keyboard as dinnertime comes around.

Dhyana. This means to practice *concentration and awareness* as a response to distracted and compulsive thinking. The foundation for this practice is sitting quietly and following the breath with the mind. One allows distracting thoughts and feelings to come and go like guests in a hotel, returning one's attention again and again to the breath or to some other focus of concentration. However, as the Vietnamese Zen master Thich Nhat Hanh (1990) has described, this quality of calm, one-pointed concentration, while maintaining awareness of what one is feeling, thinking, and doing, can be extended to our daily activities, such as brushing one's teeth or starting the car. Further, the tradition of Zen arts such as archery, the tea ceremony, and calligraphy, demonstrates that we can undertake complex activities in a way that both allows for and is amplified by concentration and mindfulness.

Prajna. A mind that can practice trust, satisfaction, self-care, full participation, and concentrated awareness has a greater power to *see things as they are* rather than distorting reality with compulsive and egocentric habits, aims, and opinions. Sometimes I have gotten involved in emotional conflicts between children involving cookies. One child's mind may be clogged up with fear of losing a cookie, fear of not getting enough cookie, desire to fight others who want the cookie, and resistance to working out the cookie conflict. I have on occasion noticed that as feelings are shared and respected, creative options batted about, and time allowed to pass, a shift occurs. There appears a tiny relaxed space in which the possibility can bloom that a fraction of a cookie is not the child's whole being. This empty space is the wisdom space, and how we can expand it, get to it more easily, and learn to live from it is the core purpose and potential fruit of a Buddhist education. Wisdom is the process by which we come to know that the limited thing we thought was our whole being is not. The divorce of science, arts, crafts, language, mathematics, and history from this wisdom process is the greatest tragedy of education as practiced in our time.

The Dalai Lama cautions that each paramita is bound up in all the others: "a genuine or ideal practice of each of the perfections must be complete; it must contain within itself all of the aspects of the other five perfections" (1997, 134). Suzuki-roshi echoes this: "Actually, these six prajna paramita are one, but as we can observe life from various sides, we count six" (1970, 66) Thus, wisdom (*prajna*) is not complete until it is infused with the compassion of giving (*dana*), whereupon greater joy comes from giving up one's cookie than in eating it oneself. Since the paramitas are really like fine shades of a single color, the edges between them are fuzzy. When I wrestle with my three poisons, they feel like slightly different holds or grips. I may need to shift my grip a few times before I hit upon the right combination needed to get the best of my opponent (teacher!) of the moment.

Since we are interdependent beings, each paramita must be engaged at three levels in order to establish an ecology of human development: a level of personal practice; a level of educational relations with other individuals; and a level of social participation in the life of one's immediate community, extending gradually to include one's relations to all living beings on earth. Personal practice means the individual, private effort to develop personal mastery of the paramitas. To take up any kind of personal practice must be a free individual decision if it is to be of any benefit. Educational relations means the way in which all of us, at whatever level of ability our age, experience, awareness, and degree of skill allows, relate to each other while keeping our influence upon each other's growth in mind. This includes all the avenues along which teaching and learning pass from person to person. It assumes a two-way relationship in which the teacher is always learning something from the learner. By social participation I mean the way in which our personal practice and our educational relationships are extended to and supported by our immediate community structure and activities, and how this community in turn circulates this energy into the world.

Regarding personal practice, there can be no universal form; what works depends on one's age, personality, style, life experience, and the examples one has ready to hand (in short, one's karma). People of all ages, sharing their experience with each other, can invent countless creative paths. Breath or chanting practice, informal chats with friends, formal support groups, stories, personal rituals, journals, relaxation,

and mindful daily activity are just some of the ways practitioners cultivate skill in these areas.

Can the same openness and self-reliance found at the first level, that of personal practice, extend to the second and third levels, that is, the various modes of teaching and learning, and the components of the organization itself? With the paramitas as a spiritual framework, I am convinced it would be possible to create an educational organization imbued with the heart of Buddhist teaching, but which could open this heart to others without dependence upon ritual or scripture. Anyone might be able to feel at home in such a place, no matter what his or her outlook on religion or spirituality might be. Further, it is possible to imagine a place that would not be an "alternative school" so much as an alternative *to* school. In such a setting, variously scheduled activities of all kinds, richly intermingled with seas of unscheduled time, could give rise to an overarching culture of learning that would obviate the very notion of curriculum. Finally, this learning community could exert a healing and balancing influence, not only on young people, but also upon their parents, grandparents, and other adult members. While respecting the inclination to hang out with people one's own age, I want to contemplate an organization which could bring generations together for many purposes: making money, making beds, making music, and pursuing all kinds of economic as well as non-economic activities, blurring some conventional boundaries in the process.

This makes it tough to choose a word to describe the place! Drawing upon a Buddhist image, I would like to talk about a "temple" as a place where people can learn, meditate, deepen friendships, organize, play, and also leave their kids, within a shared spiritual context that requires neither formal adherence to Buddhism, nor worship of Buddha, nor abandonment of another religion. I will use the word *sangha* to mean the congregation of formal temple members of all ages, leaving open the possibility that people may also participate simply as consumers (for example, taking a meditation class or attending a concert) or as guests (as at a meal or a celebration). Actually, with the exception of not providing an alternative to school, this is more or less how the Zen Buddhist Temple in Ann Arbor, Michigan, to which I still belong, operates.

Perhaps the best metaphor for such a temple is that of a pump, like the heart itself. The *sangha* would, from their own ranks, elect a staff of about half a dozen "lay monks" to live onsite with any family members, forming a small intentional community devoted to maintaining the integrity and vigor of the temple. Other *sangha* members would carry on their lives in the social mainstream. They would participate in temple activities as work, school, family, and personal schedules permitted. Ideally, however, rather than compete with these other spheres of life, the temple would open up possibilities for members to integrate them. Those younger than 18 might join the *sangha* as the children of adult members, or in their own right with their parents' permission. Some might board, spend the day, or otherwise rely on the temple as their alternative to school. Others, whether schooling or pursuing home-based learning, might just join outside school hours or for special activities. Kids in school might even find the temple a quiet, supportive place to do homework!

As we formed an educational community spanning the generations, we would bring to it all the imbalances of our contemporary American life: isolation from nature, each other, and our own inner voices; dependence on over-consumption, convenience, and mass-produced culture; and sheer inability to influence the forces shaping our lives. Within the temple, however, we would develop, and gradually come to rely upon, a raised standard of living in human rather than consumptive terms. Based on this common experience, we would gain the strength and vision to make healing changes in the way we live generally, and, it might be hoped, in society at large. This, of course, raises the critical question of what would be pumped, and how. To answer this, let us examine each paramita in turn.

Dana

Dana, at the level of educational relations, is expressed by reliance on personal *example*: setting an example *for* others and following the example *of* others. How are generosity, trust, and letting go related to example? The decisive step into an education based on *dana* is to renounce the purpose of education as a means to competitive advantage and personal economic advancement, and to substitute the

purposes of human development within community and the relief of suffering and inequity in the world. *Dana* means defining strength in terms of the capacity and willingness to lend strength to others. I cannot suggest such a renunciation to another unless I make it myself. Concretely, when a young person is surrounded by adults who are clearly living vibrant, rich, and laughter-filled lives based on something other than personal income or status, this is what lends that youth courage and a sense of possibilities. Giving from the heart is something one can only teach by example, since no one can give for another.

When teaching is framed within the context of giving, one's own development becomes a gift to others as well as to oneself. In this case, example becomes the central way in which we inspire and are inspired by others. It is each person's primary contribution to the culture. Moreover, to teach by hoeing one's own garden is a profound act of letting go, of trusting in the power of what one does over what one tells others to do.

This power can be multiplied by a mutually supportive group of teachers with complementary strengths and weaknesses acting in harmony. As mentioned earlier, I imagine the community being served by a staff of about half a dozen such "lay monks." Whether formally Buddhist or not, they would make a common vow to support each other in paramita practice, in ways to be defined amongst themselves. They would be charged with reflecting the paramitas within the management and facilitation of six core community functions. With advice and support from the *sangha* as a whole, kitchen and garden, housekeeping and maintenance, finance and business, cultural activities and resources, action for social change, and membership (which would include matters such as celebrations and ceremonies, mutual support networks, internal and external communications, and expansion) would be divided, shared, or rotated among the staff according to best wisdom.

The monks, aided by other members of all ages, would staff a free, safe, and creatively equipped learning space for young people, as well as initiate or facilitate the organization of activities for adults and youth which would occur within and between these six functions. These functions would become vehicles for teaching by doing, which would include the monks visibly learning from their mistakes.

For mistakes there will be; there is no question of anyone being a paragon! The staff's biggest challenge may be allowing their messy process of turning their personal compost into spiritual nutrition to be obvious, certainly amongst themselves, but within the *sangha* generally as well. What is expected is a scrupulously honest yet in no way self-abusive commitment to that process. Monks would join hands for mutual aid in paramita practice within the midst of their so-called worldly responsibilities to family, *sangha*, and the larger society. These responsibilities would make them natural, although not exclusive, leaders within the *sangha*. Only sincere experiment in the spirit of *dana* would lead to an elegant balance between the job authority of the staff and the ultimate authority of the whole *sangha*, including all ages, making decisions democratically (see *prajna* below). This internal "*dana* pump" would be complete only when both sources of wisdom and power mutually encourage as well as correct one another.

At the level of social participation, we would express *dana* through temple projects aimed at investigating, raising awareness of, and *acting upon suffering* in the world. The Buddhist notion of karma, or the law of cause and effect, means that the injustice, deprivation, and hatred in the world today are neither ordained by supernatural powers nor beyond human control. They are the result of our actions of the past based on greed, anger, and ignorance, which include inaction in the face of others' suffering. Our actions in the present based on the six paramitas can not only neutralize some of this bad karma in the present, but sow seeds for future goodness with results far beyond what we can see in our lifetimes.

However, the spirit of *dana* that moves us to act must be tempered by *prajna*, which enables us to see clearly. I recently read an article by an aid worker that said that funds sent to fight starvation in the Sudan wound up being controlled by the very warring factions responsible for the hunger. Apparently these militias use food as a weapon of fear and reward, and as fuel for yet further rounds in the conflict! A Buddhist approach must seek to pull up suffering by the roots. Ultimately, this means overthrowing our dis-

torted, egocentric views of the world and each other. In the process, however, we must look deeply into the historical, political, and economic roots of suffering, as well as into our own prejudices and covert psychological agendas, so that our action in specific cases will be most effective.

Varied projects aimed at this goal, designed for and by all different age combinations, would thus require some hefty gulps from the well of knowledge. Whether we take on the disappearing rainforest or homelessness in our own town, only the steady use of social and scientific disciplines would enable us to carry out effectively our most precious human functions of compassion, awareness, and claiming the whole world as our home.

Finally, *dana* should find expression in the ideal of *leaving no one out*. Here is another example of blending *dana* with *prajna*. Obviously, we must be honest with ourselves, and careful about including people as temple residents, or even in the *sangha*, who have needs or characteristics that are beyond our current capacity to serve or integrate. Nevertheless, we cannot realize our potential unless we are patiently determined to expand that very capacity. This should always remain our "growing edge." What is the point of building a *sangha* of enormous resilience and insight if we just use that power to make ourselves comfortable? We must prepare ourselves to embrace people who will present new challenges, and perhaps even make us ill at ease at first, without putting the whole *sangha* or anyone in it in serious jeopardy. These people may include our aging parents, infirm or dying people, emotionally troubled people, ex-prisoners, refugees, or families who need support with autistic or disabled children. Further, we should never give up on the dream of becoming a spiritual community that crosses all lines of race, nationality, or economic class.

Towards this end, the *sangha* should not impose any financial requirement for membership. By the same token, however, the monks would put their trust in the whole *sangha*, including their own economic efforts, for sufficient support to carry on their work. Taking up responsibility to maintain the temple and its staff in some way would distinguish a *sangha* member from a consumer of an occasional service.

Sila

Sila is a matter of placing all teaching, no matter what the content, within the context of a *benevolent relationship*. This means that the relationship's effect upon the learner is kept in mind just as much as the content involved or the activity at hand. Relationships cannot be equally intimate, but respect, the seed of intimacy, should be planted as a matter of practice. Relationships based on *sila* must at the very least uphold the lay Buddhist precepts: not to do harm, not to take what is not given, not to misuse sexuality, not to lie or misuse speech, and not to misuse intoxicants. We can further express our personal practice of *sila* by grateful, receptive, and attentive listening, which begets trust. Finally, we can build a fearless relationship based on permission to tell each other the truth, which, uncomfortable though it may often be, is awakening's staunch ally. For honesty to thrive between teacher and learner (or parent and child), the teacher must respect his or her own needs, yet aim to resolve conflicts mutually. Developing this skill takes so much practice that it is hard to believe anyone gets it right all the time.

When a child, at whatever age, learns basic reading, writing, and mathematics in the bosom of close personal relationships, these skills are more likely to become a natural extension of that child's desire to connect with others and explore a wider world. Such relationships are nurtured by shared activity, such as building a shed, tending a garden, producing a play, or taking a trip. Once teaching by doing and relating becomes common practice among adults, we will have activated a culture which invites without compelling the learner's effort (*virya*). As we shall see, it then becomes the teacher's challenge to patiently rely upon this culture's action over time.

At the level of social participation, the practice of "material responsibility" expresses our commitment to move in the direction of harmlessness towards our own bodies, other humans, and other species on earth. Through individual example and group agreement, routines can be established that save water and electricity, recycle useful materials and wastes, and reduce consumption. Temple residents can share vehicles and appliances. Healthy, responsible consumption, so difficult within our usual, isolated families, can become a matter of course within co-

operative living. The larger *sangha*, hand in hand, could then invent ways to carry the temple's example into their own lives.

Investigative projects could check into the composition and origins of the foods we eat or the cleaning agents we use, and the conditions under which they were produced. Study teams could come up with ecologically sound ways to insulate our buildings or repel insects. In the process of looking deeply into what we buy and use, what we put inside ourselves, and what we throw away, our study of science and other disciplines is placed within a personal and urgent context. Nonetheless, I cannot emphasize forcefully enough that nothing wrecks the spirit of harmlessness like a dogmatic or humorless attitude that causes people to look over their shoulders every time they gobble junk food or come out of a long shower.

Kshanti

Kshanti, at the level of educational relationships, entails a respect for individual *privacy* regarding the content and timing of what each person learns. Generally speaking, it is my responsibility to hoe my own garden, aware of the influence this has on you as well as on me, and to nurture a mutually responsive relationship with you. My need to control your unique journey through life is the compost used to fuel my practice of patience. What am I afraid of? What is making me uncomfortable? How can I best take care of myself in the long run? Patience grows by observing the fears motivating our rush to comfort and apparent safety through the control of others, and by developing inner resources for tending to those fears. Therefore, non-interference, if it is to be grounded in patience, cannot be rooted in other fears: clinging to some righteous identity as a "defender of children," the fear of a child's anger or resentment, or of what fellow practitioners might think if one shouts out in frustration. Rather, it entails having the inner freedom to see clearly, even intuitively, how each particular situation needs to be handled, and when a fear does indeed call for a straightforward chat.

At the level of social participation, patience means organizing learning activities along *non-coercive* lines. We cannot practice patience or respect privacy in our educational relationships with others if we believe that cultural vitality and economic security depend upon forcing everyone to learn the same things. Therefore, we must abandon this idea, and instead meet these goals by allowing the evolution of complementary talents and interests within a cooperative community. Provided there are many adults setting varied examples of abilities and pursuits, any fixed list of outcomes is superfluous: Everyone knows that the outcome of being young is to become, in one's own way, an adult, at least as able, if not more so, than the ones in sight. Similarly, provided there are varied relationships with those adults based on shared activity and mutual responsiveness, imposed activity or evaluation requirements are likewise redundant. Adults can see what kids can and cannot do in the context of their participation in the life of the community, and kids can demonstrate and converse about what they are up to. Any formal tests of precise skills or knowledge, as well as any holistic rites of passage, should emerge from the shared goals of teachers and students. Whether eagerly or apprehensively, only by submitting voluntarily to a challenge can a student manifest maturity. Since it is precisely this wisdom that is the indispensable context for all other learning, there is no virtue for the teacher like patience.

When I taught at Clonlara School, students and staff posted activities such as meetings, long-term projects, events, or trips on a common bulletin board. People joining an activity came to common agreement about the commitment necessary. Students were free to fill their days with as much or as little organized activity as they liked. Similar schools construct spaces with special equipment such as playrooms, workshops, and labs for free and even unsupervised use, contingent upon completion of training and adherence to commonly accepted rules. Such systems work well enough within communities composed mostly of kids with just a few staff. It is my guess they would work even better amidst a temple culture of similar adult activities that both parallel and combine with those chosen by young people.

In the absence of control, naturally adults will sometimes worry that young people are not developing their own capacities fully, even though the adults are setting an example through their own activity without sacrificing relationships with youth. Yet example and respectful relationships are, in the long

run, the most powerful means for inducing wholehearted participation in the culture. They leave room for the young person to develop the inner power to take initiative and make commitments. If young people are to learn truly and freely to say "yes" they must be able to try "no" on for size. This process can be stressful for adults excited about the present or scared about the future. Yet the big fish of personal choice and co-operation, once caught, requires no energy to haul in, and our expectations are usually exceeded. To catch this big fish, you need a bigger net than the tiny net of coercion, which can only catch the small fish of compliance.

Virya

Virya, applied to educational relationships, means using friendship to turn strenuous effort into *fun*. It means using teamwork, mutual encouragement, and humor to energize and enliven our work, even fudging the line between work and play. If we get to hang out with folks we like who love us back, it is easier to give up comfort, sleep, and so forth, when there is a job that needs doing. Of course, in the midst of solitary work, like scrubbing out my son's soiled diapers, I need to rely on my personal *virya* practice: just do it. Yet even such work is lighter knowing that what I do really matters to others I care about, even if my one-year-old cannot say "thank you." Perhaps not all work can be fun, but much of it can be if our relationships are consciously aligned towards making it so. When we sing, pour each other tea, or exchange massages, even putting out a huge mailing or weeding the garden can become something of a party. Conversely, seemingly unproductive play sows seeds for other efforts, building friendship, expanding perspective, and releasing wellsprings of creativity that cycle back into work activities. Give me a few rounds of pinochle and I am ready for anything! The fun god even visits me in the midst of silent Zen retreats, events as somber and grueling as they come. Group chanting, running in circles around the meditation hall, and cutting carrots all get infused with the kindhearted gusto of my fellow sitters: focused yet carefree, speechless yet palpable.

At the level of larger social participation, *virya* involves addressing ourselves collectively to the matter of economic and physical security, in a way that protects the earth and strengthens all human beings. The Buddhist term for this is *right livelihood*. For most of us, it is livelihood that commands the greater part of our life effort. Therefore, unless economic life is thoroughly entwined in the web of paramita practice, our education will be toothless, with no good response to the question, "how will you make a living?" In order to confront our economic fears head on in a way that brings us together, with the strong lending their strength to the weak, the offer of an educational alternative must be coupled with the offer of an economic alternative. Within the model proposed here, this would have several components.

- The temple itself would be an economic enterprise in which young people and adult members learn the art of self-support through participation. Meditation courses or other services could generate fees; campaigns could generate donations; and money could be saved through shared housework, parenting, shopping, and appliances. Staff would be earning a living there, more or less.
- Staff and other members could initiate democratic, co-operative businesses in order to generate income for the temple as well as business experience for young people.
- *Sangha* members could launch businesses in common based on shared values in order to provide income for themselves as well as business experience and income for others, including young people. Such enterprises might support the temple through donations or funds given in exchange for use of temple resources.
- Drawing upon previous business experiences, young people could initiate and manage businesses for purposes of their own choosing.
- Young people could develop a portfolio of concrete achievements in order to demonstrate their eligibility for conventional college entrance.
- Eventually, the *sangha* could set up its own system to replace conventional undergraduate higher education. Graduates could in this case develop a portfolio to aid in securing employment or entrance to further training in specific fields.
- Temple life would foster mastery of skills, arising from personal interest and community needs, which are relevant to either earning

money or supporting a household, such as child care, cleaning, cooking, building, repairs, gardening, writing, computer use, weaving, purchasing, and publicity.
- The temple would seek out opportunities for young people to develop economically useful skills and experience in the larger society, through internships, apprenticeships, jobs, volunteer work, and travel.
- The *sangha* would invent ways to pool resources, share possessions, and help one another in times of need.
- Temple life, and the *sangha* support network surrounding it, would give young people and adults time to reflect, meditate, dream, read, walk with nature, converse, enjoy solitude, and otherwise invite insight into their callings in life.

Dhyana

Dhyana, at the level of our relationships, is expressed by creating opportunities for *creative absorption* in activities that open a window onto the reality underlying the illusion of a separate ego, and to equip us to inhabit that reality. *Dhyana* walks upon two legs: meditation, a one-pointed concentration usually focused on either the breath or some word or phrase harmonized with the breath; and mindfulness, the full awareness of what one is doing, saying, thinking, and feeling in each moment. Some individuals pursue meditation best in solitude, and it is certainly useful to have the ability to do so. Yet, an important aspect of *sangha* is to invite people to meditate together, thus encouraging commitment to a more regular and extensive routine than one might undertake on one's own. Most practitioners will also attest to the added energy and discipline that arises when practicing formally with others.

Similarly, although mindfulness is essentially a one-person job, we can carry it into partnership pursuits such as conversation, chess or tennis, and even into larger (and noisier) group activities such as meetings, music, or cleaning out the basement. Irrespective of content, it is this liberating quality of calm focus with embracing awareness that has an impact on one's overall character. This common quality of extension and deepening, when multiplied by several individuals on diverse paths, in turn influences the aliveness, richness, and maturity of the group. When we share this value, we can agree upon ways to support each other without invading privacy. For example, during meetings, classes, meals, or manual work, it was a common practice at my Zen temple in Michigan to ring a "mindfulness bell" at random intervals. As Thich Nhat Hanh says, "This wonderful sound brings me back to my true home" (1992, 1).

At the level of social participation, *dhyana* practiced within a broad spectrum of creative pursuits flowers into the *cultural contributions* of community members. These can be obvious: a temple magazine, an art display, a musical drama, a demonstration of magnetism, or a video about the people who make the toothpaste we use. Or they can be subtle, as in a regular bridge or mah jongg group that doesn't mind onlookers and newcomers. This unfettered panoply of endeavors should be carried on with an eye to how they chip in to a common fund of resources. This should, in theory, create a culture so vibrant that young people growing up in it establish a superb foundation for life without recourse to any separately labeled educational domain. Children learn their native language both because they absolutely need it to participate fully in their culture, and because, once they get even a little of it, they start right in using it to participate as much as they possibly can. If full eventual participation in the culture requires, for example, the ability to dance, speak a foreign language, or understand ecological relationships, it's probable kids will absorb that too and put it to use. I say "probable" because there will always be those who go their own way, thereby making the culture more interesting for everyone.

Unpredictable and untidy though it may seem, learning from culture does not rely upon some magical osmosis! Young people learn by participating alongside adults, assisting them with personal pastimes like making pots or community tasks such as planning meals or proofreading the temple newsletter. They also learn through their own work and play, asking more experienced learners for help as needed. Without neglecting the manual arts, kids would have ample time and opportunity to read, write, calculate, listen, discuss, experiment, perform, and do library research. Students and teachers could organize tutorials, classes, and even lectures followed by a quiz if that seemed like the best way to achieve their ends.

The difference between culture and curriculum is one of context, not necessarily content. First, there is the context of privacy: liberty to create one's own mix of activity according to one's own clock. Second, there is the context of co-operation: coming together for teaching and learning by common agreement only. Third, there is the context of contribution: preparing an argument for a general meeting, managing a business, probing the roots of social injustice, investigating consumer products, growing nutritious food, hosting visitors who do not speak English, or providing the evening's entertainment.

In a culture that sees everyone as a needed contributor, it is highly probable that each person will grow to hold his or her own culturally as well as economically in this world. When the fruits of a young person's effort and absorption are offered up to the community, that young person becomes a culture maker, a new ingredient in the delicious cultural soup. At that time, it is virtually certain that an awesome sense of responsibility will dawn: the herald of wisdom.

Prajna

Prajna requires relationships based on a shared sense of *stewardship* for our immediate community. No abstract notion of responsibility for the planet or human beings will do the trick; one has to get it from stuff like figuring out how the dishes should be washed and who's going to wash them. To cultivate this sense, each person, regardless of age, must have an individually appropriate opportunity to exercise power, authority, and responsibility aimed at making the community a good place to be and grow. The term "ownership" isn't bad, but it points more towards possession and ego than towards the necessary sense of holding responsibility in trust for others, even those yet to be born. The sense of empowerment that comes with being trusted to make choices, judgments, and executive decisions is a key to evoking wisdom in tasks ranging from closing a door properly or answering the phone to writing a budget or articulating a consensus.

At a personal level, respecting mutual stewardship means that adults should make an effort to work out conflicts they have with kids so as to set an example of listening, reflection, and problem solving. If we skip right to using arbitrary power based on age or force of personality most of the time, wisdom has precious little chance to sprout. This is not a taboo demanding that adults pussyfoot around every annoying situation when a simple grouchy bark will suffice. (Actually, it has been my impression that when I have really honored kids co-responsibility for the school, they can hear it even in my bark!) Time-tested practical methods exist for resolving conflicts so as to activate a child's wisdom as well as one's own, both within the Buddhist tradition and in the works of modern writers such as Thomas Gordon (1970).

At the level of social participation, we cultivate *prajna* by bringing all these stewards, of all ages, together in a *democratic process* to make decisions. The election of monks from among the *sangha*, although an important delegation of authority and investment of trust, would neither require nor imply any professional status for them beyond that of a lay religious worker. Nor would election have to be permanent; the *sangha* could set any term of office it chose. Furthermore, staff would be expected to invite members of all ages to take part in the design of specific rules and routines: how meals are served, how the bathroom is cleaned, how the festival is organized, and so on. Ideally, a sort of "power pump" should emerge, in which the *sangha* delegates power to the staff, and the staff returns the compliment. Nonetheless, if a spirit of universal stewardship is to be nurtured, there can be no authority higher than the general *sangha* meeting.

To give both wisdom and trust (*dana*) a good workout, each person should have access to a position where his or her free exercise of wisdom, or failure to exercise it, has a critical impact upon the common welfare. Major powers like approving the budget, setting guidelines for membership, electing staff, or serving as a final court of appeal might best be reserved for general meetings. However, many powers should be delegated to individuals or committees. In particular, a group consisting of residents of all ages should make decisions regarding residential rules and customs, whereas a group consisting of the monks and all young people using the temple as their primary learning center should make decisions relevant to that process. Older people could entrust

Table 1. The Six Paramitas

	Dana	Sila	Kshanti	Virya	Dhyana	Prajna
Personal Practice	Trusting Letting go Giving	Satisfaction Receiving	Inner self-sufficiency	Full participation	Concentration Awareness	Seeing things as they are
Educational Relations	Example	Benevolent relationship	Privacy	Fun	Creative absorption	Stewardship
Social Participation	Action upon suffering	Material responsibility	Non-coercion	Right livelihood	Cultural contribution	Democratic process

some decisions to younger ones completely. This may be particularly appropriate in the case of elaborating rules regarding conflict between young people, or space or equipment used primarily by them.

Democratic process within the context of *prajna* must be more than a battleground for conflict between individual opinions, valuable though such conflict may be in revealing truth. For wisdom to develop, decision making must be an exercise in mutual listening, in loosening one's grip on a cherished viewpoint long enough to see another side of the issue. Most groups that hold these same values, such as the Quakers and various intentional communities, argue for a consensus process, in which unanimous decisions are reached through methodical discussion smoothed by a skillful facilitator (Estes 1995). I have also had many moving and successful experiences with this process, especially with teenagers. On the other hand, I have seen teenagers become quite passive and apathetic in a consensus process, since they figure that anything the adults don't like just won't go through, so what's the point? In this case, it sometimes takes a "one person, one vote" system just to turn on that "power = responsibility" light bulb. I have also been in majority-rule meetings with kids that reflected a genuine effort to reach consensus, or else a relaxed attitude about losing one week, and maybe winning next week after more people learn from experience how lousy last week's decision was.

I have even seen groups move back and forth between one process and the other. The National Coalition of Alternative Community Schools bylaws require only a majority to make decisions, yet at annual membership meetings, the first motion voted on and passed is frequently one to make all other decisions at the meeting by consensus! On the other hand, I remember a meeting in which a dozen or so Clonlara students and I were faced with a thorny admissions decision. It was towards the end of the school year, so this group had made countless decisions together by consensus, as was our custom. Tara and Mark, two students about to graduate, had been at the school longer than I, and their wealth of experience was obvious as they assessed not only the student in question but our school's own capacity to help that student grow. As it turned out, we were seriously divided (some of us even within ourselves), and no compromise was possible in this case; it was yes or no. After an hour or so of some of the most sensitive, illuminating, and inconclusive debate I have ever heard, our consensus was just to put it to a straight vote. In effect, we all agreed to accept the majority view as best reflecting the wisdom of the group!

Whatever process we choose, the crucial question is how to achieve the level of mutual trust and effort to see all sides that I experienced in that meeting. It was not our long practice with democracy alone that brought about that slow evolution. It was also everything we had done together that year: selling Florida oranges over the phone, frigid early April camping in the Grand Canyon, putting on a play written by one of our students, resolving a few scary conflicts, and making private choices about how to spend our time. Just as one paramita cannot be pursued separately from the others, so democracy cannot be fully realized without other supporting practices, such as co-operation in work, noncoercion, shared cultural contributions, healing relationships, and the example of key people like Mark and Tara who set the tone.

In conclusion, I want to affirm what this outline is and what it isn't. First, it is not meant to be a system.

Whether these words serve any purpose at all will depend on whether a bunch of inventive and imperfect individuals will find them helpful in cobbling together an experiment that reflects their particular personalities and skills as well as their ideals. There is nothing in here to immunize us against error, but maybe something to remind us to accept and use it. My favorite expression is: Good judgment comes from experience; experience comes from bad judgment.

Second, it is not meant to be extreme. American society is already pretty extreme. The temple should not be an extreme reaction to it, but rather a balancing influence: less waste, less isolation, less rushing around in cars, less television. Over time, with some healthy tension between people pulling closer to or further from the mainstream, we should seek a wise way of life that feels natural, and invites more and more people in American society to think they could live that way.

Third, it is not meant to be the answer. Within the larger movement to make how, what, and why we learn a matter of choice, instead of a foregone conclusion, I will be content to add one more trustworthy choice. Furthermore, I have no quarrel with other existing and imaginable styles of education that might embody Buddhist teachings. This is simply my attempt to envision a style congenial to American society, to a holistic view of human development, and to my dream of uniting, in community, what has been together so long in my heart.

This is meant to be a preliminary sketch for an artwork to be crafted by many hands. As such, it cannot be proven in theory or in print. I write this in the hope of taking one step closer to bringing this temple to life, so that it can speak transparently for itself.

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The Ethics of Certainty in the Mathematics Classroom

Erick Smith

The status of objectivity and certainty accorded to mathematics has social implications that need to be examined.

> We see the ideology of certainty as a general and fundamental frame of interpretation for an increasing number of issues which transform mathematics into a 'language of power.' This view of mathematics — as a perfect system, as pure, as an infallible tool if well used — contributes to political control. (Borba and Skovsmose 1997, p. 17)

Is it possible to be both ethical and a mathematics teacher? If one teaches mathematics, one teaches, according to popular conceptions, a subject whose truths are timeless and external to the learner. Thus it seems that one would model this learner as engaged in a process of somehow getting those truths into her head. Depending upon the particular learning theory, we can imagine this process as internalization, appropriation, or construction, but in any case the good mathematics teacher facilitates students in accumulating and organizing absolute knowledge. Even the current reform movement, while promoting improved approaches to teaching mathematics, does not substantively challenge the absolutist nature of what is learned. The continuation of the role of mathematics as gatekeeper, status-giver, and power broker is, for the most part, not challenged. Thus even the best of mathematics teachers within this paradigm face an ethical problem. If mathematical knowledge is objective, then, regardless of the means by which it is learned, different individuals will learn different 'amounts.' Ultimately learning is an individual rather than a communal product.

An alternative conception that has a significant ethical dimension is to treat mathematical knowledge as collaborative inquiry which allows for distributed knowledge, for alternative ways of valuing knowledge, and for an interaction between the freedom of individual creativity and the restraints of communality. This allows for a certain fluidity in the

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way that inquiry is undertaken and in the ways that the group views the results of the process. However, this does not completely resolve the issue. Even the most ethical among us, I suspect, is quite certain that two plus two equals four and would feel concerned should her child come home from school and announce that her class had decided that it was five. Thus we need to face the issue of allowing for the mathematical certainty which seems to be intrinsic to our culture without basing this certainty in external authority or seeing it as absolute. What all this seems to suggest is that the relationship between epistemology, ethics, and community must take a central role if a viable alternative is to be found

Epistemology, Ethics, and Community

The word 'community' often is used in educational literature to indicate some set of social relationships desired in the classroom or other educational settings. Such relationships are justified from both cognitive and social perspectives. Cognitive justifications, with their roots in constructivism, sociocultural theory, and other learning theories, are based on the assumption that social interaction of one form or another facilitates learning by the individual. This may occur because it makes learning more appealing, because the individual is prompted to reexamine assumptions, because knowledge can be appropriated from others, or because the learning task can be distributed in some way among participants. Ultimately, the goal is for the individual learner to learn subject-matter[1] knowledge compatible with the goals of teacher or other authority. Social justifications focus on the value of participating in social processes and/or the value of a sense of community in support of the social order (or other social goals). For the most part these two goals are treated independently. The knowledge learned in such a setting is treated as a cognitive achievement and valued as a subject-matter accomplishment. Learning social customs and values is seen as a social achievement, something beneficial to the functioning of society. The relationship of either kind of activity to the other is analogous to a catalyst — it promotes the accomplishment of the other goal without being substantively affected itself.

However, the acceptance of these dichotomous values has implications. One is connected closely to our view of subject-matter knowledge. If we take such knowledge as objective, that is as knowledge of a world external to and independent of any individual or culture, then this separation of the goals of community seems justified. Even though such a view of knowledge has been seriously questioned (Dewey 1938; Glasersfeld 1995), it continues to be the dominate operating epistemology in schools and universities. Overwhelmingly, academic institutions, in their teaching practice, treat knowledge as something to get inside a student's head.

In what sense does maintaining such a view of knowledge and the dichotomous goals of community matter? Are learning communities just one "method" of learning? Or are they an essential part of the human condition, a part of what it means to exist in the human social world? Such questions in turn lead to questions about epistemology. Is epistemology just one more topic in philosophy? Is our own epistemic view just an abstract choice? In an address to the National Conference on Higher Education titled "Community in the Academy," Parker Palmer places this last question front and center:

> My thesis is a very simple one: I do not believe that epistemology is a bloodless abstraction, although it may often be taught that way; instead, epistemology, the way we know, has powerful implications for the way we live. I will argue that every epistemology tends to become an ethic. I will argue that every way of knowing tends to become a way of living. I will argue that the relation that is established between the knower and the known, between the student and the subject tends to become the relation of the living person to the world itself; that every mode of knowing contains its own moral trajectory, its own moral direction and outcome. (1987)

Palmer not only makes epistemology fundamentally a moral topic, he also argues that the objectivist epistemology that dominates the academy not only leads students into untenable moral positions but is "essentially anti-communal" (p. 4) in that it undermines the possibilities for relatedness among individuals, that is the social value of community. Objectivity places knowledge outside the individual as an-

alyzable discrete objects, objects that the individual can, and is encouraged to manipulate towards her own ends. The result, according to Palmer, is "trained schizophrenia," that is, a view of "a world out there somewhere, apart from them" (p. 3). Thus what the individual does, what the individual can accomplish, or what the individual desires has little to do with the relatedness of that individual to community or the world at large, but much to do with how the individual is able to exploit the world towards her own ends.

Palmer has two major points, first that choosing an epistemological orientation is a matter of ethics, and second that choosing 'objectivity' is anticommunal and, in effect, an unethical choice. But how about mathematics? Not only is mathematics the paradigm of objectivity, but for many its beauty and its value are intrinsically related to its supreme distance from worldly affairs, the very antithesis of what Palmer sees as essential to a meaningful epistemology. To accept Palmer's thesis might seem to require that we make a special case for mathematics, as is often done in discussions of epistemology. Knowledge of worldly affairs is a social process with moral and political implications. Knowledge of mathematics is abstract and above the moral fray, making the concerns raised by Palmer irrelevant. Regardless of how valid we think this special treatment of mathematical knowledge might be, accepting this distinction places a different twist on Palmer's thesis and on how we view the connection between mathematical objectivity and ethics.

The Ethics of Mathematical Objectivity

There is a strong tradition in western culture of viewing mathematical knowledge as objective, that is as separate from and independent of the knower. Leaving aside for the moment the question of whether there is a viable alternative, I ask whether the treatment of mathematical knowledge as objective has ethical consequences. Even if we accept Palmer's contention that the objective treatment of knowledge in other fields is unethical, there are arguments why mathematics may be different. As distinct from other areas, mathematical knowledge is not about the perceived world, and thus not subject to discussion about the relationship between the knower and the known that is at the heart of Palmer's argument. Instead, mathematics in Western culture has been viewed as about idealized objects (Platonism), about nothing at all (formalism) or a technical tool (technicism). Thus both the Platonist and the formalist might argue that treating mathematical knowledge as objective does not carry anticommunal risks because mathematical knowledge is not about the relationship between people and their lived in world. Likewise a technicist might argue that treating mathematical knowledge as objective is no different than treating a hammer as an object. Both are tools that one brings to bear for the accomplishment of certain goals. The tool is not an object with ethical value, rather it is only in how it is used that ethics comes in.[2]

Such arguments are, however, naïve. To adopt the position that mathematical knowledge is different from other kinds of knowledge and thus that the arguments made by Palmer may not necessarily apply to mathematics ignores the role that mathematics does play in our culture. Indeed, the widespread belief that mathematics is both objective and different from other kinds of knowledge creates the fundamental ethical issue: the relationship between mathematical knowledge and power.

The More-Math Syndrome

Over the last few years there has been an ever-growing concern about the level of mathematical achievement in our schools, which has been accompanied by a national fixation on the idea that everyone needs to know more mathematics, what I call the "more-math syndrome." This syndrome lies in a widespread cultural belief that the solution to any problematic situation that involves mathematics lies in a mathematical knower capable of providing an explanation or answer for that dilemma. For those of us who use mathematics as a descriptor of our profession (mathematics teacher, mathematics educator, mathematics professor, etc.), this phenomenon is a part of life. Within a social setting where an issue arises that is identified as mathematical, others turn to the "mathematics" person assuming that not only the mathematical solution lies with that individual, but also understanding and resolution of larger issues as well. The mathematical practitioner, in turn,

has been trained to accept this situation through years of reinforcement. Every successful completion of a mathematical course and every indication of an interest in any mathematical topic has been accompanied by choruses proclaiming his[3] intelligence: "You must be sooo smart!" The mathematical knower not only supplies the solution but also removes the necessity for any further discussion. Our culture continually feeds people the message that "real" answers lie in mathematics and that those who can do mathematics know something that others do not, something that provides them with deeper insight and more power in almost any situation. This "mathematics-trumps-all" phenomena is deeply embedded and plays out not only in informal social settings, but implicitly in much of our discussion of teaching and learning. Despite the wealth of knowledge that teachers create, the merest hint that they do not understand something about the mathematics in their classroom can lead to immediate feelings of inadequacy. Thus the more-math syndrome has also become a major component of teacher education. If a teacher faces a classroom dilemma involving the teaching of mathematics, then more teacher knowledge of mathematics is needed. Of course, this is not only true for teachers. The primary justification for the more-math syndrome for all students is that mathematics provides power (or wealth). Thus if women want more power, they need to take more math. If a member of any low SES group wants to improve his economic situation, he needs to take more math. Mathematics not only provides power and prestige, it becomes the justification for the status quo, for the lack of success of the poor and disenfranchised. Providing power to those who have taken and been successful in mathematics will, to a large extent, serve to preserve current power structures. In elementary schools, for example, most teachers are female and, particularly in urban settings, many are persons of color — just those groups who have traditionally been unsuccessful in school mathematics. As the more-math syndrome becomes rooted in our perceptions of what makes a good teacher, academic mathematical accomplishments (e.g., number of mathematics courses taken) becomes a straw dog to determine who will and who will not be valued as a mathematics teacher. However, this very process reinforces the historical processes in mathematics education that have worked to undermine the success of these groups.

Math Trumps All

The more-math syndrome is closely connected to the sense that mathematics provides ultimate and unquestionable solutions. Using mathematics in a solution to a problem or simply demonstrating mathematical knowledge provides immediate authority and serves to silence alternative perspectives. In the knowledge game, math trumps all. Recently while discussing a professional teacher development session that a colleague had conducted with urban elementary teachers, the following situation was described. The fourteen participating teachers, including three males, were of mixed race and ethnicity. Although the teachers were from several elementary schools they had met together previously and seemed to be relatively at ease with one-another. The teachers and facilitators had been discussing the topic of the day, decimals, for some time. They were examining familiar contexts such as sports and nutrition (calories from fat). The facilitators were aware that this was a topic that many teachers had not explored before and also knew that it was a difficult subject for students. One male teacher, I will call him Dan, was jovial and well liked, an avid sportsman and well-schooled in mathematics. As the various contexts were discussed, he would quickly interject answers and explanations for each issue the facilitators mentioned, including a detailed explanation of how the percentages in the won/lost column related to "games behind." The facilitators were aware of the difficulties this created in eliciting the questions and explorations that other teachers might desire. However, they continued, going on to look at representing decimals on a decimal grid and discussing the familiar decimals of .5 and .25, both readily identified as equivalent to ½ and ¼. The facilitators then wrote the decimal, 0.125, on the board and asked people to think about how they might represent it and how they might think about its value. Dan immediately stated that it was equal to 1/8. When the facilitators asked for comments on Dan's conjecture, he interjected: "It's 1/8. Point one two five is half of point two five and 1/8 is half of 1/4, so it has to be 1/8."

Despite efforts by the facilitators to develop discussion of Dan's statements, this effectively ended the discussion of .125. Of course there are other directions this discussion could have gone — supported perhaps by direct intervention by the facilitators towards Dan or perhaps by a strong voice by another teacher who would have persisted in his or her own questions regardless of Dan's claims. However, in terms of what did happen, Dan effectively took control of the session. It did not seem to be a case that other teachers did not recognize their own questions and issues. Rather they accepted that when a correct answer and explanation have been provided, there is nothing more to say.

In our own discussions of this episode, we wondered whether or how this might have happened if the topic had been something other than mathematics. Suppose the topic had been a short story read by all and Dan had interjected an interpretation and perhaps backed it not only with his own views but also with a reference to a respected literary critic. We had a difficult time imagining that in such a setting conversation would have been curtailed as dramatically as in the mathematics session unless Dan had adopted an aggressive nature. If this were the case, we might suspect that the curtailment of discussion was related to personal and social issues (not confronting an aggressive individual). In the actual situation, Dan was well-liked and was not overtly aggressive. However, in displaying this mathematical knowledge, Dan did exert power over the group. There is something about mathematics itself, or more accurately about how mathematics is perceived, that allows the expression of mathematical knowledge itself to carry this hegemonic power.

Power, Epistemology, Ethics, and Community

Regardless of the nature of mathematical knowledge, it is the perception that mathematical knowledge is objective and different that supports both the more-math syndrome and the belief that math-trumps-all. That these phenomena are closely related to power and prestige in our culture ties this epistemological stance to ethics. The treatment of mathematical knowledge as objective has the effect of allocating power and prestige among different people based on the perception of the amount of mathematical knowledge they possess. As a result, treating mathematical knowledge as objective detracts from our sense of relatedness and sense of shared purpose and, based on the criteria set forth by Palmer, is anticommunal. As objective knowledge, knowledge independent of knower or setting, mathematical knowledge becomes something that different people possess in different amounts. The perception, in turn, that the amount of mathematical knowledge one possesses is directly related to his (potential) economic success, power, and prestige not only encourages him to look inward rather than towards others for a sense of place, but also reinforces the stereotype of the individual mathematical knower/learner, that learning and doing mathematics is fundamentally an individual activity. From this perspective, to learn/do mathematics together with others implies a winner/loser situation. Those with less mathematical knowledge gain while those with more, at best, lose the opportunity to gain even more knowledge.

Epistemology and Choice

Of course, if the Platonists or formalists are 'right,' then perhaps these ethical arguments are subsumed. Certainly the very ethical ground we might hope to gain by altering our epistemic stance towards mathematics would be lost if we had to choose an epistemology which we knew to be unjustifiable. Another way this argument might be phrased is to say that the world is not designed to be just. If mathematics happens to be of a nature that provides advantage to some over others, then that is simply how it is and there is nothing that can be done about it. Thus, if we believe that taking an epistemological stand not only involves ethics, but is fundamentally an ethical choice, then we need to challenge the idea that there is an ontologically correct epistemology.

Although the world of epistemology can be carved in multiple ways, it suits our purposes to look at it in terms of the relationship of the mathematical knower to mathematical knowledge. Consider three possibilities which might loosely be called traditional, modern, and postmodern. The following summary is intended to give a flavor of current epistemologies of mathematics as a means of ad-

dressing our central questions about choice and ethics.

Traditional Views

In the traditional view, mathematics is viewed as an objective body of knowledge and learning is essentially viewed as a process of transfer. Thus the amount of mathematics a person knew was measurable and the quality of that knowledge could be evaluated as right or wrong. The major arguments around the foundations of mathematics at the turn of the century were, for the most part, disputes about the sources of the independent rational basis of mathematics with the logicists (Platonists) arguing that mathematical truth had its basis in the natural order (logic or ideal forms), formalists arguing that the basis was within formal linguistic/symbolic structures, and the intuitionists/constructivists arguing that it was within the rationality of the human mind (see Snapper 1979; Hana 1983). More recently, feminist empiricism might fit the traditional description. As Damarin states:

> Feminist empiricism begins with the position that science and its global methods are basically sound, but that some practices, procedures, assumptions, and therefore, findings of scientists are biased against women (1995, p. 244).[4]

As discussed above, the traditional view has historically dominated both philosophy and pedagogy in our culture.

An assumption common to all these traditional variations is that it is possible for individuals to 'get it right.' Any individual can learn the real objective mathematics, through the practice of logic, by following the rules of a formal system, or by correct reasoning. Through such practices, the mathematics that is 'out there' can get into the head of the avid learner. This view is the dominant paradigm of school mathematics, where it is typically assumed that the teacher can, through correct presentation, make mathematical knowledge directly accessible to her students.

Modern Views

A general belief in a universal basis for mathematics accompanied with a claim that individuals do not necessarily have access to this 'pure' mathematics has gained considerable support over the last 50 years. Lakatos, one of the initial proponents argued against the timelessness and absolutism of the body of mathematical knowledge known to professional mathematicians, placing both the creation and acceptance of new mathematical knowledge within historical processes that evolve and change over time. However, Lakatos also suggested a more perfect mathematics unavailable to mere mortals:

> The genuine creative mathematician is just a personification, an incarnation of these laws which can only realize themselves in human action. Their incarnation, however, is rarely perfect. The activity of human mathematicians, as it appears in history, is only a fumbling realization of the wonderful dialectic of mathematical ideas. (1976, p. 146)[5]

Other compatible perspectives include hermeneutics (Brown 1994) and what Damarin (1995) calls "feminist-standpoint epistemology" (p. 246). A common theme of these various positions is that since there is no direct connection between what any individual knows and ontological truth, human knowledge generally has both contextual and political components.

Despite the continuing widespread popularity of the traditional view, the modern view has gained considerable popularity among mathematics educators and can be seen as underlying the national reform movement in mathematics education, including the National Council of Teachers' Curriculum and Evaluation Standards for School Mathematics (NCTM 1989). This document has strong roots in constructivism, a theory of learning which itself says little about the nature of mathematics. However, the major constructivist theorists have strongly suggested a modern view of mathematics.

Constructivist Learning

Constructivists have generally rejected the idea that external knowledge somehow gets inside the head of the learner (Piaget 1970; Glasersfeld 1995). Instead they have focused on how an individual builds up or constructs cognitive structures that are "viable," that is, that allow an individual to function and accomplish goals within the realm of that person's experience. In referring to the "informationally isolated individual" (p. 155), Glasersfeld is adamant that the knowledge of an individual has no direct

connection to an external world. Knowledge is adaptive in that it serves to organize one's experience within the constraints provided by the environment. Thus it might seem that the idea of a disciplinary body of knowledge independent of an individual knower would be excluded from these theories. Certainly to a certain extent this is true, as neither Piaget nor Glasersfeld would likely claim that the knowledge of some specific mathematical topic would be the same for any two individuals. However, both Piaget and Glasersfeld make a distinction between empirical abstraction, reflecting on experience, and reflective abstraction, reflecting on mental operations that act on experience. Skovesmose argues that for Piaget, reflective abstraction was the basis of logico-mathematical thought which leads to knowledge which is "deeper and different from the sources of language and provide the foundational basis of mathematics" (1993, p. 167). It is this movement from knowledge based on objects to knowledge based on actions (operations) on objects that provides the logical foundation of mathematical thought. And although the mathematics-related cognitive structures of individuals may not be identical, they result in knowledge with the property that "no individual subject can question (the truth of) "a host of mathematical results" (Glasersfeld, 1995, p. 160), e.g., mathematical truth supersedes personal and cultural boundaries. Thus even though constructivism provides a radically different approach to learning and even to our generally understanding of what it means to know, the notion of an objective basis for mathematical knowledge is fundamental and unchallenged. This view dominates much of the current reform movement.

Postmodern Views

Forgoing claims of knowledge independent of human creation, see knowledge as embedded in social interaction and language. One strand, dialogical mathematics, is not explicitly political and is mainly concerned with mathematics as it is practiced in the community of professional mathematicians. The second, with origins in feminist philosophy, looks specifically at issues of power and the inclusion and exclusion of various groups from official mathematics.

Dialogical Mathematics

Drawing on the conventionalism and the notion of 'language games' from Wittgenstein, Paul Ernest (1994) argues that mathematics is contained within language, text, and other social processes "whereby mathematical knowledge is created, warranted, and learnt. A fundamental premise is that certainty in mathematics does not arise from independent rational or logical processes, rather from the acceptance of our conjectures and arguments within a certain community. That is, certainty that my arguments are sound comes about from either actually or hypothetically (through private conversation) by presenting them to my community and receiving its actual (or hypothetical) approval. 'Proof' is always proof in conversation with others. Ernest does not deny deductive logic, rather that it is subsumed by dialectic. By focusing on the social, Ernest claims to have overcome many problems of traditional philosophy:

> Taking conversation as epistemologically basic re-grounds mathematical knowledge in socially situated acts of human knowing and communication. It offers a way of overcoming the Cartesian dualism of mind versus body, and knowledge versus the world. Mind and knowledge are viewed as physically embodied, and a part of the same world in which the learning and teaching of mathematics take place. (p. 46)[6]

Critical Epistemology

Critical epistemology draws on a variety of postmodern philosophers including prominently Habermas and Foccault. Not only does critical epistemology place the source of knowledge in the social, it sees forms of knowledge as playing a primary role in the maintenance of power. In criticizing the idea of universal rationality, for example, Walkerdine (1994) argues:

> that modern accounts of childhood progression towards rationality actually produce difference from a norm of a reasoning child as a pathology and that this is a central part of a modern strategy of management in which the compliant and law-abiding governable citizen is to be produced by techniques which do not necessarily resemble direct suppression, but then turn the desired characteristic into the normal and natural. (p. 63)

Dunne and Johnston apply this theory of knowledge specifically to the issue of gender difference in mathematics. For them, what we consider knowledge about gender differences is also a construction with the result of creating the categorical differences we attribute to boys and girls and reproducing rather than challenging gender differences. For example, in describing boys as "competitive, independent, and aggressive," and creating a mathematics where these same attributes are valued, we create the conditions for male success in mathematics (1994, p. 228).

Unlike either the traditional or modernist views, radical feminism places the nature of knowledge in the human, social, and political sphere, allowing us to think of forms of knowledge and criteria for academic success as political constructs associated with power and the social order. This is not a condition that can be remedied — there is no way of creating neutral knowledge. Instead, it encourages one to look at any knowledge claim in terms of on-going relationships of power and control.

Epistemological Choice: Does 2+2=4?

A paradigm of certainty in our culture is that 2+2 = 4. Essentially nobody doubts this statement and thus it might seem to also be the paradigm case for mathematical objectivity (and in fact is often quoted as such). However, there is a difference between the traditional objectivity of mathematics and the certainty one feels about a particular mathematical statement. Thus, in making the case that epistemology is a matter of choice, I examine this statement in light of the three epistemological frameworks discussed above.

If we were to ask a random adult how they know that 2+2=4, we would likely get a demonstration: "Here are two apples and here are two apples and if I put them together, I have four apples." Despite the fact that such a demonstration is quite convincing and probably acceptable to many, traditionalists would certainly not accept this kind of argument. As the sociologist of knowledge, David Bloor says, a 'sophisticated' person might respond that all this "proof does is to produce a truth about four apples rather than establishing a timeless truth about the number 4" (1994, p. 23). After presenting a formal proof based in set theory, Bloor discusses comments from J. L. Mackie: "Mackie argues that, for all its show of rigor, the formal proof depends on exactly the same processes of thought as the naive proof with the apples"; that is, the proof tells us nothing more than something about the properties of two sets that were, in fact, constructed so as to make the outcome inevitable. For Mackie and presumably Bloor, this is not a proof, rather a self-referential statement. On the other hand, there is some significant number of mathematicians in the traditional fold who would find this kind of proof acceptable. Does this mean that one of these groups is making an epistemological error? Might some 'correct' epistemological argument straighten out whichever group is misguided. I think not. Being in the traditional fold involves two assumptions: first, that mathematical knowledge is objective and second, that mathematical knowledge is directly accessible to the individual knower. Being in the modernist fold also involves two assumptions: first that mathematics (at least) has some objective basis and second that humans do not have any direct access to the objective part of mathematics.

These distinctions have implications for the understanding of the formal proof. For the traditionalist, the proof *is* the mathematics. Since the proof is not referring to anything outside itself, the criticism that it is self-referential is unintelligible. Likewise since the proof is a direct picture of the mathematics, the idea that it was constructed so as to make its conclusion inevitable is evidence for the universality of mathematics rather than a criticism of the proof (mathematical truths are always inevitable). On the other hand, for the modernist the proof is a representation of potentially imperfect human reasoning. Sets are human constructions, not direct mathematical representations. The ability to interpret the proof as merely a statement about sets immediately offers the opportunity to question how one could know its universality. One might suspect that from the modernist perspective, any proof would be subject to similar criticisms, yet we do not really doubt that the vast majority of modernists accept that 2+2=4. Glasersfeld claims a conceptual certainty based on conceptual operations on abstract units (1995, p. 174) yet does not claim that his mental operations map onto a universal proof. In general, one would expect

that different modernist traditions would have different forms of convincing proofs.

The point is that the validity of any mathematical argument depends on the epistemology one has chosen, not vice versa. It is after the traditionalist has chosen objective epistemology and direct access that the validity of his chosen epistemology becomes apparent. This is also true for the modernist who is primed to see a connection between a convincing argument and the truth of a statement which she deeply believes to be universally true.

The postmodernist will also feel certain that 2+2=4, at least in a society where the paradigm carries such dominance. However, either of the 'proofs' above might serve equally well. For those located outside the community of professional mathematicians, the apples are more appropriate. When a person claims to demonstrate his certainty that 2+2=4 by showing two groups of two apples, the postmodernist sees this action as a statement of what constitutes a meaningful interpretation of this statement at this particular time and in this particular place. As such, the certainty that 2+2=4 is not in doubt. Since all statements are local statements, the truth of a claim is established when it is given meaning through a culturally accepted action. The postmodernist does not need to dichotomize this into either a statement about apples or universals. For the action of displaying apples also signals that in situations that in this time and place are interpreted as being *like* two groups of two apples, the result will necessarily yield four. What it means for two situations to be alike is fluid and contextual. Two apples plus two oranges is like two apples plus two apples when discussing fruit but not when making an apple pie. Two tablespoons of water and two tablespoons of alcohol are like two apples plus two apples when following a recipe, but not in a chemistry laboratory. In fact, one might see certainty as an essential part of the cultural meaning of 2+2=4 and move a step further. 2+2=4 *is* a universal claim in terms of the meaning ascribed to the statement in our culture. Thus when talking about apple pie, 2 oranges and 2 apples does not constitute a case of 2+2. In the kitchen, 2 tablespoons of water and two tablespoons of alcohol constitute a case of 2+2 in that a measuring container could first be filled to the two level with water, then to the four level with added alcohol with perfectly acceptable results. In the chemistry lab, a precise experiment calling for 2 tablespoons of water and 2 tablespoons of alcohol is not describing a case of 2+2, because following the previous procedure would not provide the accuracy necessary for this context. Certainty arises not out of convictions of external universal truths, but out of convictions of possibilities of compatible interpretation of culturally situated situations.

Classroom Implications and the Ethical Teacher

Epistemology, then, is a matter of choice, a matter of how we choose to understand and create our experiential world and interpret the mathematical experiences associated with it. This also implies that choosing an epistemology with postmodern underpinnings facilitates the ethical teaching of mathematics. Yet intellectual arguments and the everyday practices of schools do not always make the fit we hope they will make. In addition to 2=2=4, there is much in mathematics that most adults feel quite certain about. To advocate that it is okay for an inquiry-based community of math learners to reach a non-standard mathematics conclusion is not acceptable in the real world of schools, pressures, and politics. To serve our children, we need to both support their communal efforts of inquiry and provide them with a basis for understanding the taken-as-shared mathematical knowledge of our larger society. The conflict this can create for a teacher was illustrated poignantly by Ball and Wilson (1996). Near the end of the year in a third grade class taught by Ball, the children were discussing ways to compare fractions. One students conjecture that the bigger the numerator, the bigger the fraction led to a comparison of 4/4 to 5/5 as a case study. This discussion went on over several days during which time several alternative conjectures were made. Eventually, the discussion settled on two competing conjectures, one that the two fractions were the same (because a cookie cut into four pieces is the same size as a cookie cut into five pieces), and one that 5/5 is greater than 4/4 because there are more pieces. As Sheena, a promoter of the second conjecture stated: "With 5/5 there is enough to pass out one piece to each of your five friends, but with 4/4 one friend will not get any

cookie" (p. 169). It is easy to smile at such a conjecture, but in fact it is a legitimate and sophisticated interpretation of what it means to compare. As in the examples of 2+2 above, it also points out how contextual interpretations of mathematical statements are. However, Sheena's perspective is not that which is sanctioned as official knowledge in mathematics. This situation raised several conflicts for Ball. On the one hand, Sheena, an African-American female, was in a classroom where her voice was heard and valued. The importance of this was evidenced in the strength of the debate among students and in Sheena's determination to stick to her point of view even after hearing her teacher (Ball) express a different interpretation. On the other hand, Ball mused on a point raised by Lisa Delpit that "teachers must make sure minority children and poor students acquire the conventional knowledge that can give them access to power and opportunity" (p. 184). For Ball the ethical choice focused on balancing the value of having females and students of color actively engaged in debating mathematical ideas couched in her realization that in the educational system as a whole (and particularly in the girls' classroom for the coming year), possessing conventional mathematical knowledge is valued above confidence, inquiry, and communication.

A second example from my own classroom involved preservice elementary students. At one point in the course, I proposed the "Horse Problem" from Marilyn Burns:

> A man bought a horse for $50.
> He sold it for $60.
> Then he bought the horse for $70.
> He sold it again for $80.
>
> What is the financial outcome of these transactions? (1987, p. 130)

Students were asked to work on the problem for a few minutes, decide on an answer and then form groups with other students who had come up with the same answer. After about ten minutes, there were three groups in the class. Somewhat more than half the class had decided on $20.00 and were in one group, three students had chosen $0 and the balance of the class had agreed upon $10.00. Each group was asked to have one or two people present arguments for their position. Students were told that they were free to change groups anytime they wanted. The first group to present were those who had chosen $10.00. Two students presented their case. Both could be summarized as:

> He bought for $50 and sold for $60, making $10.
> But when he bought it back for $70, he lost $10.
> Then he sold it for $80 and made another $10.
> Thus the result was $10.

After these initial arguments by the first group, all members of the $0 and a few from the $20 group changed to the $10 group. Those from the $0 group did not want to present their case, stating only that they had made a mistake. The arguments from the $20 group were of the form:

> First he bought and sold the horse and made $10.
> Then he bought and sold the horse again and made another $10.
> The result was a profit of $20.

After initially hearing this argument, a few students from the $10 group moved to the $20 group, but then as the groups continued to make their arguments back and forth, changes became infrequent. At one point, the students decided to act out the situation with play money. They tried it several times, starting with different amounts. Although this resulted in some students moving to the $20 group, several others concluded that the answer depended on how much the man started with. As the end of class was near, the focus of the groups moved from the exchange between the students to the instructor. The students wanted to be told the 'right' answer before the end of class. I told them that I did not want to do that, because I did want them to think it through for themselves.

Although this problem is not based on a "standard mathematical fact" as in the Ball and Wilson example, there is a standard interpretation which would be accepted by nearly all professional mathematicians, namely $20. In many ways I felt similar to Ball. I did not want to intervene in the solution process, as this problem was, as I had hoped, promoting active inquiry, sharing, conjecturing and some sense of community among those who shared the same interpretation. I felt that this was an important experience for these prospective elementary teachers. On the other hand, as prospective elementary teachers, I

also thought that it was important for them to recognize as acceptable the reasoning behind the standard answer. Over several weeks, we spent some time in each class discussing this problem. In order to hopefully promote a broader understanding, I proposed various modifications of the problem, including:

> 1) Suppose the order of the transactions were changed so that the man initially bought the horse for $50, sold it for $80, bought it back for $70, and then sold it for $60? or: Bought for $70, sold for $80, then bought for $50 and sold for $60?
>
> 2) Suppose the man bought the horse for $50, sold it for $60, then bought a different horse for $70 and sold it for $80? or: Bought a horse for $50, sold it for $60, then bought a chair for $70 and sold it for $80?

In the fourth class period, I asked students about the new problems. As might be expected, those students who were inclined to see 20 as the answer to the original problem also tended to see these new problems as having an answer of 20. Those students who had chosen either 10 or 'more than one answer' tended to see these new problems as different problems. I began a class discussion, focusing my questions on what these students saw in the new problems that made them 'different.'. About five minutes into this discussion, one of the more outspoken students in the class asked in a plainly annoyed voice:[7] "Why do you keep bringing up this problem? We've already spent too much time on it." I mentioned my concern that there were a variety of answers with little shared understanding among the two groups. This student responded, perhaps even more annoyed: "You have already convinced us that this problem can have more than one answer. Why keep beating our heads against the wall?" Sensing some sympathy for this student's view within the class, I replied, with a great deal of inner turmoil, that I actually did not believe that there was more than one answer and that the only acceptable answer should be $20. The student then replied, perhaps more stridently: "But that's only what you believe, most of us believe differently. Why should we accept what you believe!"8 Sensing a deteriorating situation, I attempted to recover by offering my explanation and even recruiting a student with a background in accounting to verify that $20 would be correct from an accountant's perspective. But the case was lost; my arguments, as well as the accountant's, were now on a plane with everyone else's. They were simply arguments expressing a point of view. Although a bit surprised, I was also happy to see this intensity come into the discussion. I asked the class whether they agreed with this student and most did. At this point I could see no way to continue the discussion without forcing it.

Like many teachers, in retrospect I feel like I would have done things differently. In particular, I would have been less concerned about the diversity of answers and I would have been more pleased to see female students who had not previously had many positive experiences in mathematics class taking such an active role, and I would have been more interested in promoting interaction among students with differing perspectives than in trying to promote students to ultimately share my own perspective. However, even with these changes it is not at all clear that a completely satisfactory outcome would occur. Like Ball, I feel like there is a certain ethical messiness in these situations, which is endemic to the practice of teaching.

Ethical Mathematics Teaching And the Ethics of Certainty

To arrive at the conclusion that epistemology in mathematics is not only a matter of choice, but essentially an ethical choice is a radical step and would certainly be contested by many. In this paper, the arguments for this position are brief and incomplete. Thus recognizing that much more discussion in needed, we can still turn to the ethical questions raised by Palmer. What is an ethical epistemology in mathematics? As a teacher or leader of a learning community, this question could be phrased as how do I encourage an ethical treatment of mathematical knowledge within this community?

There is considerable evidence for the claim made by Borba and Skovsmose at the beginning of this paper, that treating mathematical certainty as objective truth is an ideology that supports the status quo in the distribution of power and access. The power associated with mathematical knowledge serves to maintain, if not increase, the inequitable treatment of

students by amplifying the effects of mathematical achievement. In addition, Palmer emphasizes that objective epistemology places knowledge outside the observer, creating a competitive environment for learning and undermining the sense of relatedness fundamental to a community.

Thus to believe that the study of mathematics (as well other subject areas) should serve goals of equity and community, suggests that choosing an epistemology with postmodern underpinnings has a sound ethical basis. However, such an epistemology can and should also contain the basis for mathematical certainty where a conscious effort is made to base this certainty in the contextual interactions between language and actions within a community of learners. Thus for the students debating the Horse Problem, it is essential for them to understand that the certainty they feel about their answer comes out of a particular meaning they are attributing to the problem and the relationship of that meaning to the actions they took in doing their calculations. Regardless of who has come up with the 'standard' answer, it is *equally* important that each group have the opportunity to develop an understanding of the certainty of the other group. It is in this interaction that students have the opportunity to deepen their own mathematical certainty by seeing its boundaries and also to build true community by incorporating an ability to see the truths of others. Because even young students are inculcated with cultural beliefs about mathematical knowledge, it may be challenging to establish the basis for these multiple understandings at the early elementary level. However, making an effort to do so should create students at the college level who are more focused on understanding the various interpretations of the Horse Problem than on having the teacher settle which answer is the correct one. With this interpretation, there is certainly an ethical basis for certainty in the mathematics classroom.

Finally I turn to the question which began this paper, is it possible to be both ethical and a mathematics teacher? It seem clear from the two classroom examples that it is not possible to prescribe ethical mathematics teaching. Even the teacher aware of the epistemological issues around mathematics and committed to establishing a communal basis for mathematical investigation must deal with the particulars of her situated practice. Clearly we can not define how the ethical teacher deals with the next Sheena or the next college student satisfied with the knowledge that there are multiple answers. However, by opening the doors to alternative perspectives and unheard voices (1993), a postmodern epistemological framework can provide a basis for teaching ethically. In addition the local and contextual basis for mathematical certainty offers both a framework for legitimate community inquiry and the valuing of multiple perspectives. In addition, one might speculate that over time, if the atmosphere in mathematics classes was supportive, students could use these multiple perspectives of certainty to feel comfortable when called upon to produce 'conventional knowledge.'

Notes

1. Because I are primarily interested in school settings, I use "subject matter" to indicate an area of focus of a learning community. I do not necessarily imply traditional subject-matter boundaries.

2. For a discussion of the "neutrality" of tools in general and mathematics in particular, see Smith, 1994.

3. If the 'he' was a 'she' the choruses may have had a more somber note. Reactions to women/girls success in mathematics are typically more ambiguous.

4. An example from medicine would be the "Framingham Heart Study," a major long-term study of thousands of heart patients which began in the 1970s. All patients were male. empiricists might accept the "reality" of the results of the study, yet point out that those results mainly benefit men.

5. Lakatos's editors, however, claim that his views had changed somewhat by the time that he died. "He did, however, retain a belief in the central importance of recognizing the partial autonomy of the products of human intellectual endeavor" (p. 146).

6. Although Ernest does not seem to place himself in the postmodern movement, he clearly locates mathematics within human activity. In this way he differs from 'modern' thinkers and seems to be closer to the postmodern mode.

7. This discussion is recreated from memory. Phrases in quotation marks are not direct quotes.

8. The exclamation mark is intentional. This was a statement, not a question.

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The Soulful School

John Miller

Schools that pay attention to the cultivation of their souls become sanctuaries for both students and teachers.

That a school itself has a soul is rarely acknowledged. Schools tend instead to be seen as machines or factories. An example of this approach is the importation of principles and language from the business world's Total Quality Management (TQM) movement, where management is seen as a linear process that includes mathematical models, "measurement controls, process controls, statistical analysis, data collection tools, cybernetic systems, and feedback loops" (Secretan 1996, 17). In keeping with this approach, there is little room for the institution's soul. The result of these activities is what Dalla Costa calls "change fatigue" (1995, 10). Referring to industry, Dalla Costa (1995, 10-11) gives some examples of this phenomenon.

> Employees read the new corporate mission, attend its launch meeting, or see the explanatory video, and still walk away lethargic, uninspired, or even ashen. In subsequent meetings, they will say things like: "We need to wait until the mission is worked out."
>
> Throughout the company individuals use the language of change like real pros, with the facility of the consultant who introduced it into the corporate culture. They have mastered the vocabulary because they know it is important, but though they try, they do not mean a word of it, since no one was there to help them through the mess of implementation. They resort to old practices for the sake of getting things done.
>
> Senior management and employees come to value the opinions of an outside change specialist more than any opinion generated internally. This continuous seeking of a second opinion is perhaps the most telling symptom of change fatigue because it suggests an exhaustion of judgment.

Teachers also suffer from change fatigue. They are constantly asked to respond to curriculum policy changes, new testing and accountability procedures, and social problems such as drugs and teen preg-

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nancy. There is little or no in-service to help with these changes; thus teachers are asked to do more with less. This is one of the "rocks" that Dalla Costa believes contributes to change fatigue, which he calls being "paralyzed by paradox." Dalla Costa states that asking people "to do more with less" or "do better with fewer" leaves people confused and disheartened. As a result of these phony paradoxes, purpose [is] lost, vision obfuscated, and credibility compromised" (p. 13).

Information overload is another "rock" that Dalla Costa discusses. He refers to the problem of information pollution, which he defines as individuals being overwhelmed by so much data that they lose focus. In our society and in schools, information pollution has made it difficult to acquire knowledge and wisdom.

Another problem that Dalla Costa identifies is people's belief that they are experts, when they are merely informed. This, then, prevents deeper forms of learning. Some educators argue that technology, including computers and the Internet, should be the main focus of schooling. Yet these tools, however useful, rarely let us see into the deeper nature of things.

The rocks that Costa refers to, as well as the problem of chronic fatigue, are usually part of organizations that are *mechanistic* in nature (Secretan 1995). Again, many schools fall into this category. The mechanistic organization is characterized by "performance measures, strategic planning models, organizational charts" (Secretan 1995, 33). In schools, we have outcomes, rubrics, and performance indicators. In the mechanistic organization or school there is little opportunity for "innovation, creativity, fun or adventure" and if they are used they tend to be labeled "touchy-feely thinking." Secretan asserts that the result is an organization that is heavily weighted to the masculine and, thus, leads to the inevitable repression of feminine energy. The successful mechanistic school is one where students score high on standardized tests but have little interest in how the school is helping to develop whole human beings. Teachers usually suffer from change fatigue in the mechanistic school, while students tend to find the school a cold and non-invitational place.

The second type of organization described by Secretan is the *chaotic* organization. This is based on the notion of Chaos Theory, which suggests that underlying disorder is order and structure. For example, smoke rising from a chimney looks as though it is spiraling chaotically, yet each movement can be explained through some mathematical formula that can also explain other activity such as the swirling of sand grains, the collision of subatomic particles in an electrical resistor, and also the behavior of people in organizations (Secretan 1995, 34). The chaotic organization is characterized by "high energy, enthusiasm, innovation, risk taking, survival, growth, focused strategy, commitment to the customer, hands-on practices, lack of complexity (Secretan 1995, 35). Sometimes the chaotic organization is a hybrid of the mechanistic organization and the chaotic. Within it there still may be goal-dominated and linear behavior that is linked to the spontaneity of the chaotic organization. Secretan suggests that power and control are the defining characteristics of the mechanical organization, while fun and spontaneity characterize chaotic organizations. Secretan gives the example of Microsoft as a chaotic organization.

A chaotic school would be characterized by lots of innovation, with teachers and students enjoying what they are doing. Spontaneity and fun would also be hallmarks of the chaotic school. However, there is an underlying order that insures that learning and growth are occurring.

Secretan defines the soulful organization, calling it the sanctuary. For Secretan the sanctuary is "not a collection of parts but an integrated system of souls — not so much a place but a state of mind in which they may flourish" (1995, 38). In the sanctuary, people's feelings are acknowledged, as well as their thoughts. Human solutions are not diminished by technological solutions. The soulful school, then, feels like the sanctuary. Both teachers and students look forward to being at school, as they feel that their souls are nourished by the environment they find there. This environment is one of respect, caring, and even reverence. People in the soulful school feel validated as human beings and can speak authentically from their hearts. Love, rather than fear, predominates. When people speak, they feel that they are heard, often at a heart-centered level. Most of all,

there is a deep sense of community. In the sanctuary of the soulful school, people don't just communicate or exchange ideas, they experience a communion of soul touching soul.

Like the chaotic organization, the sanctuary includes spontaneity and fun. Because it nurtures creativity, students and teachers feel comfortable taking risks in their learning, which is at the heart of the soulful school. In contrast to the mechanical school and its focus on testing and grades (often at the expense of learning [Cohn 1995]), learning in the soulful school is holistic. It integrates body, mind, emotions, and spirit.

There are no recipes for developing a sanctuary, or a soulful school, but we can begin to create conditions that allow for the development of soul. Here are the things a school staff can do:

Recognize the importance of the nonverbal. Diana Hughes, who is head of the teacher education program of the Rudolf Steiner Center in Toronto, states that holistic education occurs in that invisible space between teacher and student. It could be argued that soulful learning also occurs in that place. What does this mean in practice? When we focus on the nonverbal, or that silent space, we become aware of how we carry ourselves, how we engage others through eye contact, and the tone of our voice. We realize that the quality of our being and presence has as much impact on student development as anything that we say. When we become aware of the nonverbal, a balance can develop between talk and silence. At all levels, education has focused on verbal exchange, on the head. We have forgotten how we can communicate in silence, with the rest of our bodies. A warm smile directed to a child can send a message of support and love.

Pay attention to the aesthetic environment of the school and classroom. We can help to transform schools into sanctuaries by making their physical environments more beautiful. For example, plants can become part of the decor in the halls and in the classrooms, and walls can be painted in soft, warm colors. Artwork, both student and professional, can be placed on the walls. But care must be taken to create a balance between artwork on the walls and the surrounding space. Sometimes school classrooms are so completely covered that we cannot see what is there. Don't overdo it; leave plenty of space around the art that is displayed. The importance of art can be seen in some Waldorf classrooms for younger children, where teachers sometimes use pictures of the Madonna and Child. They feel the warmth of this picture can have a healing effect on children. In this way, we can soften the school environment as much as possible. Some classrooms even have couches where students can sit and read.

Tell stories about the school. Every school has a story or, more accurately, a set of stories, that can be collected and put in a booklet, or told to the school community on special occasions. As stories are shared over time, community members can begin to see the continuity and uniqueness of their school, and the process of collecting stories can provide both written and visual sketches of former teachers and students. In telling stories about the school, recurring themes will emerge that will form the heart of the school's mythology. This mythology represents a shared sense of meaning and values for the school, whether academic, sports, or community-service related, or a combination of all three. Private schools often engage in this practice of telling stories and creating a shared sense of meaning, but there is no reason this cannot happen in a public school that has its own unique history.

Have celebrations and rituals. This suggestion is closely related to the last one because rituals help give people a sense of connection to their communities. The most common ritual in schools is the celebration of graduation, but there is no reason to limit rituals to this one event. For instance, celebrations could be conducted to mark changes in the seasons. These could include playing music, reading poetry, and telling stories. Rituals can also be part of the daily life of the school. In one school discussed later in this chapter, the students of the entire school meet every morning to sing and perhaps listen to an elder from the community. These morning meetings help form a deep sense of community within the school.

Truth and authenticity. Secretan argues that telling the truth is an important aspect of cultivating soul in the workplace. In an atmosphere where people are not telling the truth, integrity and community break down. As much as possible, leaders should attempt to speak and live according to what they see as the

truth. We should recognize that although we are imperfect human beings, our integrity and our credibility come from our ability to live authentic lives. For example, in the 1960s a "credibility gap" appeared, especially as related to the Vietnam War, as government officials' truthfulness and credibility began to be questioned. One of the behaviors that helps build authenticity is promise keeping. When we keep our promises, others can learn to depend on our word. We have certain clichés about this process and one of the most frequently cited is that he or she "walks the talk." Sometimes in schools, gaps can develop between what we espouse and what we do. For example, a principal might talk abut the importance of collegial decision making and then make all the important decisions on his or her own. When a gap occurs between what a principal says and does, cynicism develops and trust is almost non-existent. On the other hand, when we work with someone who we feel is trustworthy and authentic, we feel empowered. Energy seems to increase in an atmosphere of trust, while it dissipates in one of nontrust. This energy can empower others to take risks and be creative. A soulful school is a place where people can speak without fear. As David Whyte (1994) has noted,

> Inhabiting the full body, the long body as many North American Native traditions say, with the voice, may be one of the great soul challenges of adult life. If the voice originates and ends its journey in the bodies of the speaker and listener, it is also true that many parts of our bodies are struck deaf or dumb from an early age. We walk through the door into organizations every morning looking like full-grown adults but many parts of us are still playing emotional catch-up. (p. 127)

Whyte suggests that one of the ways we can reclaim our voice is to learn to say no. By saying no, we gradually learn to say yes to what we ultimately value and feel is important to our soul. Of course, the leaders in our schools must be comfortable cultivating an environment where voice can be heard. Accordingly, the principal needs to be aware of his or her voice. Each person needs to ask himself or herself, Where does my voice originate? Does it come from my head, or from a deeper part of me?

Soulful Schools

In this section we will look at some schools that have put into practice some of the principles outlined above.

Fratney School

This school, an inner city school in Milwaukee Wisconsin, was formed in 1988 by a group of parents who wanted a two-way bilingual school, teaching in English and Spanish. Its goal is to enable students to speak and write in both languages by Grade 5. Students begin work in their mother tongue, then gradually include the other language in their studies. Fratney School was founded on the principles of bilingualism, whole language skills, multiculturalism, and gender equity. Learning focuses around major themes, such as Our Roots in the School and Community; The New Native American Experience; The African American Experience; The Hispanic Experience; The Asian American/Pacific American Experience; and We are a Multicultural Nation.

George Wood, who included the Fratney School in his book, *Schools That Work* (1992), suggests that this school is partly successful because of its focus on community and cooperation in the classroom. Teachers emphasize cooperation over competition by involving students in setting classroom rules and by the development in each classroom of a conflict-resolution structure. In this way, interpersonal problems can be "resolved within the spirit of maintaining the classroom community" (p. 23).

The school is run by a team of parent and staff representatives, and the principal. This team makes all major decisions about what happens at Fratney. One parent sums up why she sent her daughter to Fratley:

> When time grew near for [our daughter] to begin her school year, we were concerned. She was on the waiting list for several schools, but not high enough. Then we heard about Fratney. A group of parents, frustrated with even some of the best schools in the system, and some 'young Turk' teachers, some of the most talented and principled educators in the city, were coming together to form a school where decisions would be made onsite. Those involved consciously decided to have an anti-racist, non-sexist curriculum. The children would learn

> that we are all together on this planet and that what we and our teachers do every day affects every person and place. Our responsibility to each other is to care and nurture and provide a successful experience for all our students. (Wood 1992, 25)

Hope Nursery School

The Hope Nursery School opened in Annapolis, Maryland, in 1990. It is founded on the principles of the Japanese educator, Tsunesaburo Makiguchi (Bethel 1989). Makiguchi believed education should foster values in three different areas: "economic value or private gain, moral value or public gain, and aesthetic value relating to the senses" (Bliss 1992, 53). Bliss describes how these values are explored in a unit on trees:

> We examine economic or personal value, such as, How can fallen leaves benefit us?; moral or social value, as how our planting a tiny tree benefits the community; and aesthetic value, as how the beauty of the fall foliage inspires us in aesthetics and ecology. As we walk through the woods, we sometimes gather "treasures," such as leaves or seed travelers, and at other times we gather trash. When our recycling barrel is full, we take a class trip to the recycling center. We also visited a neighbor who sheltered injured birds for the state department of wildlife, watched and fed the birds, and became acquainted with a woman who acts on her values in caring for wildlife. (p. 53)

Although the school is based on Makiguchi's principles, it also incorporates principles from other educators such as Montessori. The school uses a thematic approach to curriculum, where disciplines are integrated around major themes. Often these themes are connected to real life experiences. For example, in studying homes and shelters, students build shelters from sand or snow, and look for animal shelters in the woods. Bliss (1992) notes:

> We practice using real hammers and saws and hand drills for manual competence; measure our shelters and map them together; discuss forms of energy used in our homes; identify forms of shelters used in different environments by primitive people from Townley's 1978 art curriculum entitled "Another Look"; sort puzzle pieces of various architectural styles that require careful discrimination of detail; sing the Afro-American song "Old House"; and discuss personal, social, and aesthetic values, as we create a neighborhood of paper houses. (p. 54)

The Hope School also attempts to provide what might be called a "soulful" physical environment for students' work and play. The room is carpeted and is meant to have the feel of home rather than an institution. For example, there is a couch where both adults and children can sit as stories are read; classical music is played while the children work; and there is often an artist-in-residence, whose works are displayed.

Finally, every attempt is made to link Hope School to student families and the surrounding community. Teachers involve parents in the everyday life of the school and encourage them to reflect on their own approaches to child rearing and learning.

The Environmental Middle School

This is an alternative school which began in 1995, within the framework of the Portland, Oregon, public school system. The school consists of 135 adolescents, seven teachers, and many parents and volunteers; it has five mixed age classes drawn from grades six, seven, and eight. The school is based partly on the thinking of Thomas Moore, whose concepts give inspiration to activities that are designed to nourish students' souls. These include "the morning meeting, preparation of the community meal, contact with nature, and participation in community service" (Williams, Taylor, and Richter 1996, 19).

The daily morning meeting is seen as a ritual that involves the entire school community. One of the teachers, John Richter, plays a guitar and teaches everyone to sing songs that focus on peace and care of the earth. People involved in the school feel that to have students sing together with parents and staff helps to create a deep bond within the school community.

The morning meetings also involve storytelling, usually by elders from the community. On other occasions, teachers present information on topics of interest to the community. For example, one day a teacher made a presentation on bats and used slides to show "bat habitats, their features [and] classifications, what they ate, what they liked, where they lived in Oregon, and which were endangered spe-

cies" (Williams, Taylor, and Richter 1996, 19). The next day, John Richter sang a song he had written about bats. These meetings were followed by an activity where students made bat houses for distribution to people in the community.

Another important feature of the school is community service. Students are encouraged to do a variety of activities in the community. Some of these activities have included planting trees at the local arboretum; distributing brochures about Dutch Elm disease in the school neighborhood; pulling ivy from trees at one of the city creeks; building raised-bed community gardens for the elderly and the handicapped; feeding the hungry at a local homeless shelter; making and distributing birdhouses to the elderly; naturescaping and planting trees for ecological restoration in the city's watersheds (Williams, Taylor, and Richter 1996, 21).

Thomas Moore also claims that shared meals and good conversation are nourishing for the body and the soul. Once a month, one of the classes prepares a meal for the entire school community.

Finally, students participate in ecological projects that are an integral part of the curriculum's core. For example, one term the curriculum was organized around the theme of rivers. The students picked a river in the United States and studied it from historical, geographical, and environmental perspectives. Students also read "historical novels; created art projects; sang songs [about] rivers; performed experiments, and studied ... water properties; learned about water conservation techniques in their own homes; and monitored streams as they participated in stream walks" (Williams, Taylor, and Richter 1996, 22).

Soule School

Yes, there actually is a school explicitly based on the concept of soul. It is an alternative school that exists within the Freeport, Maine, public school system. It's creed was developed by students, teachers, and parents in 1975:

> We believe that children should be encouraged to be self-directing, to make decisions and accept the consequences.
>
> We believe that children need time to follow their interests, to experience success and failure — in other words, to give the child practice in some of the behaviors that make responsible adults.
>
> We believe that children should have the freedom to pursue their personal interests and goals and to develop new ones.
>
> We believe that children should be encouraged to think for themselves and to take responsibility for their actions.
>
> We believe that children should have the total community as their learning environment and should be taken to every possible place of interest.
>
> We believe that children should practice self-government and should come to feel important as part of the school community by [participating] in decisions that affect the school.
>
> We believe that children should be allowed to work and play with children of other ages in a family-like atmosphere.
>
> We believe that children should evaluate their own progress, have regular input into their curriculum, and take some responsibility for the planning and carrying-through of related learning activities.
>
> We believe that children should feel good about themselves, and should meet regularly for the opportunity to discuss their feelings and concerns.
>
> We believe that children should have fun in school.
>
> We believe that children should have personal freedom, but not at the expense of the freedom of others.
>
> We believe that teachers should identify individual needs and make provisions for work at different levels of difficulty and for different styles of learning.
>
> We believe that teachers should take children's ideas into consideration when planning learning activities.
>
> We believe that teachers should provide an environment of mutual trust and understanding — an environment that is warm, loving, relaxed, and non-competitive.
>
> We believe that, where appropriate, teachers should share decision making with parents and students.

> We believe that teachers should recognize that the learning process is usually as important as its content.
>
> We believe that teachers should report students' progress by stating what they have accomplished.
>
> We believe that teachers should be encouraged to expand the basic curriculum by bringing their own interests into the classroom.
>
> We believe that teachers should enjoy their work and share their enthusiasm with the students and each other.
>
> We believe that teachers should be available and unshockable so that children will not have to live with unnecessary guilt for their human behavior.
>
> We believe that teachers should foster a close association with parents based on honest communication.
>
> We believe that teachers should have personal freedom, but not at the expense of the freedom of others.
>
> We believe that parents should play an active role in the education of their children and in the Soule School program.

Recently, a former teacher and student examined this creed in relation to the work of Thomas Moore (1992). Peter Corcoran and Eric Home (1996) state that "Soule School was [a] place that appreciated the existence of soul as a matter of depth, value, relatedness, heart, personal substance, genuineness, attachment, love, and community, as described by Moore" (Corcoran and Home 1996, 25). In its attempt to connect students to surrounding communities, both human and natural, the school also recognized the importance of the world soul. According to Corcoran and Home, a sense of community was developed by bringing students together in regular meetings. Students attended a "Big Meeting" and got together in small groups to discuss important issues. Home describes the "Big Meeting" as a place where students could state their views about anything from "teacher smoking to snowball fights." For Corcoran and Home, an essential element of the school community was expressed and developed through the listening that took place in these meetings — listening by and to the students.

> As teachers, it behooves us to listen as well as to lecture. Departing from abstract discussion at times to move to issues of the students "lived lives" brings depth and power to classroom life. (Corcoran and Home 1996, 26)

At the Soule School, another important part of school life is the connection which is created between students and nature, a force which Moore believes is healing (Moore 1992, 12). The natural environment of Maine provides an excellent setting for this connection.

Teachers in the school also accept the shadow side of the student, which Moore says in an integral part of the soul. This is reflected in one of the belief statements of the school, "We believe that teachers should be available and unshockable so that children will not have to live with unnecessary guilt for their human behavior" (Corcoran and Home 1996, 25).

Peter, who taught at Soule School, felt that his work in the school had a strong impact on his later work. For example, he continued using group meetings to deal with student issues, and he also used ritual, which was part of life at Soule School. He writes, "After inviting students to lead opening activities for class, yogi, tai chi, and meditation became fairly regular opening rituals. Indeed, the importance of ritual has became clear to me in caring for the soul" (Corcoran and Home 1996, 26). Corcoran and Home describe the Soule School as a place where students and teachers wanted to be.

> We never knew a child who didn't want to come to school. Even the most doubting parents were persuaded by this passionate love of school. Children cried at vacations and, at the end of Soule School, were known to cry for days. Teachers, too, loved the place passionately, and almost never did one leave other than to go to graduate school. (Corcoran and Home 1996, 25)

It is apparent that this school created Secretan's sanctuary.

If people who work in schools can bring an awareness of soul into the workplace, I believe that the type of atmosphere described by Corcoran and Home could arise in other schools. Bringing soul into the school will not be done through plans or implementation models, but through the awareness and sensitivity of each staff member. Through this awareness we can bring a new vitality to schools, a vitality

that is so often missing. In the film, *Mr. Holland's Opus*, the new music teacher comments that he knew kids didn't like high school, but as a new teacher he learned that teachers hated school as well. Bringing soul into schools can make them places where both students and teachers want to be.

Final Thoughts

In Waldorf schools, teachers openly acknowledge, and talk about the soul life of the children. These are also good examples of soul schools. The physical environment, the aesthetic surroundings, the curriculum, and the teacher's presence, are all viewed in the context of how they can nurture the inner life of the child. One of the key aspects of a Waldorf education is the continuity in a child's classroom. The same main-lesson teacher works with the same group of students from grades one to eight. This is done so that the teacher can develop a strong connection to the students and the classroom can take on an almost family-like atmosphere. The Waldorf curriculum itself is rich in stories and images that nourish the soul. In one example of how a teacher can consciously work with the soul life of a child, in the evening, the teacher sometimes visualizes the child, and an approach that might help the development of that child's inner life.

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In the Heart of Dixie

The Struggle of a Rural Black Community and its School

Laureen A. Fregeau and Robert D. Leier

Long-established patterns of discrimination in education are difficult to erase except through united community action.

In the heart of Dixie, nestled in a river's bend, are a small rural black community and its school. The struggle for education in this black community dates back to Civil War times, when, in Alabama, it was illegal to educate blacks. At that time the Rivers Bend community consisted of a cotton plantation overlooking the banks of the Alabama River, its white plantation owners controlling the lives of their black slaves. Linked to the outside world only by the river, the landing at the bend for which the present day community is named delineated the limits of the people who lived there. Southern Reconstruction efforts brought the system of sharecropping to the community. As soils became exhausted and hopes for profits diminished, farmers sold off their land little by little, which fueled the growth of the timber industry. As in the case of other Southern Black Belt communities of this region, land ownership once again shifted back to whites, this time to nonresidents.

The beginning of the 20th century brought a major educational change to the community. A private elementary school that originated out of the plantation was established to educate black children for the first time ever. The last 90 years brought a series of attempts to educate the children of the community, some more successful than others. The present K-12 Madison High School staff and the Rivers Bend community continue the struggle to keep local education available to the community. In our previous article, "Pedagogy of Place" in a Southern Black Rural School (Fregeau and Leier 1998), we described how this community's school had launched an effort to incorporate "a pedagogy of place," a grassroots approach to preserve and enhance the connection between community, culture, and the curriculum. In

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this second article we share the compelling history of this community and school. We place it within the framework of the historically racist educational system, still distressingly common in the Deep South.

The Schooling of Blacks in a Historical Framework

Black former slaves, freedmen, and their descendants have struggled for educational opportunity against white racist hegemony and political power structures since the 1860s. Since then, white racist hegemony has determined the existence and directed the lack of development in rural black schools in southern rural communities. During the 1860s and 1870s former slaves vigorously sought education for themselves and their children (Anderson 1981). Blacks petitioned for universal public education in which poor whites of the time had little interest. Public education for blacks in the South became the charge of the Freedmen's Bureau. When the Freedman's Bureau discontinued black schooling for lack of funds in 1866, black communities asked to be taxed at higher rates to allow the schools to reopen. Blacks, who as a people valued education highly, paid the full cost of their children's education. Ex-slave dedication to the value of education is further illustrated by the Sabbath schools, which were organized entirely by black community churches in the 1860s and provided education for the numerous students who could not attend school during the week. Sabbath schools served many blacks since white planters discouraged or forbade their black employees from attending school or sending their children to school, particularly during crop seasons (Anderson 1981).

Black ex-slaves continued to petition for universal public education in the 1870s and 1880s while elite whites campaigned against it, fearing, at least in part, that educated blacks and educated poor whites would no longer conform to the subordinate economic and social roles needed to support traditional planter society. Educated Southern blacks had already proven their ability to "disrupt" the Southern political structure. By the late 1800s whites had come to realize that they could no longer resist universal public education. Private education for whites was expensive. The solution was a system of segregated education systems for blacks and whites, all controlled by whites and financed partly through Northern philanthropy and partly through local taxes (Anderson 1981). Following Samuel Armstrong's and his protégé Booker T. Washington's agenda for the education and socialization of black people in the South (Grant 1981, Spring 1994), whites designed black school curricula to maintain the subordination of blacks in the Southern social structure. The vocational curricula prepared black females for domestic service and black males for agricultural labor. At the same time, school boards controlled by the "white" mentalities of power considered it their first duty to educate white children at the expense of the black children. Whites expected blacks to accept their "place" in society. Blacks, observing the poor condition of their schools and the lack of schools in many black communities, questioned why the taxes they paid were used for the education of white children while black schools received less than half the funds received by whites schools. Black educators who demanded more academic curricula or equitable funding were threatened with dismissal, and their communities with school closure.

According to Prather (1979), "the Negro schools in the Black Belt were irretrievably doomed to inferiority" (p. 252). Black schools not only were relegated to inferior, "vocational" education but also inferior teacher preparation. Black teachers often had only a primary level education; few had any education past secondary. When teacher education reform hit the South, it was segregated, and black teacher preparation usually focused on the same low-skill vocational curricula viewed by whites as a tool for maintaining white supremacy.

Improvements were made in schooling for blacks throughout the early and mid-1900s: Academics became a larger part of the curriculum, and funding gaps lessened. Despite improvements, schooling for blacks continued to be inequitable in funding, physical plant, teacher preparation, and curriculum through the mid-1900s. The 1950s lawsuits by black petitioners succeeded in winning Supreme Court rulings that separate education was unequal (United States Commission on Civil Rights 1968).

Court orders to desegregate met with considerable white resistance in the South. Southern whites openly admitted their perceptions of black intellec-

tual and moral inferiority. They openly promoted white supremacist, black subordinationist economic and social agendas. One form of resistance to integration came in the form of private white "segregation academies." Others included the implementation of a system of academic and behavioral testing for black students who sought entry into formerly all-white schools. Black students could gain entry only with high test scores. White students were not tested. Finally, students continued to be assigned to schools based on traditional race segregation patterns. Blacks requesting admittance to a formerly all-white school located closer to their home were, again, required to undergo testing. White students whose homes were closer to formerly all-black schools were placed in formerly all-white schools, at the request of parents, again, with no testing. These practices were ruled illegal in *Jackson v. School Board of City of Lynchburg, VA*, 1962 (United States Commission on Civil Rights 1968). Testing was also used in the "social adjustment of black youth" in the 1920s and 1930s. Counselors used intelligence tests to justify directing particularly poor black youth to vocational occupations (Thomas 1981).

Clearly, what was acceptable practice for educating black children has not necessarily been acceptable for the education of whites. School Board members saw no conflicting interests in this creed of conduct. They targeted educational funding to schools that were considered successful either through achieving high standardized test scores or illustrating the proper social behaviors by community gatekeepers. It was also a given that the closing of a school in a rural community would be the closing of the community (Prather, 1979).

When school boards were represented by mixed race members, the black community interests continued to be limited by whites and dictated by a community of white valuations, i.e., "the American Creed, the Christian ethic, and even the majority prejudice against their own kind" (Powell 1973, 270). Inequities in school funding for black schools continued to be a perennial issue. Swanson and Griffin (1955) documented this phenomenon from the turn of the 20th century. Black schools consistently received less funding for the operation of their schools than white schools through the mid-1900s. Current student expenditures continue to reflect this historical trend of inequity. Local politics continues to perpetuate historically based inequities.

Rural black communities and schools reflected the solidarity of the Baptists, whose church traditions were founded on the preservation of local autonomy, and the experience of African Americans, who had watched the white graded schools advance at the expense of their own children's education. Despite repeated setbacks, the localism and solidarity generated was in many respects an overly simple response to feelings of powerless and dislocation, yet their vision did hold out the possibility of more equitable schooling in a society headed rapidly toward unyielding racial segregation (Leloudis 1996, xiii).

Understanding the meaningful relationship between community and school provides the educator and policy maker with insights that support a thriving and inspiring educational experience (Kemmis 1990). Though community components may differ regionally, deep structural characteristics are analogous. Schools cannot stand alone without the community for guidance and support (Peshkin 1978).

The Struggle of Rivers Bend and its School

The data from our ethnographic study of the Rivers Bend Community and their K-12 school, Madison High School (MHS), suggest that a common history of race and class struggle, kinship, and a strong desire to preserve their community's culture motivates community and school members to support a belief in public education serving the community.

The People of Rivers Bend

Rivers Bend for the past 120 years has been a historically African American rural community and presently consists of approximately 125 families. It is common for children to be raised by "grans" (grandparents) or extended families while their parents work in locations as far away as Detroit, Chicago, Pittsburgh, and Milwaukee. Locally, the men secure work at the sawmill or Scopes Lumber Company, while women work at the garment factory. All three businesses are located in a nearby town. A few women are beauticians and work out of their homes. Several small trucking, mechanic, and lumber businesses are located in the Rivers Bend community. Lit-

tle agricultural activity occurs except for family garden plots and a few cattle. Only one small for-profit cotton farm continues to operate in the area. Folks supplement their livelihood with hunting and fishing.

Rivers Bend is an unincorporated community; therefore income data is not reported. Other nearby incorporated communities with similar racial and economic means have an estimated per capita income less than $15,000. The average in Alabama was $21,732 in 1997 and the national figure was $26,187. Their telephone, electricity, mail, and emergency services all originate in a nearby county. Household water came from local wells and springs until 1997 when potable water was piped in from a nearby county. Most Rivers Benders own only the land their homes are built upon. Timber companies such as Scopes Lumber own 90% of the land in the Rivers Bend region.

Families living in Rivers Bend originated from slave and later, sharecropper populations. People in this community view themselves as "one big family." And in many senses, most people are related to each other in one way or another as few people enter the community except through marriage. Many people leave the community for economic reasons and then return. There is other evidence of the "community family." For example, although there are seven churches, community members claim that denomination is unimportant. Everyone goes to everyone else's church and ministers travel from church to church. Everyone knows everyone else's business; cliques, disagreements, and disputes arise, but the people are unified when it comes to survival.

The Location

Rivers Bend is a rural community in southwest Alabama. One mostly paved road (the highway) passes the school as it winds its way toward the river. A quarter-mile stretch of pavement leads to one of the community's larger clusters of houses. All other roads in the community are packed dirt and gravel. Rivers Bend is a rural community — not a town. There is no post office; A nearby town in another county serves as Rivers Bend's postal stop. Grover Mound, Fullerton, and Jeffersonville, the nearest towns, are all about 35 to 30 miles away. The only "grocery store" is located in a house almost invisible from the paved road. Patrons can buy a few necessities and snacks, but serious shopping must be done miles away. Clusters of houses representing collected family homesteads are referred to with names such as "The Quarters," "The Woods," or "The Bend". The community's seven tiny churches function as community gathering places; however, MHS serves as the community center since it is the only building large enough to accommodate major community gatherings.

The Rivers Bend community encompasses about 25 square miles and is isolated from the rest of Madison County by the ever-changing Alabama River. There is no bridge connecting Rivers Bend to the remainder of the county; instead, Damian's Ferry, a gas engine-powered cable-guided ferry transports two vehicles at a time between 7 am and 4 pm, except when the river is dangerously high or low. When the river is impassable for four months a year, the county seat, Madisonville, is a 60-mile drive away. Many Rivers Benders avoid the ferry altogether, since several of their cars have been swept down the river during crossing accidents. The ferry is not sturdy enough to safely carry a school bus with students aboard. Students cannot be "legally" transported across the river since no one will accept liability. Until recently, the Alabama River has saved MHS from being considered for school consolidation efforts, which has helped preserve the community. Other political and social issues have also aided in the continuation of the school and its community. These include the unwillingness of many whites — but also some middle class blacks — to "lower their school's standardized test scores" by having poor rural black children from Rivers Bend integrate into "their" schools. Nor do these same parents and community members want their tax dollars spread more thinly with the entry of more "poor, black children with uncaring parents" into their schools. There are also claims that the integration of Rivers Bend children into primarily white middle class schools would cause overcrowding, but MHS teachers and supporters report that the primarily black schools in the rest of the county are more crowded than the nearer primarily white schools.

A Brief History of Education in Rivers Bend

The first attempt to educate the African-American children of Rivers Bend took place at a one-room private elementary school. As an alternative, the African Methodist Episcopal Church School was established in the 1930s. Mrs. Power was the teacher in a three-classroom structure where she would go from class to class teaching different grade levels (up to 6th grade). This school developed into AME Junior High (grades 1-9) where three teachers were employed on emergency certificates. Certification was not required in Alabama until the 1940s. Students had to collect firewood and start fires on cold winter mornings. It was a 3- to 4-mile walk for some of the students. Students were prepared in vocational agricultural skills and domestic skills along with basic reading and math. A local elder remarked, "We were prepared to work on the farms, not run them."

The first public school structure (a frame building) was completed in April 1947. Because of the scarcity of building materials, the structure was built from materials left over from demolished military barracks located over 150 miles away. Volunteers from Rivers Bend went to the base, brought the materials to the construction site, and erected the new Madison Junior High School near the present brick structure. The school consisted of four classrooms for the first nine grades. Traditionally students had been sent to Mobile or other large communities for secondary education. They lived with relatives during the school year and returned to Rivers Bend during the summers and school holidays. After desegregation, Madison County was mandated to hire white teachers from the county to teach at MHS. These teachers would stay a year or so until they could transfer across the river to "whiter" schools. There was a high teacher turnover. Recently, white teachers have been hired from neighboring counties and since they live close to the school and are more familiar with the community, they stay longer.

MHS, viewed as remote and poor by County educators and officials, has developed a reputation among Madison County education personnel as the school one is sent to as punishment for defying the school system in some way (i.e., being black or female and demanding equity). When black schools were closed in the early 1970s due to desegregation and integration, many black educators and school administrators in Madison County (and throughout the South) were illegally demoted or dismissed.

Mr. Willis was one of these administrators. He had filed suit against the county along with other black educators in the same situation. The lawsuit continued on for over ten years before he finally won his case. The settlement included an administrative position equal to the one from which he was removed. The Madison County School Board placed him at MHS in response to the lawsuit. The current principal has also been placed at MHS after she threatened to sue the county for repeatedly passing her over for administrative positions for which she was qualified.

MHS became part of the Alabama state system of public schools in the 1970s. The present brick building was built in the 1971-1972 school year. The largest enrollment of 240 students was in 1980. This was partly due to hurricane Frederic that devastated the Alabama Gulf coast in 1979 and forced people to find refuge and schools in interior counties such as Madison. Parents then brought their children back to Rivers Bend and enrolled them in MHS. Enrollments stayed high until the mid-1980s when schools in Mobile had recovered, were rebuilt, and could again accommodate students sent from Rivers Bend. There was additional attrition to high schools in larger towns in the early 1990s when parents perceived that their children would receive broader opportunities in urban schools.

Madison High School at the Present

MHS had 136 students (K-12) in the 1996-1997 school year, 137 students in 1997-1998. There are a principal, vice-principal/counselor, 12 certified teachers, three teacher's aides, three bus drivers, one custodian, a secretary, and two cafeteria workers. Teachers teach multi-grade classes that are regrouped on a yearly basis. In 1996-1997, the first and second grades and the fifth and sixth grades were combined while in 1997-1998 the grades were consolidated yet again. There are four teachers who teach *all* core high school subjects. Only three of MHS's 12 teachers live in Rivers Bend. For the 1997-1998 school year non-tenured teachers were dismissed from full-time positions and then one was

hired back the next year as an aide to teach the same grades and as many hours as when she was full-time. The school hired its first genuine science teacher for the 1997-1998 school year. The previous teacher, certified in health and physical education, had been unable to teach beyond the early chapters in the textbook.

The physical structure of the school consists of 14 classrooms, a half gym/auditorium, cafeteria, kitchen, principal's office, and a playground and small field. The playground equipment has been condemned and children are not allowed to play on it. Propane is used for heating and cooking. The gym floor has never been water sealed so it accumulates up to an inch of water during heavy rains. Since the school is not accredited, there are no varsity sports teams for either girls or boys. Students score lower than the state average on standardized tests but the same as other black schools in the area. Ninety-nine percent of the students receive free or reduced lunches.

PACERS, a small schools cooperative, has been working with MHS for more than 10 years. PACERS had provided MHS with physical, curricular, and materials improvements. The organization provided in-service training for MHS teachers on innovative methods and applications of pedagogy of place. PACERS programs to date have focused on projects relevant and beneficial to both community and school, including a school-community newspaper, a day-care center, a celebration of community history and culture through music, a page on the small schools Internet site <http: //www.pacers.org>, and drama and book shows. Projects for the 1997-1998 school year included renovation of the school library, implementation of multi-age programs, installation of computer networking, and an innovative reform plan to make MHS a model rural school.

The Attempt to Close Madison High School

White, middle class hegemony and black community events were entwined over a three-month period between May and June 1997. Through the series of events, documented below, a struggle for the survival of MHS and Rivers Bend unfolded. The Madison County, predominantly white school board and white superintendent quietly and quickly moved to close MHS, while Rivers Bend celebrated the retirement of the principal and honored its graduates.

School Board Meeting, Rivers Bend, May 1997

The Madison County School Board meeting held at Madison High School on May 8, 1997, revolved around countywide school uniforms, a new baseball and recreational field at MHS, and approval of a summer enrichment program. The "real" school board meeting took place four hours earlier at the Madisonville courthouse (a 60-mile drive from MHS) where more people from the center of the county could attend.

None of the issues were particularly controversial at the MHS meeting. Many parents and students wanted the uniform policy to be passed but a consensus could not be reached. No one was too upset about it. There was no mention of improving poor test scores, nor was it revealed that MHS would be closed in the near future.

Graduation

On May 29, 1997, MHS held commencement exercises for the graduating senior class. There were over 250 people (standing room only) packed into the half-gym to support the five graduating seniors. There was a special section at the front of the gym for immediate family members. The principal and the coach greeted guests who came from Milwaukee, Chicago, and Detroit to attend the graduation. Graduation is an "extended community" event. Because of the limited economic opportunities at Rivers Bend, many individuals travel outside the community for employment but keep very close ties to their roots. Not only was the number of people present impressive but also the "dressy" apparel individuals wore. It was obvious that high school graduation is *very* important to the community and is greatly supported.

The commencement started out with a Christian prayer and then the English teacher introduced the guests who were seated on the stage. Each guest came to the microphone to congratulate the seniors and offer words of encouragement. A five-year-old with a powerful singing voice was then introduced. She proceeded to belt out a traditional song that brought the audience to their feet to accompany her. The choir then sang several inspirational and reli-

gious selections known to the community. The audience members who knew the songs sang along and added their individual touches. People were quite vocal during the ceremony. They were chatting, getting out of their seats, and greeting old friends with embraces. It was as if numerous ceremonies were taking place simultaneously. This was not troublesome to anyone except for the English teacher who, at times, attempted to "hush down" the audience. People were having such a good time that the roar of laughter and voices returned within minutes after each "hush" warning. One memorable spot of silence was when the school cook received a standing ovation for her 25 years of service to the school. One could here a pin drop as her name was announced and she slowly rose from her seat and walked up to the front of the stage. She was immaculately dressed in a lime-green suit and looked as if she walked out of a fashion magazine page.

One senior was not allowed to participate in the graduation ceremony because of the lack of a few credits. Instead, he was awarded a special certificate for his efforts and the promise that he could make up the credits this summer. The entire audience, especially his classmates, stood up for him when he received the certificate from the principal. The valedictorian speech was given. It was then followed with a few words by the salutatorian. The five graduates then stood and each walked to the stage to receive their diplomas from the principal. There were wild cheers after each name was announced. The seniors then gathered as a group for the last time in front of the stage while people took pictures. They returned to their seats and then the English teacher said parting words. The principal reminded everyone of the special community meeting that would take place immediately after in the cafeteria. The new graduates left the gym and then everyone followed them.

School Closing Meeting

After the graduation, over 70 people from the community crammed into the cafeteria to discuss what action was to be taken to stop the closing of MHS. The principal, Mr. Willis, though retiring in a month, was spearheading this effort to save the school. He felt a sense of responsibility for the school closing because the Superintendent announced the planned closure only two days after Mr. Willis officially submitted his retirement papers. When he realized this, he attempted to withdraw his retirement paperwork, but the board had voted on its acceptance immediately after its submission. The Superintendent made a special visit to Rivers Bend just two days before graduation and informed about 40 concerned parents and community members that MHS was going to be closed the following year. He explained that MSH school was too inefficient and too expensive for the school board to approve further funding. Furthermore, students from Rivers Bend needed a "better quality education, more in line with state mandates." This visit by the Superintendent was only two days after the acceptance of the resignation of the principal by the school board. Mr. Willis reported that until that moment, in fact as recently as a few weeks earlier, the Superintendent and supervisors indicated that MHS would have no difficulty meeting state curricular mandates. Until that moment, there had never been any concern for the "quality of education" at MSH expressed by either the Superintendent or school board. Clearly MHS no longer needed to stay open to fulfill the legal settlement with Mr. Willis.

What most upset the community was the proposal that their children would be bused to other poor black schools, which were a 70-mile bus ride each way over ill-kept roads, bypassing closer, more affluent majority white schools. Parents were concerned for young children who would be spending hours on the bus and for secondary students who would be limited in extracurricular participation at a school so far away. There was concern about the dangerous conditions of the road. At this time community members and supporters promised to write letters to their state representatives and state and local school board members protesting the Superintendent's and school board's proposal. They also looked into legal aspects of the school-closing proposal and prepared to hire a lawyer. They rounded out their efforts by contacting local media to express their concerns and garner area support and by signing a community petition objecting to the closing of the school. The meeting lasted for over an hour and people stayed afterwards talking about strategies they were going to bring to the June 5th school board meeting. Many

people saw the closing of MHS as the beginning of the end of their community.

Overall, the June 5th school board meeting was uneventful. The Superintendent again explained his reasons for recommending the closing of MHS. He stressed that they could no longer fund the school at its current level and that the students were not receiving a proper education because their recent Stanford-9 test scores placed them at the "alert status" with the state of Alabama. The Superintendent did not threaten to close other county schools that were on alert, nor did he mention available state funds targeted to assist schools on alert and schools that were threatened with consolidation. The school board member representing the district where the students were to be bused, stood up and told the audience and other board members not to close MHS, that they have been "dumped on" for years. He motioned to postpone the closing decision until the next board meeting on July 10th so the board could use the time to do more research on the issue. The board passed the motion and the fate of MHS was left up in the air.

The one-month postponement of the vote on the closing of MHS gave school supporters more time to develop strategies to keep their school open. Supporters contacted regional newspapers, local television stations and PBS, the state superintendent of schools, the American Civil Liberties Union, the Southern Poverty Law Center, the Alabama Department of Justice, the Alabama Education Association, Mobile Education Association, Baldwin County Education Association, members and former members of the Mobile County School Board, CARE, several lawyers, a judge, and their state representatives.

Madison School Board Meeting, July 1997

The July Madison County School Board meeting began at 6:30 pm in a county school located 60 miles away from Rivers Bend. There were approximately 100 people in attendance, three-quarters of them from Rivers Bend. A quorum was established, then a copy of the 1982 stipulation in *Anthony T. Lee and NEA v. Madison County Board of Education* was distributed. The ACLU had presented the case to the Board one-hour prior to its meeting. The decision in the Lee and NEA case required that "defendants shall take no action that tends to segregate or otherwise discriminate against students or faculty by or within schools on the basis of race, color, or national origin." Next, a school board member spoke about the opportunity to use multi-age instruction and distance learning. The Superintendent then proposed how a rural education cooperative organization (PACERS) was going to set up a program in distance learning to meet the state curricular deficiencies. The school board member then spoke again to request the need for hiring a competent new principal for MHS. The attorney for the school board asked for a vote to keep the MHS open for another three years and to monitor the progress of the school. All board members voted "aye." People from Rivers Bend then joined them in a chorus of "ayes," followed by clapping and elation that was surely felt at MHS across the Alabama River. Needless to say, everyone was stunned. Here was the outcome that people worked and prayed for since the very first closing notice, and it came true. They won! They were going to keep their school and community. These people were not accustomed to winning. They had been fighting for years for Madison County to address their educational needs. Each year groups of parents from MHS would go to the school board with lists of what they needed to improve their school and would be ignored. During this time other schools in the county were getting new building additions and structural updates.

After the vote, speakers from the audience were invited to speak. Most of the comments dealt with how happy they were with the decision to keep the school open. However, some kept commenting how it would be a shame to close MHS, not realizing that the school would remain open for at least the next three years. There were still some skeptics at this time. One elder suggested that now what they need is to improve the ferry or build a bridge across the Alabama River.

It was apparent that the decision to keep MHS open for the next three years was based more on the threat of a violation of the 1982 court order barring further racial segregation in the school system than goodwill towards Rivers Bend. There was no discussion to close MHS after the attorney brought this item to the attention of the Board. According to the principal at MHS, this court order was not an agenda item until a few hours before the board meeting. The

residents of Rivers Bend and others in attendance had no idea what the verdict would be. It appeared that upon being presented a copy of Lee and NEA vs. Madison County, the Superintendent made an about face in his attitude towards Madison High School and stated that he would do all that he could to help MHS be a "good" school.

Epilogue

The Madison County School Board publicly invited the involvement of PACERS in the "reopening" of MHS. PACERS was asked to help select the new principal and continue with their plans for multi-age programs and the remaking of MHS into a model rural school, but these arrangements were never honored. PACERS was excluded from the selection of the new MHS principal and from any plans for a "revitalized" school. Selected by the Superintendent for her potential to cooperate with his and the board's agenda, the new principal is a long-time friend of her mentor, the Superintendent. Under her "revitalization" plan for MHS, PACERS programs have been essentially eliminated or impeded, but teachers dedicated to these innovative programs kept them going secretly, behind closed doors, after school or on weekends. Throughout the 1997-1998 school year Rivers Bend parents were regularly threatened at PTO meetings with school closure by the new principal. If the school is closed, she threatened, and test scores are low, the students will be sent to the more distant all-black school. If the test scores are good, she cajoled, students will be allowed into the majority white school. She canceled all non-test focused activities "for the good of the students" until they raise their test scores. The MHS corridor and cafeteria were plastered with reminders about "changing one's bad attitude" and "focusing on high Stanford-9 scores." Secondary students are rebelling. Rather than SAT test scores *increasing* for the 1997-1998 school year they actually *declined*, placing the school in Alert II. Secondary students report that this was the result of a rebellion by academically superior MHS students who had been involved in PACERS and other cancelled extracurricular activities and who felt the principal's policy was unfair. Teachers felt stressed and threatened all year, always watching their backs. The new science teacher decided not to return for the 1998-1999 school year. A veteran elementary teacher, one of the first to work with PACERS projects, decided to retire early. Influential community members have spoken with the new principal about her continued opposition and non-cooperation with PACERS and programs to save the school. Community members vow to continue PACERS programs in new "church schools" if necessary. The only questions that remain are whether the community or the Superintendent and school board will win, and where Rivers Bend students will go to school if MHS is closed.

Conclusions

Historical similarities to black communities' struggles to provide education for their children, to gain educational equity, and maintain community existence recur in the experiences of Rivers Bend and MHS. Education in Rivers Bend follows the same patterns as other Southern black communities where schools were originally established in conjunction with both church and private community support (Leloudis 1996), only later to be supported by public funds. The sacrifice to establish and maintain schools in Rivers Bend reflects the traditional value Southern blacks have placed on education as the route to a better life.

Events throughout the history of MHS cannot be separated from the reality of Southern racism. The assignment of black administrators, viewed as "defiant troublemakers" by the white majority Madison County School Board to MHS, the Madison County school viewed as most remote and poor, is consistent with historical patterns throughout the South (Powell 1973).

The attempted closing of Madison High School was not the simple case of school consolidation rationalized by the Madison County School Board and Superintendent. In our view the same white racist political and economic power agenda that has existed for years is also operating in this case. Although the Madison County Superintendent and School Board members contended that the school was to be closed for "the benefit of the children," it is clear that busing K-12 children 70 miles to the only other 100% black school in the county rather than the more affluent, closer, better equipped, and less crowded pre-

dominantly white school, indicates a segregationist and subordinationist agenda. There had never before been any concern for the quality of education at MHS. Unqualified teachers had been allowed to continue to teach high school courses. Even after the reopening of MHS, elementary grades were combined *three to a room* with no aides, and an untenured elementary teacher whose contract was not renewed is paid as an aide while teaching a full load of Stanford-9-related skills. Options suggested by Rivers Benders, such as building a bridge across the river to open up real economic opportunity and expanded educational choices through PACERS programs, have been rejected by the county. Perhaps white hegemony would be thoroughly shaken if a poor black rural school were to become a state model for school reform.

A white segregationist and subordinationist agenda is further demonstrated through the typical Southern pattern of unequal funding for black and white schools which Swanson and Griffin (1955) documented from the beginning of the 20th century through the 1950s. This practice, although illegal after the Civil Rights Act of 1964, continues today in Madison County.

The Madison County Superintendent and School Board have, as Prather (1979) documented elsewhere in the South, targeted educational funding to schools that fulfilled white measures of black success through high standardized test scores or "proper social behaviors" (p. 252). The Madison County School Board and Superintendent appear indifferent to federal court mandates that forbid the admittance of black students to predominantly white schools based on black students' test scores, and attempts to bypass white schools and send black students to more distant predominantly black schools. As with earlier school boards examined by Prather (1979), the Madison County School Board sees no contradiction in the practice of educating black children in ways not necessarily acceptable for the education of whites. Perhaps it is simply following the unwritten creed of many Alabama school districts: Do not comply with civil rights law until forced through court order, and then resist.

Madison High school does not fit all the historical trends predicted by Prather (1979). Rather than being "doomed to failure" (p. 252), MHS has graduated a number of seniors who went on to college studies and successful careers. This resilience in the face of outsiders could be contributed to the common history of struggle, kinship, unity, and a strong desire to preserve their community's culture.

Data suggest that a common history of struggle, kinship, and a strong desire to preserve a community's culture motivate community and school members to believe in the possibilities of community public education. These are a resilient people, despite a history of struggle against inequitable funding, limited materials and curriculum, inadequate physical plant, and limited technology The people of Rivers Bend continue the legacy of their ex-slave ancestors who placed high value on community-supported education for their children. Through this traditional support of education, despite restricted academic opportunities, Rivers Bend students have succeeded quite remarkably in post-secondary education.

We will continue to document Rivers Bend and MSH through the year 2000. We await the final outcome of the struggle between the Rivers Bend community, MHS staff and supporting agencies and the Madison County School Board and Superintendent. It is clear that neither side intends to lose and although white power agendas have historically been dominant, blacks have persisted and prevailed with their own agendas in education.

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Getting to the Root of the Cultural Dimensions of Place

Questions about Gregory Smith's Recommendations

C. A. Bowers

If teachers are to provide students with a genuine experience of place, they need to be fully aware how much the spirit of the Industrial Revolution pervades the classroom — and what alternatives are available.

C. A. BOWERS lives in Eugene, Oregon, where he continues to lecture and write internationally. His most recent book is *The Culture of Denial: Why the Environmental Movement Needs a Strategy for Reforming Universities and Public Schools* (1997).

The importance of Gregory Smith's article, "Rooting Children in Place" (Smith 1998), is that it foregrounds the need to recover the intergenerational relationships and responsibilities found in less consumer dependent communities. In addition, Smith makes the point that public schools, in the main, have made emancipation from local knowledge and the practices of moral reciprocity their primary goal. Instead of encouraging the forms of learning that are essential to non-monetized relationships and activities, schools foster a form of individualism that can compete in the global economy. I made a similar point in *The Culture of Denial* (1997) by arguing that public schools and universities promote the high-status knowledge that drives the cycle of technological innovation, consumerism, and environmental degradation. By ignoring the face-to-face and intergenerational learning that has not been commodified, these institutions created the category of low-status knowledge. The irony is that many of the expressions of low-status knowledge are the basis of community activities that have little or no adverse impact on the environment.

While I found much in Smith's article that I agree with, I nevertheless have several concerns about whether the article addresses the aspects of schooling most in need of radical reform. His examples of exemplary educational experiences relate primarily to the need for a change in the priorities of parents. His proposals for how teachers can foster more of a sense of community, as well as provide for an ecological perspective, an awareness of the importance of recycling, and care for green spaces, are also con-

structive suggestions. Like the voluntary simplicity movement, which is equally laudable for ecological and communal reasons, his list of reforms is derived from the activities already being undertaken by the small number of parents and teachers who share his conceptual and moral orientation. But does his article address the changes that should be made in the areas of the public school and university curricula that perpetuate the thought patterns and lifestyle that would require, if universally adopted, two additional planets to provide for the energy necessary to sustain this lifestyle and to recycle its wastes? There is also the question of whether professors of education could adopt his proposals while still basing their courses on the assumptions that contribute to undermining community and the viability of natural systems.

Smith's long recapitulation of the main themes in Helena Norberg-Hodge's *Ancient Futures* (1991) is meant to give the reader an understanding of the characteristics of community life in a morally and ecologically coherent culture. But it is the observation he makes about the Ladakhis being "susceptible to the blandishments of modernization and consumerism" that has particular relevance to putting his reform proposals in proper perspective. That is, the forms of learning he sees as essential to the recovery of community (e.g., planting a garden, learning to cook, engaging in other activities that involve learning mutual responsibility, etc.) were part of the taken-for-granted patterns experienced by earlier generations of Americans. Like the process of modernization in Ladakh, conversations around the dinner table in American households have largely given way to eating in front of the television and to each individual having their own schedule of activities. Similarly, the family activity of growing and preparing food has given way to the convenience of supermarkets and fast-food outlets, while the craft knowledge necessary for being self-sufficient around the home and in the community has been replaced the practice of hiring outside experts. In effect, Smith's exemplary forms of family and community-based learning have largely been abandoned in favor of monetized relationships and the vision of increased material wealth — which is still perceived as enabling individuals to escape the constraints and physical burdens associated with the local community.

While I agree with Smith's general ideological orientation (namely, that the environmental crisis is directly connected to globalizing the transition from non-commodified to commodified relationships and activities within the family and community), I do not think he gives adequate attention to the more substantive educational reforms that need to be undertaken. Many teachers who encourage the learning experiences advocated by Smith also socialize students to think in the thought patterns that coevolved with the Industrial Revolution, such as viewing science as culturally neutral, change as the expression of progress, language as a conduit though which objective data and ideas can be passed, and technological innovation as the culturally neutral expression of progress. While Smith makes only vague references to the need to reform the deep symbolic constructions perpetuated by public schools and universities that are the basis of the current distinction between high and low-status knowledge, he does not provide any in-depth explanations of how to go about it.

For example, he devotes only a paragraph to explaining how teachers can foster a more critical understanding of the destructive characteristics of an industrially oriented culture. The reason he ignores the deeper and more hidden layers of the problem that must be addressed can be found in his formulaic view of what is involved in fostering critical understanding. As I have argued in recent books, the most fundamental leverage point for effecting the direction of cultural development is in the ability to recognize how the metaphorical nature of the language processes reproduce earlier forms of cultural intelligence. Even the direct experiential "knowledge" of the environment that Smith and David Orr advocate is mediated by how the language of the cultural group frames how human/Nature relationships are to be understood. Every area of the curriculum, from kindergarten through graduate school, involves the use of a culturally constructed metaphorical language that provides the schemata students unconsciously use as the basis for understanding relationships. The influence of a cultural schemata can be seen in what students will be aware of, and what will

be ignored. For example, how many mainstream students, as part of their direct experience in the environment, will view the clouds overhead as the return of the Kachinas? How many students socialized to think in the categories made available by the language-based schemata of the dominant culture will be aware of how the scientific mode of studying natural phenomena reinforces a secular, eco-management way of thinking. While important forms of learning occur in the mentoring relationships that Smith wants schools to encourage, the main body of the curriculum remains based on the root metaphors that are moving us into the digital phase of the Industrial Revolution.

If we address only the reforms needed in teacher education programs (which will be largely subverted by the deep cultural assumptions passed on in courses in other parts of the university), the following would seem to be essential to helping "root children in place." That is, the reforms should provide students with the symbolic systems and embodied forms of learning necessary for participating in less commodified activities and relationships. In addition to understanding how the metaphorical language used in different areas of the curriculum provides, to use Bateson's metaphor, the "map" that illuminates certain aspects of the "territory" of the cultural/Nature relationships (while hiding other aspects), it is also essential that the teacher's professional knowledge include: (1) The different forms of consciousness and relationships associated with print and face-to-face communication — particularly how print-based consciousness has influenced what is regarded as high-status knowledge and, by extension, what is widely perceived as low-status knowledge; (2) The ways in which cultural patterns are handed down from the past, revised, discarded, and new traditions are started. This more complex and culturally grounded understanding of tradition is essential for recognizing the many expressions of the myth of progress, as well as developing a more receptive attitude toward participating in the non-commodified aspects of community life; (3) How technologies mediate both the subjective and cultural dimensions of experience, and how technologies can be assessed in terms of impacting the viability of human and biotic communities. Teachers should also understand the differences between design processes based on the mechanistic and other root metaphors underlying the Industrial Revolution and the principles of ecological design; (4) The characteristics of ecologically centered communities that have kept the commodification of skills, knowledge, and relationships from becoming the dominant feature of daily life. Being able to recognize the many expressions of the commodification process in mainstream culture, as well as the existing networks of non-commodified activities, is also essential knowledge for teachers concerned with rooting children in place. The cycle of turning Nature into a resource for the production of commodities also requires that people be deskilled and that community traditions of mutual support and mentoring be undermined. The cycle of consumerism comes full circle as the toxic wastes returned to the environment undermine the self-regenerating capacities of natural systems. In effect, the unrelenting effort to turn every aspect of individual and community life, as well as the different levels of Nature (from DNA to entire ecosystems) into a marketable product distorts the experience of place by making it both ugly and a technologically mediated experience. If teachers are to do more than provide a romanticized experience of place, they must come to grips with how the spirit of the Industrial Revolution pervades nearly every aspect of the curriculum — from the use of computers to the emphasis on individual emancipation. They must also help students recognize the constructive alternatives — and how they have been worked out by different cultural groups.

As Smith's list of exemplary forms of learning will also be influenced by differences in the episteme and moral system encoded in the language of a cultural group, teachers also need to be grounded in a deep understanding of different cultural ecologies. The patterns of metacommunication in the classroom, the metaphorical basis of thought and moral behavior, the way of understanding social and eco-justice issues, and the way of understanding individual/community and human/Nature relationships, all reflect differences in cultural ways of knowing. The taken-for-granted patterns of the students, which reflect a mixture of their own cultural group patterns with those of the dominant culture, as well

as the taken-for-granted patterns of the teacher and the people who write the books and computer software, are all part of the complex ecology that are also part of the student's experience of place. Too often the schemata of understanding that is learned in this more symbolic-laddened place (the classroom) contributes to the pathologies now eroding the moral reciprocity of community life that Smith wants to recover.

To give only marginal attention to reforming the teacher's mediating role in the cultural ecology of the classroom is to ignore the real source of the problem. Teachers can implement all of Smith's recommendations and still carry out their main role of passing on the language/thought patterns encoded in the curriculum written by people who think they are contributing to the betterment of human-kind by promoting the cultural agenda of modernity. Even though grounded in a non-materialistic symbolic system, the Ladakhis are "susceptible" to being transformed by the appeal of consumerism and a more individualistic lifestyle. As most students are less well grounded in a symbolic world that has real authority in directing their moral decisions, it is too much to expect them to be able to rely only upon the learning experiences advocated by Smith to resist the blandishments of modernization. The pressure of their peer group, as well as the constant exposure to media enhanced visual messages that connect consumerism with a successful identity, is too great to resist. The challenge is to provide them with the symbolic frameworks that will enable them to recognize the fundamental relationships between sustainable communities and ecosystems — and an awareness of the consequences that we all will face if these relationships are distorted out of ignorance and self-centered greed.

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Book Reviews

Stories in the Land: A Place-Based Environmental Education Anthology

Edited and published by The Orion Society (Great Barrington, MA), 1998. 127 pp. Paper.

Reviewed by Peter Blaze Corcoran and Richard Tchen

> On the first day of school, as soon as all the children were in their seats, before anything else, I took them outside. Our year began outdoors and ended outdoors. In between we were very busy.... I wanted them to gain a greater sense of wonder, joy, knowledge, and reverence for the natural world. (David Kriesberg, p. 65)

Alas, if only all children could be so fortunate as those in Kriesberg's fourth grade, or those in any of the classes of teachers receiving Stories in the Land Teaching Fellowships from The Orion Society ... or those collaborating with universities in Watershed Partnerships, like Alice Leeds' fifth and sixth graders:

> On the afternoon before the last day of school, we took one last stroll together along the nature trail. Many of the debris huts built by students last fall were still standing, though the pine boughs placed across them had lost their needles. We walked past the structures and peered into them, looking for mice and gremlins and wondering if these huts would last into next fall. Like our year, some parts will sift away, while the places that have been built securely will remain, providing recesses and ledges in which to place future experiences. (Alice Leeds, p. 109)

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RICHARD TCHEN is a project coordinator at the Math Forum, a K-12 math education center on the Internet. Richard graduated from Swarthmore College, where he studied environmental education with Professor Corcoran. He participated in The Orion Society's Watershed Partnerships, which was the practicum component of Professor Donald K. Swearer's Environmental Studies Capstone Seminar. He studied in Professor Corcoran's Environmental Education course at Swarthmore College.

This fine and simple book is an anthology of the stories and lesson plans of a dozen teachers committed to nature literacy through place-based environmental education activities. At its root, to anthologize means to gather flowers. And so we have here a bouquet of wildflowers, no two alike but looking well loosely arranged together.

Rachel Carson asked, "Is the exploration of the natural world just a pleasant way to pass the golden hours of childhood, or is there something deeper?" Great thinkers from Leonardo Da Vinci to Edith Cobb have articulated the value of childhood experience in nature. In our world of virtual experience and diminishing nature, this simple truth has never been more important.

The Orion Society, in its broader goal "to cultivate nature literacy in people of all ages, to develop and promote new models for place-based thinking and action," gets it just right. Their models include programs and publications to "train and support master teachers who adapt the Society's place-based educational models for their own classrooms and communities."

In this volume, we see the blossoms of the labor of such teachers. We come to know their stories through the pairing of introductory essays and lesson plans.

We found ourselves wanting to hear the children's voices more often, such as when a student of Jennifer Danish's speaks of personal transformation:

> I have never been alone in the woods.... You cannot know this feeling until you have seen the vast acres of pine.... All I could smell was the pine and no pollution. Now, I don't just think of the outdoors as bugs and mud, I think of the beauty and the freedom of the landscape. (Jennifer Danish, p. 38)

Despite the lesson plans' inconsistent formats and pedagogical unevenness, these evocative, multisensory revelations into "the freedom of the landscape" thrive throughout this slender anthology.

The introductory essay "Teaching at the Edge" is offered by John Elder with humility, simply as another story. It tells of his evolving reverence for American nature writing, and is a cautious paean to

romantic pedagogy. By Elder's own account, he has "wandered into this field" of environmental education. We say much welcome, and please continue to articulate your vision. For we still, after 30 years, struggle to say clearly and persuasively what it is. Despite his peregrinations, or perhaps because of them, Elder understands essential truths about environmental education, and expresses them eloquently and radically:

> I'd like to suggest. . . that we now conceive of 'environmental education' simply as 'education' — in contrast to the disciplinary compartmentalization and abstraction that often characterize conventional curricula. My sense of this contrast relates to two things that have been confirmed by the Stories in the Land Fellowships and the Watershed Partnerships: education is most productive at an edge, in the ecological sense; and the beginning of education, as of an environmental conscience, is love. (John Elder, pp. 7-8)

Whatever environmental education is, or is not, it *is* about love. Let us be unequivocal and unself-conscious about that. In Orion's Nature Literacy Series, Number 1, David Sobel argues engagingly that we must allow children "to love the earth before we ask them to save it." In this, the second volume in the series, we see a much-needed emerging literature of romantic pedagogy blossoming in these difficult times.

To Serve and Learn: The Spirit of Community in Liberal Education

Edited by Joseph L. DeVitis, Robert W. Johns, and Douglas J. Simpson.
Published by Peter Lang (New York), 1998.

Reviewed by Adrienne (Andi) Sosin

To Serve and Learn: The Spirit of Community in Liberal Education is a volume of case study descriptions from ten exemplary service-learning programs at selected liberal arts colleges. The case studies provide rich descriptions of the programs that include triumphs of learning as well as obstacles and failures. The purpose of the volume is to share knowledge with those who would advocate for service learning in their own disciplines and institutions.

This is a book with heart. Opinions expressed by students and faculty make the effectiveness of service learning clear. In her journal, Kendra, a student volunteer in a residential drug treatment center for a course entitled: "Politics, Community and Service" at Hobart and William Smith Colleges, stated:

> I believe, through service learning, efforts can be made to regain what we have lost in the deterioration of our democratic community. I believe only service learning can bridge the schism between the division of "the others." The nature of my service allowed me to interact with all eighteen women and their children. These women shared their lives with me. I heard tragedies of the past and stories of addictions, child abuse, domestic violence.... However, there was an equally powerful positive side as well.... [I found] a community of support, trust, faith and hope.... Here women learn to get their lives back, to love themselves, and to learn the skills and tools to prepare them for a life of independence and freedom from drugs. As citizens we too must build our "selves." We must recognize our self in the context of a community. We must see our role as citizens as interdependent and interactive.... I recognize the borders I have crossed that have enabled me to redefine myself as a more active citizen in my community. (Kendra, pp. 6 1-62)

Kendra's redefinition of herself "as a more active citizen" attests to the connections and understandings which can arise from service learning, where personal and academic learning goals are connected to performing community service. Through their journals, students bring the reader with them to homeless shelters, soup kitchens, tutoring programs,

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and to Costa Rica and Indonesia. As Kendra's voice above demonstrates, service learning is powerful pedagogy.

The journals also demonstrate how students can be simultaneously positive and in doubt about the value of what they are doing. When the students question whether their experiences are worthwhile, it is a real question, not just one rhetorically posed only to be answered in the affirmative. The program faculty, facilitators, and administrators who authored these case studies are similarly frank and honest in their appraisals. There is no mincing of words when they describe shortcomings or obstacles in their programs. Nonetheless, the authors who contributed these essays are consistent in their belief that there is great value in their programs and in service learning.

To Serve and Learn is organized into three sections of essays featuring ten different programs and colleges. The first section is devoted to two examples of service learning within general education, the second section showcases five domestic community service programs, and the third section describes three international service-learning programs. Each college is a small, liberal arts baccalaureate institution, with between 1100 and 2800 mostly traditionally aged students. Some of the program descriptions include course syllabi; others include lists of community-based organizations that are partner sites; and still others include samples from student journals, like Kendra's.

The service-learning programs described are consistent with the missions of their individual institutions and with the curricula of the liberal arts, for which principles of democracy, concepts of civic responsibility, and appreciation of difference are desirable learning outcomes. "Preparation for responsible citizenship" (Drury College, p. 23), "improving the quality of life throughout the community" (Salem College, p. 35), "serving the institutions and people," (West Virginia Wesleyan College, p. 75), are explicit in the mission statements of these colleges. Less explicit but no less challenging are the calls for students to "address the pressing goal of democratic citizenship in a pluralistic and inclusive society" (Hobart and William Smith Colleges, p. 48), and to "be useful, not useless" by "do[ing] all the good you can." (Birmingham-Southern College, p. 103). Hence, the importance that these schools place on these ideals seems to predispose them to developing service-learning curricula.

I found it significant that of the ten colleges in this book, nine are related to an organized religious body. Drury College, in Springfield, MO, is associated with both the United Church of Christ and the Christian Church (Disciples of Christ); Salem is a women's college in Winston- Salem, NC, with a Moravian heritage; Westmont College is a Christian college in Santa Barbara, CA; West Virginia Wesleyan is affiliated with the United Methodist Church; Trinity College of Vermont is a Catholic college; Birmingham-Southern College is Methodist-related; Goshen College, in northern Indiana, is Mennonite-related; St. Augustine's College in Raleigh, NC, is a historically black college, with ties to the Association of Episcopal Colleges; and St. Olaf's College in Northfield, MN, is related to the Evangelical Lutheran Church of America. Some authors in the volume included mission statements for their religiously affiliated colleges which echo their faiths' pronouncements about the importance of doing good deeds. For the religiously affiliated college, service to the community and world is a moral imperative.

Since religious affiliation is a common factor for these exemplary programs, I wonder how and to what degree the programs profiled in *To Serve and Learn* are impacted by each institution's religious orientation. A broader selection which included more secular institutions might show the need for alternative sources of institutional and moral support for service-learning programs that do not depend on the faithful doing of good deeds.

Whether one agrees with the religious basis of service-learning pedagogy, it still works in a pragmatic moral context. A section on Deweyan perspectives on service learning was one of the most understandable and thoughtful discussions of this pedagogy I have encountered. DeVitis, Johns and Simpson wonder what Dewey, were he alive today, would think of service learning. They articulate eight Deweyan views:

- Social institutions other than schools can be educative.

- The learner can benefit from opportunities to "foster understanding of the continuity of experience and the inherent interdependency of such growth."
- "The curriculum of human problems" is appropriate subject matter for learning through application.
- A principle of progressive education is that the learner participates in forming purposes for learning.
- The growth of the student in social capacity and service is an important aim of education.
- That opportunities gained in a "vital" way become "motive-forces for the guidance of conduct."
- Fostering the student's "natural desire to give out, to do, to serve," is part of moral education.
- The teacher is "the mediator and interpreter of what other vocations may contribute to the development of [the student's] personality." (pp. 10-11).

The connection between liberal education, both secular and religious, and service learning is the call for citizenship through education. The editors contend that "liberal education should free the mind, body and spirit to engage in a lifelong journey into the deep mystery of what it means to be fully human" (pp. 12-13). The curriculum that the students are learning is one of communitarianism (Etzioni, p. 8), which transcends religious and secular boundaries.

Civic responsibility is a major learning goal for each of these programs, which are weighted toward service in the service-learning equation. Just as multicultural education can help students alter stereotypical ideas and work through feelings of hostility toward others, service learning that fosters work with "the other" reaches for similar goals. Many of the programs described in this volume are vitally interested in engaging students with difference, in order to help them develop more global, and less individualistic perspectives.

The introductory chapter ends with a discussion of college students' identity formation, and the role service learning can play in helping students develop cognitively and morally. The editors state:

> In service learning done well, the key values of autonomy and service to the community are not taught solely didactically, but are learned, in part, by experiencing the consequences of meeting — or not meeting — individual and group challenges. For example, the student must face the vagaries of self and an oftentimes obdurate environment and draw upon whatever capacity for independent action she can develop in the situation. At the same time, she is made aware of her wider social responsibilities because she must cooperate with those with whom she lives and works in order to sustain her own ongoing experience. (p. 14)

Educators recognize that concrete experiences are a source of learning and development not only among children, but among adults as well (Kolb, 1984). As these case studies demonstrate, experiential education, and in particular service learning as embodied in these programs, especially attends to the growth needs of traditionally aged college students during these important years of their development.

The authors and editors of *To Serve and Learn* recognize that the impact of service learning is most heavily felt by the student who is dislocated from the comfort of the known, who undergoes "rites of passage" that cause "shock, disruption, a sharp break with the past, a violent projection out of the known into the unknown." (p. 14). Perry's (1970) developmental description of students during the college years, where they become increasingly less dualistic and more contextually relative in both cognitive and moral realms, has been influential in structuring college learning environments and in particular, service-learning experiences (White, 1988). The "shock value" of the service experience is recognized and employed to move students from dualism, to multiplicity, to contextual relativism, and then hopefully to commitment which recognizes the importance of context. The effects of service learning on older, nontraditional students are not addressed here, but it is reasonable to expect evidence that more mature students would also benefit.

The case studies in this book honestly face the issues of recognizing service learning as an academic enterprise. Not all the programs described grant academic credit for service-learning activity. Academic credit is often associated with an individualized learning contract, as a means of circumventing fac-

ulty objections to awarding credit for community service. In the individualized learning contract, service-learning credit is awarded based on a written analysis of the experience. Academic credit can also be apportioned to different discipline areas, associated with a weighted number of credits. For example, during a semester of international service, Goshen College allows students to earn a total of 13 credits attributed to foreign languages, intercultural communication, social science, humanities and natural science. Justifying academic credit remains problematic in other programs.

More than one essay describes how service by college students is questioned or criticized by faculty as a less rigorous means of teaching the content of the curriculum. Eltjen Flikkema, Director of the Drury College Honors Program, from which the Drury service-learning program grew, addressed the issue by stating that "after all, this is activity performed off campus, usually without direct day-to-day supervision by a professor. In addition, the work performed is deemed by some to be manual, menial, and therefore unworthy of academic credit" (p. 25). Although Flikkema finds these objections neither unexpected nor unreasonable, he counters the argument by suggesting that the issue be considered from the perspective of the student who expects his or her academic experience to be structured in terms of credits for attainment of course requirements, even if those requirements happen to be performing manual or menial community service. In another example, Rick Fairbanks, advisor to St. Olaf's Study/Service Indonesia program, describes it as the only study abroad program at the college where students earn credit for service. While many St. Olaf's students study abroad, Fairbanks doesn't mention any other service-learning programs at the college, telling instead about his meeting with a faculty committee who questioned the concept of service learning. Fairbanks expresses his surprise at the faculty committee's interpretation of the term, *service*, which questioned not only academic legitimacy, but also implications about whether service implies the superiority of the server as a missionary of a colonial power. Faculty, suspicious of service as source of rigorous education and fearful that the service implies attitudes of colonialism, posed the question as, "That's all well and good on their (the student's) own time, but what does it have to do with liberal education (or technical training, career preparation, etc.)?" In response, Fairbanks advises, "If one introduces a service-for-credit program or proposes a service requirement for an established program, it is crucial that the service be an integral intellectual element of the program, that it not be perceived as a superfluous addition of "do-goodism." (p. 157). On the basis of program evaluation and assurances that the service-learning program is "academically as well as experientially rich" (p. 160), St. Olaf's standardized credit-transfer mechanisms so that students were no longer in the position of having to persuade reluctant academic chairs to approve tutorials.

Faculty support is crucial to the successful implementation and institutionalization of service-learning. At Goshen College, "getting faculty on board" meant a number of things: accommodating student absences from campus, accepting discontinuities in programs, and perhaps most significantly, volunteering to direct units overseas, which for most faculty meant renting the house and relocating the family for a year and sometimes more (p. 127). Goshen College gained faculty support partially by granting funding for faculty visits to their international sites to study in their own professional fields.

Other programs profiled in *To Serve and Learn* establish special administrative offices or regularly release faculty from teaching responsibilities in an effort to help them administer the service-learning programs. Some rely on volunteer faculty and administration to oversee the program. Often the program administrators develop sources of outside funding as they continue to advocate for internal support. For example, the Student Literacy Corps at West Virginia Wesleyan was originally funded through grants from the Federal Department of Education. The Salem Signature program was initially underwritten by a matching grant from the Knight Foundation. The American Commitments program at Hobart and William Smith Colleges received start-up funding from the American Association of Colleges and Universities, and has a full-time administrative professional leading an Office of Public Service, staffed by student coordinators paid through work-study funds.

The academic calendar is another potential obstacle to service learning. Goshen College attempted a trimester system to integrate Study-Service Abroad. However, problems such as lack of articulation with other educational institutions, interruption of athletic and music programs, and the need for a fifth year for some students to graduate, pushed Goshen to return to a semester calendar. Although it has made changes to accommodate the service-learning experience for a program which reaches 25% of their students, "few faculty, if any, would argue that Goshen College has found the ideal general education program that packages both the on-campus and off-campus requirements" (p. 128).

The cost of service-learning programs is not addressed as a major issue in this volume because the population of students who participate can generally afford to do so. St. Augustine's College is an exception, where "financial needs ultimately become the determining factor in students taking part in a service-learning study abroad program" (p. 148). Many students are forced by necessity to work during the year to pay their college expenses, even at liberal arts colleges. I found these essays did not substantively address the issue that many students cannot take time away from traditional course work and the work that supports their being in college, to participate in service. In my experience as the coordinator of a Student Literacy Corps program, students' financial needs are central at colleges where many students support themselves. Participation in service learning can be precluded due to need to use that time for earning income.

Service learning is a "hot" topic. Lots of attention is now focused on calls for national service at all levels. General Colin Powell and many other political leaders and celebrities have brought attention to the importance of service as a civic obligation. The Corporation for National Service and other public and private funding sources are more available than ever before for programs that encourage citizenship through service. There is now a wealth of information available to those who are interested in encouraging service learning.

Using the Internet, one can find scores of web pages about service learning. Many of these pages were created by K-12 schools, colleges, and universities to describe their individual projects. Other pages contained essays with links to clearinghouses, like ERIC, the Corporation for National Service, the Campus Outreach Opportunity League, Learn and Serve America, and other national organizations that promote service learning. In the 25 years it took to develop some of the programs described in *To Serve and Learn*, much has taken place in the field of service learning. Many newer efforts have begun. The proliferation of information is enormous.

I can recommend *To Serve and Learn* for the intimacy and personalized style many of its authors employ. They ask heartfelt questions and pose significant problems. They demonstrate their solutions as they search for even better ones. *To Serve and Learn* is an inspirational volume that provides rich descriptions of exemplary programs to serve as models, accompanied by a well-reasoned caveat that each program must fit its own context. To try to adopt a program example "whole cloth" would fail. This is why the program descriptions are so well developed. For educators who are interested in developing service learning at their post-secondary institutions, especially small liberal arts colleges, this book provides many valuable suggestions and models. These are exemplary programs, yet they are not the only models. Larger, secular, or otherwise different institutions will have different constraints and need to develop different programs for their students. As a limited focus introduction to service-learning pedagogy, *To Serve and Learn* gives us much to reflect upon and admire.

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Critical Pedagogy: Notes from the Real World

by Joan Wink

Published by Longman (White Plains, NY), 1997, 167 pp., paper.

Reviewed by Linda S. Bausch

Critical Pedagogy: Notes from the Real World opens an important dialogue for students working toward their teaching credentials at a time when the established Eurocentric curriculum is coming under fire within research-based educational circles. It is a firm stepping stone for established teachers who intuitively feel that there has to be another way to teach and affect change in their diverse classrooms. It is also for any educator who wants to critically examine the reproductive function of schooling.

Critical Pedagogy is written in a conversational voice with accessible language. This allows readers, new to critical theory, time to reflect on the powerful concepts that Wink presents step-by-step in five chapters titled "Critical Pedagogy, How in the World Did I Get Into This?"; "What in the World Is It?"; "Where in the World Did It Come From?"; "How in the World Do You Do It?"; and "Why In the World Does It Matter?" The chapters end with a note section peppered with personal narrative, and a bibliography with a diverse cross section of works that will help readers begin their own journeys in the areas of critical pedagogy, educational empowerment, and literacies of power. The stories in these chapters resonate with Wink's personal experiences in the classroom, in conversations with her colleagues, and in her private life.

In the introduction titled "The Story of Jonathan," Wink shares her experience with young Jonathan who comes from "an enriched family" with plenty of "food, love, and lots of laughs" (p. 2). His father and mother are educated, his siblings supportive and loving. Jonathan had the best of everything at home and in school. But Jonathan didn't read. He didn't read in first, second or third grade. By fifth grade his parents, desperate to help their son, enrolled him in a private program focusing on auditory discrimination. This program, with it's emphasis on letter/word sounds and the positioning of tongue and lips, were all anathema to Wink. But, Jonathan read. This program contradicted everything Wink believed in. It led her to a deeper understanding of education and to the works of Vygotsky, Giroux, McLaren, Freire, and others. Wink learned as a result of something that stood in opposition to her beliefs and from that genesis her book was born.

In one of the more powerful chapters, "Critical Pedagogy, What In The World Is It?," Wink compares the conceptual discomfort the readers of this text may feel with the discomfort experienced by students in new learning environments. The students in her example are encouraged to discover the concept of *difference* in an authentic math lesson. They needed to discover the difference between their estimation and the actual count. What they discovered along their mathematical journey was that the talking and thinking of a collaborative workshop environment was more difficult than the guessing and counting of the concrete manipulatives. Wink segues from the children's discomfort to the reader's discomfort with the concepts of critical pedagogy. The cause of this discomfort, Wink suggests, is the minimal grasp of these new secondary discourse systems.

Critical pedagogy is an ongoing quest where we as educators must reflect on our own histories and generate new questions and answers based on knowledges, literacies, and cultures. The roots of critical pedagogy reach deeply into the historical praxes of experiential and analytical ways of knowing. Knowing, according to Freire, means being an active subject who questions and transforms. Knowledge cannot be acquired through just reading books or even from observing and studying a particular reality. The life changing work of an educator is more than the dissemination of information. It is based on a "co-intentionality" (Shor, 1993, p. 26) and on the faith that education for and with students will evolve into social changes:

> For Paulo Freire teaching and learning are human experiences with profound social consequences. Education is not reducible to a mechanical method of instruction. Learning is not

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> a quantity of information to be memorized or a package of skills to be transferred to students. Classrooms die as intellectual centers when they become delivery systems for lifeless bodies of knowledge. Instead of transferring facts and skills from teacher to students, a Freirean class invites students to think critically about subject matter, doctrines, the learning process itself, and their society. (p. 25)

Wink's intentions are to open a critical dialogue with teachers to aid them in their struggle and understanding of critical pedagogy as they and their students begin to find their voices in the classroom. I'm concerned though, that by trying to reach her audiences, at perhaps the early stages of their understanding of critical pedagogy, the power of the ideas of Gramsci, Freiere, Marx, and Giroux will be lost due to their oversimplification. In this context, Wink's book could be regarded as a "how-to" manual filled with"pedagogical recipes."

As a teacher, one of the more difficult journeys I have undertaken has been the reading of the very authors Wink cites in her book. It is not the language or the concepts that I found difficult, it is the part I play as a teacher, a woman, a wife, and a mother and how these experiences influence the teaching and learning that occurs in my classroom. Though, at times, a painful journey, it has been liberating to discover the ways that I have been silenced by my culture and how that silence has influenced my teaching. Freire and others have issued a call for educators to construct a notion of politics and pedagogy outside the established educational borders. Before educators can invite students on a journey of self-realization they need to become conscious of their own complicity in producing and maintaining specific forms of oppression that deeply inscribe the legacy of colonialism. Wink may be unwittingly construed as having erased the complexity, complicity, diverse agents, and multiple situations that constitute the enclave of hegemonic discourse. As Gayatri Spivak (1990) has pointed out, more is at stake than problematizing discourse, educators and cultural workers must be engaged in "the unlearning of one's own privilege" (p. 42).

Wink's book could have been more powerful if she had encouraged her readers to draw on not only students' lives as sources of knowledge and insight, but on their own lives as part of an alternative curriculum, This may mean organizing curricula in ways that enable students and teachers to gather data and draw conclusions from their own experiences as historical and social beings and how these experiences are implicated in relations of equality and justice.

Wink has taken great pains to open a dialogue with teachers on critical pedagogy. With her open and inviting language many educators will feel comfortable extending and delving deeper into the works she cites of Freire, McLaren, Gee, and Giroux. Her goal of anchoring concepts of critical pedagogy to the growing knowledge base of educators is respectful and well structured. As professionals committed to social change, we need materials and resources that articulate and make real what we know intuitively. Joan Wink is a teacher/researcher who is standing with us shoulder to shoulder, guiding us as we begin this important work.

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Special Book Supplement

Concepts as Organizing Frameworks

Edward T. Clark, Jr.

Because concepts provide the underlying structure of all disciplines and knowledge, they can serve as a powerful framework for a truly integrated curriculum.

> The mind thinks with ideas, not with information.... The principal task of education, therefore, is to teach young minds how to deal with ideas: how to evaluate them, extend them, adapt them to new uses. This can be done with the use of very little information, perhaps none at all.... An excess of information may actually crowd out ideas, leaving the mind (young minds especially) distracted by sterile, disconnected facts, lost among shapeless heaps of data. (Roszak 1994)

> The learning process requires that new information become part of a coherent conceptual structure, yet no systematic attempt is being made to create a curriculum which reflects that requirement. (Brady 1989)

In Chapter Two (see *Encounter* 11[1]) I discussed the relationship between systems thinking, the structure of knowledge, and the fact that humans construct rather than discover knowledge. In this chapter I want to explore in greater detail the central function that concepts play in understanding and constructing knowledge. Although I have been using the terms *principle* and *concept* interchangeably, here I will use the term *concepts* since this is a term used extensively in education. Although there are many broad concepts that are discipline-specific, the concepts to which I will be referring are those universal, systemic principles that are implicit, if not explicit, in every academic discipline, e.g., *interdependence, diversity, structure/function.* Because these concepts can be applied in meaningful ways to every field of study, they suggest the interdependent nature of all forms of knowledge and provide powerful cognitive tools with which to bridge the chasms that exist between the various disciplines.

My working definition of concept is *a big idea that helps us makes sense of, or connect, lots of little ideas.* Concepts are like cognitive file folders. They provide us with a framework or structure within which we can file an almost limitless amount of information.

This article is the sixth chapter in Clark's *Designing and Implementing an Integrated Curriculum: A Student-Centered Approach,* published by Holistic Education Press. The first five chapters were printed in prior issues of ENCOUNTER. Readers interested in purchasing the full bound edition at $18.95 per copy are invited to do so by phoning the Press toll-free at 1-800-639-4122.

The references to "Thompson" in the text are to the Thompson Middle School in St. Charles, Illinois.

EDWARD T. CLARK, JR., **specializes in integrated curriculum design and site-based educational change. He has been involved in teacher education for over 30 years—as Director of Teacher Education at Webster University, as Professor of Environmental Education at George Williams College, and as an independent educational consultant for the last fifteen years.**

One of the unique features of these conceptual files is their capacity for cross-referencing. Because concepts focus on similarities and homologies, they provide powerful linkages between what would otherwise be considered disparate and seemingly incompatible information. For example, think of how many "little ideas" from almost every field of knowledge can be linked together under the concept, "hot." Once a child learns experientially what "hot" means, she can make an almost infinite number of connections and associations without having to be burned again.

Because of their amazing capacities of association, concepts are *the primary cognitive information organizing strategies, and, as such, are the most powerful and therefore most useful cognitive tools available to us.* Most of us are completely unaware of how we use concepts. Symington and Novak (1982) remind us, "It is through the concepts we form, and the linkages we make between them, that we make sense of the world around us." Theodore Roszak (1994) echos this when he writes, "The mind thinks with ideas [or concepts], not with information [or facts]."

Bruner (1960) was referring to concepts when he discussed the role of structure in thinking and learning. He identified four essential functions that concepts perform in helping us organize our perceptions and understanding of the world.

1. Concepts provide structure for a discipline

In every academic discipline there are a set of fundamental concepts and principles that constitute the conceptual structure of the discipline. In Chapter Two, I compared such concepts to the studs that frame a house. While studs do not provide detailed information about either the rooms or the house, they do furnish an overview of the shape, size, and layout of the rooms and a structural schema of the entire house. In like manner, while concepts don't provide information about the details of a subject, they do make it possible to understand the relationships that exist within that discipline and how it functions as an integrated knowledge system. Based on the importance of understanding this structure, the National Center for Improving Science Education has proposed a set of conceptual themes for organizing science curriculum: "cause and effect, change and conservation, diversity and variation, energy and matter, evolution and equilibrium, models and theories, probability and prediction, structure and function, systems and interaction, and time and scale" (Brooks and Brooks 1993). Although these concepts represent fundamental scientific processes, from a systems perspective, they can be applied to other subjects as well.

Once a learner has grasped these relationships, she has a context for asking appropriate questions to find whatever information is required for a given task. In an age where we are swamped by information overload, to understand the conceptual structure of a subject is to literally know more with less information. This is why, to paraphrase the Chinese proverb, "a concept is worth a thousand — or perhaps ten thousand — facts." What an energy and time saver!

2. Concepts provide a framework within which details can be more readily understood and remembered

The conceptual framework of a subject is a natural, built-in mnemonic. Once grasped, this structure provides a context-of-meaning for learning detailed information in the form of facts and data. Because what is being learned can be associated with what is already known, it becomes meaningful and can be remembered with relative ease. Gurley (1982) has demonstrated the degree to which concepts aid learning. In a ninth grade introductory Biology class, concepts and concept mapping were introduced as a structure for learning more detailed information (See Figure 1). On a test administered *a year later*, the retention rate of the experimental group was 80% higher than the control group, which had been taught using the conventional method — beginning with facts independent of any conceptual framework.

3. Concepts are the primary bridges that make transfer of learning possible

The transfer of learning is one of the most misunderstood concepts in education. Far from being a "science" that can be taught, as David Perkins and Gavriel Salomon (1992) suggest, the transfer of learning is an innate, intuitive capacity that is as natural as thinking and learning. Indeed, from what we now know about how thinking and learning take place, it

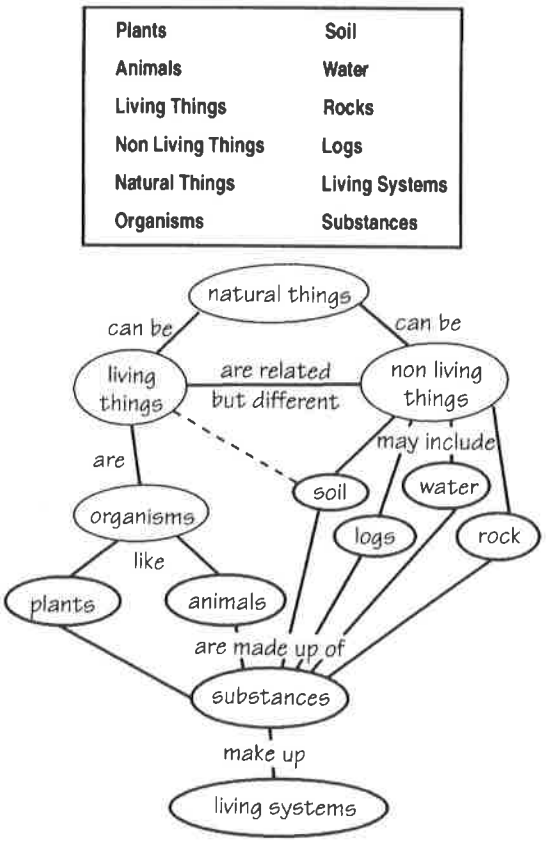

Figure 1. Concept Map for a Biology Chapter

seems clear that transfer is an integral feature of the cognitive process I have called intelligence/thinking/learning. The primary reason that so many adults are unable to transfer what has been learned in one situation to a different situation, is because they have been programmed to think linearly, inductively, and in little boxes.

Hilda Taba points out that each academic discipline has its own array of distinctive facts which have little or no meaning within other fields of study. As long as learning focuses on these "facts as building blocks," no transfer of learning is possible because there are no natural bridges between the disciplines. As Taba's taxonomy of knowledge makes clear, the key to the transfer of learning is a conceptual framework that bridges the various disciplines and shows how things are related to each other. Since there are a number of fundamental concepts that all disciplines share, these concepts can provide the necessary bridges. For example, once a student learns the intrinsic relationship between *structure* and *function*, that insight can be applied in any arena, e.g., art, music, math, science, social studies, and language. In the same way, the other concepts identified by the National Center for Improving Science Education for organizing science curriculum — e.g., cause and effect, change and conservation, diversity and variation, energy and matter — are universally relevant. Once they are learned in science, they can be applied with meaning in virtually any subject.

Thompson School eighth grade team leader Doug Thompson notes that although members of the team were still teaching their own individual subjects, "The major strength for kids this year is that we are all talking about the same questions and concepts."

A second grade teacher found that her students quickly understood, with no more than two or three examples, the ecological concept, *adaptation*. Once they learned this, there were able to make intuitive leaps — what educators call the transfer of learning — to discover examples of adaptation in other areas, e.g., humans adapt to cold weather by building houses. To return to an illustration used earlier, consider the transfer of learning implicit in the many ways we use a term like "hot." Although few adults understand the physics of heat, we all know what is meant by "hot pants," "hot stock," "hot number," "hot tip," and "hot idea." Even children — who presumably aren't capable of abstract thinking — can generate a list of things that are or can be "hot." In addition to the more obvious things, "hot stove," "hot sun," "hot water," kids who have been raised on MTV may also talk about a "hot band" or a "hot song." This is because children naturally see relationships and make connections, often far beyond the capacities of adults who have been programmed to think in little boxes.

Kathy Krug's face glowed as she told us about how learning transfer occurred for one of her students. Warren had just finished reading a column from the *Chicago Tribune* in which columnist Bob Greene wrote about Michael Jordan's daily early morning drives to the Chicago White Sox training facility. Talking about his father who had been murdered the previous year, Jordan told Greene, "I'm alone in the car, but my father is with me.... I remember why I'm doing this. I remember why I'm here. I'm here for him." Warren's eyes sparkled. "Ms. Krug, Michael Jordan was just like Rudy Matt in the

story we read last month, wasn't he!" (*Banner In The Sky* by Ramsey Ullman).

4. Concepts provide the framework for lifelong learning.

Twenty-five years ago Bruner suggested that concepts were the foundation for lifelong learning. With the focus today on preparing students to be lifelong learners, it is crucial for teachers to understand that one of the first steps toward achieving this outcome must be a recognition of the fundamental role that concepts play in thinking and learning. *Concepts help us make sense of our world precisely because they are the vehicles that carry most of the information necessary for thinking and learning.* To attempt to teach someone to think or learn without using concepts as a framework is like trying to teach them how to paddle without providing them with a canoe. Another, perhaps more accurate analogy is that concepts are like railroad tracks. Teaching facts without first understanding concepts is like trying to drive a locomotive without first laying out the tracks.

According to Brooks and Brooks (1993), there is a fifth function that concepts perform in the thinking/learning process: *They provide the cognitive framework that makes it possible for us to construct our own understandings of the world in which we live.* As has already been noted, whenever we learn something we place it into some framework that we already understand. In so doing, we create our own interpretation and meaning. Indeed, *learning is the act of interpretation that emerges from the interaction between the learner and the object of learning.* As C. T. Fosnot notes, "Learning is not discovering more, but interpreting through a different scheme or structure" (Brooks and Brooks 1993). In short, learning is "meaning-making" and requires a context (a cognitive structure) to occur. In order to aid and abet our natural capacity for constructing knowledge, the Brookses propose that teachers structure curriculum around primary concepts and "conceptual clusters of problems, questions, and discrepant situations."

Concepts and the Theory of Living Systems

Of immense importance in becoming a lifelong learner is an understanding of what are generally known as *systems principles* — broad concepts that, according to the theory of living systems, are universally applicable. Because these concepts apply to all fields of knowledge, they provide us with a single conceptual framework for thinking and learning; and they provide a virtually unlimited number of cognitive bridges for the transfer of learning. To return to the railroad analogy, one set of tracks can carry trains of belonging to any railroad company.

According to physicist Fritjof Capra (1994),

> The theory of living systems looks at the world in terms of relationships and integration. It recognizes that all life on earth is organized in an intricate web of inter-relationships. Far from being random, these relationships seem to be arranged in a series of complex, interconnecting patterns which we call living systems. *Whether we are describing individual organisms, social systems or ecological systems, these patterns are consistent, reflecting at all levels common properties and similar principles of organization.* (Emphasis added)

These principles of organization are the principles of ecology. Although we tend to think of ecology as the study of nature's systems, the fact that human cultures are inextricably embedded in the these natural ecological systems, suggests that at some fundamental level, cultural systems are homologous — that is, "similar in structure and evolutionary origin" with natural systems. In short, cultural systems are ecological systems. As such, they may be considered subsystems of the planetary ecological system much the same way that the heart and lungs are subsystems of the human body. From this perspective, every academic discipline and professional field of work is ecological in character. For example,

- Sociology is the ecology of social groups.
- Political science is the ecology of collective decision-making.
- Economics is the ecology of finance and exchange.
- Anthropology is the ecology of culture.
- Business management is concerned with the ecology of organizations.
- Physics, chemistry, and geology are studies of the ecology of physical matter.
- Mathematics is the ecology of numbers and their relationship to physical matter.
- Reading and writing are fundamental expres-

sions of the ecology of language and communication, while art, music, drama, and dance reflect other, more subtle forms of the ecology of communication.

According to the theory of living systems, these academic disciplines share common properties and certain principles of organization with all other living systems from the simplest cell or organism to the global village. These are the principles and properties found in ecological systems.

Operating Principles for Living Systems

While there are hundreds of principles and concepts that characterize ecological systems, the primary ones include interdependence, sustainability, diversity, partnership, coevolution, fluctuating cycles, and energy flow. (Parts of the following descriptions are taken from Capra, Clark, and Cooper [1993].)

Interdependence. Interdependence is the unifying principle operative in all systems. As the first principle of ecology, it defines the nature of the complex web of relationships that exist among the individual parts of a system and between those parts and the system as a whole. Substantively, it is a relationship in which the success of the system as a whole depends upon the success of each individual member, just as the success of each member depends upon the success of the whole system. In ecology, this mutuality is best illustrated best by the relationship that exists between an ecological community and the individual niches which make up that community. Each niche represents a functional slot in the ecology of a community. In a food chain, for example, each species often has a highly specialized function: providing food for a predator species and at the same time acting as predator for the species on which it feeds. If a particular species is wiped out by disease, the stability of the entire ecological community is, to some degree, diminished. In the same way, each business in a small town community fills a unique niche. Anytime one of these businesses fails and is not replaced, the stability of the community is, to some extent, diminished. In both ecological and human communities, the success of these niches — whether species or business — depends upon the success of the community as a whole, while the success of the entire community depends upon the success of each niche.

Interdependence is a universal characteristic recognized as being fundamental to the success of all social, economic, and political systems. As an integrative concept, it can be applied with equal appropriateness to a work of art and the study of a galaxy; to writing a sentence and learning a language; to computer science and the engineering of a spaceship; to the sociology of a family or of a multinational corporation; to economics, political science, or ecology. Because of its comprehensive relevance, interdependence can become a powerful unifying strand in the broad tapestry of thinking and learning. Once a child understands what interdependence means, he or she is able, through the transfer of learning, to operationalize the concept in a virtually limitless number of applications.

Sustainability. Every system requires a resource base to provide the raw materials upon which the system depends for survival. Because every system is finite, its resource base is necessarily limited. The long-term survival (sustainability) of any system depends on its ability to live within these limits. While there are tolerances, there is always a point of no return beyond which a system cannot extend itself and recover. For example, in a severe drought an ecological community may be pushed beyond its capacity to recover.

These limited resources define the system's carrying capacity, i.e., its ability to sustain itself indefinitely on the given resources. A garden has a carrying capacity. So does a home, an office, a schoolroom, a business, a nation, and the planet. When the limits prescribed by available resources are exceeded, there is trouble. For example, just as an overcrowded garden is less productive, so crowding in an office inevitably cuts down on productivity. Crowding in a classroom always has negative consequences on learning. Crowding in our cities produces physical hazards — ranging from joblessness, homelessness, disease, and crime to more subtle psychological hazards, such as loneliness, stress, depression, anger, frustration, and powerlessness. These conditions are symptomatic of system disequilibrium — "disease." While initially the symptoms may not be obvious, once they reach a critical mass, the result can be total systemic collapse, e.g., revolution.

Diversity. The successful maintenance and stabil-

ity of any system depends substantially on the degree of complexity and diversity of its network of relationships. In general, the greater diversity results in greater stability. For example, an oak forest with its rich diversity of life is far more stable than a cornfield, which is essentially a monoculture. A natural forest is more stable than a man-made forest of Douglas firs planted by a lumber company. Stability in cultural systems also requires diversity. The diversity of ethnic and cultural backgrounds is one of the strengths of our nation. In spite of our envy of Japan's success, her major weakness is the lack of ethnic diversity. What appears to be strength may in time prove to be a fundamental weakness. It is ironic that both Japan and Germany, the two aggressor nations in World War II, were both in essence ethnic monocultures and highly susceptible to ideologies based on ethnic superiority. Such ideologies would have a harder time in the United States because if they appealed to one group (white supremacists), at the same time they would be rejected by many other groups. In all human organizations, diversity is necessary to maintain stability. This is especially important in our age of narrow specialization.

Partnership. All members of any living system are engaged in a subtle and dynamic interplay of competition and cooperation, involving countless forms of partnership strategies. These two powerful drives ideally function in a unique reciprocal relationship much like centrifugal and centripetal forces. When a dynamic balance between the two is achieved, the power and thrust of adaptive change results in both stability and creativity, each of which is crucial to the success of all living systems. When this balance is lost, the stability of the system is endangered. Too much competition leads to burnout and self-destruction. Too much cooperation leads to passivity, inertia, and apathy. The dynamic quality of this partnership principle is highlighted by the insight from chaos theory that it is at that elusive boundary between chaos and order where creativity and novelty emerge (Briggs and Peat 1989).

Competition is one of the most misunderstood of all ecological concepts. It is a dogma of capitalistic society that unbridled competition is the fundamental driving principle in the natural world. Extrapolating from this interpretation of natural principles, there is a powerful bias in our country toward unrestrained competition in human economies, i.e., Social Darwinism. The irony is that (a) there is no such thing as unrestrained competition in nature, and (b) no one believes in unrestrained economic competition. In natural systems, competition within species is always constrained by cooperative strategies such as territoriality and dominance hierarchy. Competition between species is controlled by factors such as adaptive modifications, which often result in two similar species utilizing entirely different food sources. In cultural systems, the most vocal defenders of unrestrained economic competition are often the first to exploit political means to protect themselves from the very competition that they defend.

In short, competition apart from cooperation is essentially a meaningless concept. Even in so-called competitive sports, successful competition requires some form of cooperative behavior. Indeed, one cannot conceive of a game without rules, whether it be the "game of life" as played in nature or the economic game as played in both capitalist democracies and communist dictatorships.

Co-evolution. Change is a universal principle that reflects the impact of time on all systems. Systemic change occurs as species and groups co-evolve through an interplay of creation and mutual adaptation. Ecosystems also co-evolve with the larger systems of which they are a part. In each case, the *creative selection of novelty* in response to the changes in its environment is a fundamental property of life. This response is manifest in the process of change, growth, development, and learning and results in both creativity and increased diversity. The inability of a system to co-evolve eventually results in extinction — for a plant or animal species, for an indigenous culture, for a business, for a national government, for the human species.

Fluctuating Cycles. The interdependencies among the members of a system involve the exchange of information, i.e., matter and energy, in continuous cycles. These cycles act as feedback loops that make possible the healthy, dynamic balance required by the system. These cycles have the tendency to maintain themselves in a flexible, fluctuating state as they provide various levels of tolerance in the dynamic interplay between stability and change.

There are two kinds of cycles in natural and cultural systems. One is the rhythmic fluctuations that occur over time, such as the seasons, life cycles, and economic cycles. The other refers to the physical recycling of materials — the flow and exchange of atoms and molecules of matter through physical systems, such as the planetary ecological system and the human body, and the flow of money as a symbolic substitute for materials that flow through cultural systems. Cycles in living systems are never static. Rather, as rhythms of change, they reflect the ongoing adaptive processes of a system. Because of their dynamic nature, their function in living systems can be described best in cybernetic terms as information feedback loops. Just as urinalysis provides information/feedback about the health of the human body, the quality of our planetary water supply provides us with information/feedback about the health of our ecological systems. Historian Arthur M. Schlesinger, Jr. (1986), has identified a cyclical rhythm in our national life that oscillates between public purpose and private interest. He suggests that true cycles are self-generating, driven by their own internal rhythms. Each phase flows naturally from the conditions of the previous phase, and in turn, creates the conditions that call forth the next recurrence. In a similar manner, cycles are relevant to every subject studied in school and every arena in life. For example, power utility companies design their systems to account for peak and nonpeak loads. In the same way, we can apply our knowledge of how growth/rest cycles shape ecological systems to cultural systems such as economic or organizational systems, to make them more efficient. For example, burnout reflects a failure to apply what we know about growth/rest cycles to human and organizational systems.

Energy Flow. All living systems are open systems and as such are dependent upon an external energy source for survival. Just as our planetary ecology is dependent upon the energy from the sun, all plants and animals are dependent upon an external energy source in the form of food. If we were able to think of food as energy, we would learn to be as careful about the food we take into our bodies as we are about the quality of gasoline we use in our automobiles. Cultural systems depend for their survival upon an external form of energy called *information*. Money, knowledge, and data are all forms of energy transformed into information — energy in-formation — by the human mind. Just as the health of natural systems depends upon a free flow of solar energy throughout the system, so the health of cultural systems requires a free flow of information, e.g., money, knowledge, and data, throughout the system. System imbalance occurs whenever there is a glut of energy/information, e.g., money, in one part of a system at the expense of the rest of the system. If this becomes too pronounced, a systemic embolism may result.

While these are the major organizing principles that characterize living systems, there are a number of related concepts such as those recommended for science education, which are also universally applicable. Table 1 identifies some that are particularly useful in educational settings.

Table 1.
Ecological Principles and Concepts

Ecological Principles	Related Concepts
Interdependence	Community/Niche, Network, System Models
Sustainability	Carrying Capacity, Habitat, Limits
Diversity	Similarities and Differences, Stability
Partnership	Cooperation/Competition Structure/Function, Cause/Effect
Coevolution	Change, Adaptation, Succession, Values, Choice, Creativity
Energy Flow	Energy Exchange, Information Flow, Power
Fluctuating Cycles	Feedback, Cycles, Patterns, Balance, Permeable Boundaries, Tolerances

How Concepts Frame an Integrated Curriculum

Since all academic disciplines are in some elemental way ecological systems, these principles/concepts can be powerful cognitive organizers for framing an integrated curriculum that bridges all of the disciplines. Because, as Bruner notes, these concepts can be taught in some way to children of all ages, they can be used to integrate a curriculum vertically, that is across grade levels. This is what Bruner meant

by a "spiral curriculum" — one in which certain basic concepts are revisited year after year, each time with new information and insight. This is a far more powerful and natural means of articulation than that found in conventional curricula with its linear, often arbitrary progression of ideas, subjects, and themes from the simplest to the more sophisticated. Figure 2 shows how the K–8 grade level curricula discussed earlier could be integrated vertically using the ecological concepts.

I will illustrate how some of these concepts might be used with the Focus or Contextual Questions in Chapter Five (see *Encounter* 11[4]). Because of their ability to facilitate inquiry and learning, questions are useful for directing attention to specific concepts

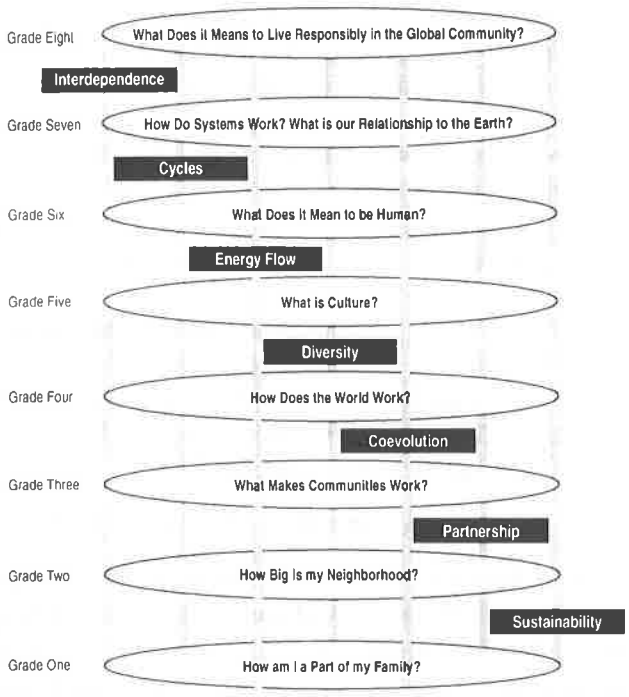

Figure 2. A K-12 Curriculum Framed by Seven Concepts

and their relevance to Focus or Contextual Questions. As might be expected, many of the questions apply equally well to several Focus Questions, e.g., families, neighborhoods, and communities.

Focus Question:
How Am I a Member of Many Families?

- What are the similarities and differences among the members of your family? What would it be like to live in a house where everyone was exactly alike? (Diversity, Tolerance, Variety) What are the different kinds of chores that the various members of your family perform? What happens when one of you doesn't do his or her job? (Interdependence, Partnership, Niche)
- Draw a diagram or picture that shows how each member of your family depends on the others family members. (Interdependence, Patterns, Models)
- In what ways do you compete with others in your family? How do you cooperate with them? Which do you do most? What happens when you become too competitive? (Partnership, Diversity, Cause/Effect)
- What happens when a new baby is born into a family? (Co-creation, Diversity, Interdependence, Partnership).
- How many ways do you use to communicate with others? (Energy Flow, Information Flow, Feedback Cycles)
- How is your family different now than it was a year ago? Five years ago? What do you think it will be like when you are 10? Why? (Change, Diversity, Adaptation)
- What are the rules that determine how you spend your money? What would your family do with more money? With less money? (Sustainability, Limits)
- How would your life be different if you lived in your neighbor's house instead of your own? If you lived in the next block, or a different city. (Habitat) How do you get along with your neighbors? How are your neighbors like you, and how are they different from you? (Community, Diversity)

Focus Question: What Is Culture?

- What kinds of resources does a neighborhood, town, city, and country need? How does its resources influence a town or a nation? What happens when a neighborhood, town, city, or country uses up all its resources? What can you know about a culture from its location? (Sustainability, Carrying Capacity, Habitat, Niche)
- How do people in a culture communicate with each other? (Energy Flow, Feedback Cycles, Information Flow, Patterns)
- How do cultures change over time? (Change, Stability, Diversity)
- Why are cultures different from each other? (Diversity, Adaptation, Change, Choice, Values)

How do people in a culture compete with each other? How do they cooperate? (Partnership) Suppose all cultures were exactly alike? (Diversity, Partnership, Tolerance)
- How do the forms of transportation (or tools or food or shelter or technology) in a culture reflect the needs of the people? (Adaptation, Structure/Function, Creativity, Cause/Effect, Probability/Prediction)
- What kinds of rules do cultures need? (Limits) How are decisions made concerning rules? (Choice, Diversity, Cooperation/Competition)

Focus Question: What Does it Mean to be Human?

- In what ways is diversity built into our bodies? How are our bodies like systems? How are our minds like systems? How do the cells in our bodies compete/cooperate?
- How is my body like the Earth, like the Milky Way Galaxy, like a pond, like an earthworm?
- In what ways is my body a community or neighborhood?
- What kinds of energy does my body require to be healthy? What kinds of energy do I put into my body?
- How is language a feedback loop? How are my emotions a feedback loop? What kind of feedback do my various emotions give me? How are my thoughts a feedback loop? How can I learn from these feedback loops?
- How many different roles do I play each day? In what ways are these roles similar or different? Which is the real "me"?
- What kinds of limits/rules do I live by? What happens when I ignore these limits or break these rules? Which ones can I ignore without negative consequences?
- What cycles and patterns shape my life? What can I learn about myself from them?
- In what kinds of situations am I most creative, least creative?

Focus Question: How Does One Live Responsibly in the Global Community?

- What is the relationship between global resource distribution and national stability and global stability? What is meant by "bio-regionalism"? What would bio-regionalism do to local economies, to national economies, to global economies?
- What forms of communication are best suited to enhance global cooperation?
- What features do all cultures share? Which are distinctively different? What have we to learn from other cultures? What does our culture have to teach other cultures? Who decides which things are good and which things are bad about another culture? about your own culture? What is meant by "cultural hypnosis"?
- What is a reasonable standard of living for all humans based on the available resources? What changes would have to occur if everyone was to have "enough"?
- What is the carrying capacity of Planet Earth? How does technology affect the carrying capacity? What determines the carrying capacity of the planet, or a nation, or a region?
- How has technology decreased sustainability? How can technology improve sustainability?
- How can we learn from "patterns of change"?
- In what areas is it healthy to compete and in what areas is it more healthy to cooperate?
- How can we increase the number of self-governing communities without causing anarchy?
- What are the macro-constraints within which human societies must learn to live?
- What kinds of rules would be necessary to live cooperatively in the global village? What kinds of rules govern other villages?

Introducing Concepts in the Classroom

I have found that one of the best ways to introduce concepts is "clustering," a form of concept mapping that Gabrielle Rico uses as a brainstorming strategy for creative writing. It is a simple and extremely useful technique for creating a collective cognitive map, sometimes called a mind map or a concept map. The process is simple: The teacher puts the concept on the board or on a sheet of newsprint, draws a circle around it, and invites students to brainstorm any words that come into their minds. The words are added to the map either arbitrarily or by connecting each new word to one already on the board. The only rule is that *anything goes*. The teacher must avoid the temptation to edit the contributions of the students. Comments like, "How does that fit?" or "Are you sure that's what you mean?" send messages that soon discourage anyone from participating. This is

not the time for discussion or detailed explanations. These can come later. It is appropriate and often helpful for the teacher to add words that he or she thinks might help students understand or use the concept. Figure 3 is a clustered concept map created by a sixth grade class as an introduction to a discussion about global cooperation.

In addition to introducing new ideas and concepts to students, clustering provides the teacher with useful information. For example, it is a great way to discover misconceptions or lack of understanding such as those that often occur in math. For example, a second grade teacher whose children were having difficulty with simple addition and subtraction problems decided to cluster the two concepts, *addition and subtraction.* She found to her surprise, that more than half her students didn't understand what the concepts meant. When she acknowledged in my workshop that "of course, they understand 'more than' and 'less than,'" I suggested that the problem was a language problem not a conceptual problem. Once

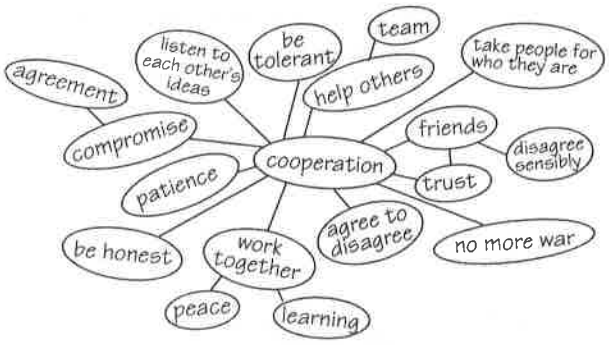

Figure 3. Clustering the Concept "Cooperation"

her students understood that addition always meant "more than," and subtraction always meant "less than," their math scores improved almost overnight. A fifth grade teacher couldn't seem to make her students learn about fractions until she first associated "fraction" with "a part of." I would venture to suggest most of the difficulty students have with math would be eliminated if teachers learned ways to introduce math principles and concepts in simple, understandable ways before moving on to "math facts."

In another workshop, I suggested to a high school math teacher whose inner-city students couldn't understand how to find the area of a triangle, that he try clustering the concept of *area.* He found that while all of his students understood what the concept, *area,* meant, e.g., *turf,* only a few had associated *what they already knew* with the formal mathematical definition that he had been using in class. Thereafter, when he asked students to determine the "turf of a triangle," almost everyone got it right. They knew the correct formula. They just couldn't conceptualize what he was asking them to do. Once he was certain they understood the concept, he reintroduced the formal definition and demonstrated how it was related to their own experience of "area."

Clustering also helps teachers find out what students already know. I have had many teachers share their surprise to find that almost without exception, whenever they introduced a new concept one or more of the students *already understood it.* Based on the clues that other students gain from those who already know it, the students often learn the concept without additional help from the teacher. Following a clustering session, I have found it useful to have the class, either collectively or in cooperative teams, create their own shared definition of the concept. If these definitions need expanding, as with a more formal definition, the teacher can add whatever is necessary to insure that students have fully grasped the relevant implications of the concept.

Since math is often the most difficult subject to incorporate into an integrated curriculum, Donna Stockman's seventh grade team decided to design an integrated unit around three concepts that were being taught in math — reasoning, problem-solving, and communication. In the process, students learned that these concepts are relevant to more than just math and that different subjects — science, social studies, literature, and art — provide a different perspective on each of the concepts. In addition, students learned that just as various subjects have different content, they also have distinctive, though similar, processes.

Concept mapping is also a powerful strategy for helping students understand the relationships that exist among concepts. Joseph Novak and D. Bob Gowin (1984) provide an excellent discussion of concepts and their role in learning as well as a series of suggestions about how to introduce concept mapping at the various grade levels. As with clustering,

concept maps help teachers see how students conceptualize the relationships among the various concepts being studied. Seldom, if ever, are two concept maps exactly alike, and students can learn from each other by comparing their mental models. While there is no such thing as a "wrong" concept map, teachers can often tell when a student is confused about the meaning of a particular concept. Concept maps become marvelous crib sheets for remembering detailed information. After one high school biology teacher taught his students how to make concept maps, they created a huge room-length concept map on a chalkboard. Throughout the year, as new concepts were introduced, they were added to the map. This map became a powerful shared cognitive organizer for everyone in the class and often engendered in-depth discussions about the relationships among the concepts. Figure 4 is a concept map for the integrated unit "What does it mean to be human?"

Perhaps the most effective way to introduce these concepts is to have students "discover" them by studying natural communities. There are a variety of very powerful hands-on activities that provide an experiential introduction to some of these ecological principles. One of the best resources for such activities is Steve Van Matre (1972, 1974). His Institute for Earth Education has developed a series of highly imaginative experiental activities and programs designed to teach many of the same concepts discussed here. At Thompson, teams have often begun the year with field trips to a nearby prairie, a farm, or to the Fox River, which runs through St. Charles. The sixth grade students also participate in outdoor education programs, which are ideal opportunities for students to gain some in-depth understanding of these concepts. For example, Ruth Ann Dunton's team designed a program where students explored five different ecosystems — prairie, pond, marsh, deciduous forest, and pine forest — using the same systems concepts discussed above. Because these principles had been used to frame their studies since the beginning of the semester, students were familiar with them and were able to apply them in a natural setting with ease. Later, in the spring, the students conducted a river study, which allowed them to explore the Fox River from the same perspectives.

Two of the eighth grade teams used a visit to the restored prairie at nearby Fermilab as the basis for an

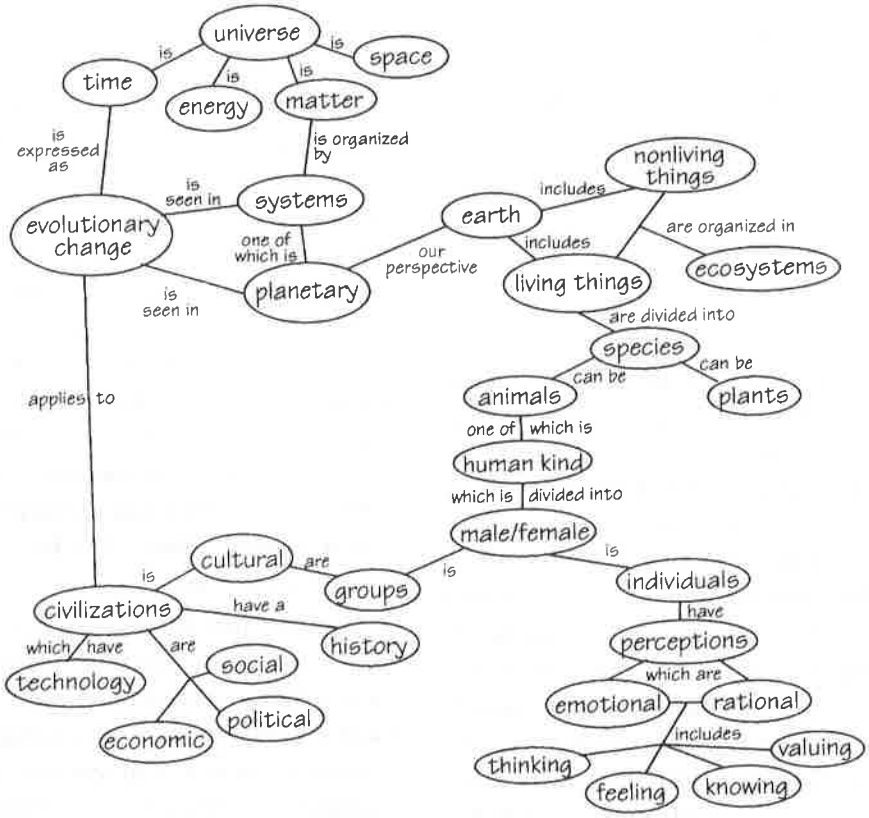

Figure 4. Concept Map for Unit on "What Does It Mean to be Human?"

integrated science unit using the concepts of diversity, change, and structure/function. The purpose of the trip was

> NOT for students to memorize specific facts but instead to internalize the "feel," the "look," the "smell," and the "sounds," of the prairie.... It was exciting to see students of all ability levels apply knowledge and skills learned in the science classroom to the activities they participated in on the field trip — and then to see them bring their field trip experiences into other academic classrooms, e.g., using a prairie background for a play being performed in Language Arts. It was obvious that they had experienced the real thing. The questions generated by our study of the prairie ecosystem were investigated throughout the year and served as sources of additional questions on many different topics.

Conclusion

Given the centrality of concepts in thinking and learning, it is surprising to find that few teachers have any idea of how knowledge is structured or the role that concepts play in thinking and learning as we interpret and make meaning from our experiences of the world. Their ignorance is illustrated by the sixth grade teacher who, in a workshop, shared her concern that students couldn't remember how to do math word problems from one day to the next. They could do them on Friday, but by Monday had apparently forgotten the process. I suggested that they had a problem with concept development. Obviously surprised at my suggestion, after giving it some thought, she agreed. Her response was: What can I do about it?

I have found that once teachers understand how concepts can be used in curriculum design and are then introduced to the ecological concepts, they have no difficulty in identifying relevant applications in their own subject areas. For example, when I first introduced the ecological concepts discussed above to the Thompson teachers, I assigned each faculty team one of the concepts that was written on a sheet of newsprint. Then, with a teacher on each side using a different color magic marker, they brainstormed all of the connections they could think of in their particular subject. After a few minutes, they rotated and, after reading what had been written by the other teacher, repeated the process. They continued the process until everyone had written on all four sides. The result was a colorful collage of ideas all of which, in one way or another, related to the original concept. Not only had each team created a resource for curriculum planning that could be used in the coming months, they had also learned a strategy that could be used in the future both among themselves and with students.

On another occasion, I had the opportunity to work with the St. Charles High School department chairpersons to identify a short list of concepts that could be used as a "vertical framework" by teachers in all disciplines at all grade levels. I asked each participant to list the five concepts they considered to be essential to an understanding of their disciplines. The three that appeared most often were *interdependence, diversity*, and *structure/function. Systems* and *change* were also included in several lists. The process that I began with the department chairs was later expanded to involve other members of the district-wide curriculum committee, which included teachers and administrators from the various levels. A few months later the committee finalized a list of eight concepts that could be used as integrative principles both horizontally across disciplinary boundaries and vertically across grade levels. The eight concepts are: systems, diversity, structure/function, change, balance, sustainability, interdependence, and valuing.

While these concepts have no formal status within the district, they are being used informally. For example, seventh grade social studies teacher Dan Kroll decided to design an entire unit around the concept of *values* and *valuing*. One of the unique features of this unit was the flexible schedule agreed upon by the team. Dan had the students for five consecutive periods a day for a full week. This provides an exciting opportunity for continuity and intensive participation, with some team work and some individual work. When the week was over, students expressed appreciation for the opportunity to study something without the normal interruption that meant starting all over again each day.

Dan first had students brainstorm a list of current social problems, e.g., environmental damage, homelessness, hunger, crime, violence, and intolerance.

This was followed by a discussion of the values that seemed to control the thinking and action which led to these problems, e.g., right and wrong, responsibility, power, greed, sportsmanship, and innocent until proven guilty. Each day students clipped articles from the *Chicago Tribune* and placed these in personal portfolios along with a brief written summary of each issue and related values. The final product was a poster collage reflecting a value message that the student wished to convey with the poster. One girl created a poster on political leadership. She collected pictures of all the world's political leaders she could find and identified them by name and country. Across the poster in bold letters was the slogan, "Would you buy a used car from these guys?" The poster's effectiveness was demonstrated by a lengthy all-class discussion about political leadership in general and some of the world's leaders in particular. In a roundtable discussion at the end of the unit, Kroll found that "students could not believe they talked at home during dinner about the daily news. Even parents were surprised at their comments and maturity on these social issues." Needless to say, students have a much more complete understanding of *values* and *valuing* as a result of the unit.

Whether discussed individually or as a group, because of their universal relevance, these ecological concepts provide a powerful conceptual framework that encompasses all disciplines and all knowledge. Whether one is learning previously constructed knowledge or constructing new knowledge from bits of information, this framework can become an indispensable aid for lifelong learning.

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