ABSTRACT
                 This study examined abilities and conditions necessary to
educate teens for the 21st century, surveying teachers worldwide on:
characteristics necessary to meet 21st century challenges; opportunities and
challenges to realizing those characteristics; beliefs about teaching
practice and curriculum design; visions of an educated teen; and beliefs
about learning communities serving teens. The study also examined related
literature, global reports, and proceedings from two conferences developed
around the survey. Teachers believe students need a broad liberal arts
education combined with specialized skills, real-world learning experiences,
habits of mind, and habits of the heart. They recommend new forms of pedagogy
emphasizing interpersonal relationships, improved teacher training, and
enhanced multiculturalism. They believe that educated teens need involvement
in communities, teachers need training in new developments in pedagogy and
learning, and schools must create learning environments for all students.
Conference participants have similar beliefs about appropriately educated
teens. Educators emphasize the need for whole-systems change in education,
which requires access to information and worldwide teacher collegiality. They
feel that durable reform must reside and thrive in indigenous culture and
community yet allow for access to worldwide best practices, and that
transformational leadership is a necessary catalyst for educational reform.
(Contains 212 references.) (SM)

"Worldwide Perspectives on the Educated Teen for the 21st Century"

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A Research Synthesis of Doctoral Dissertation &
Concept Paper Underlying the formation of

TEACHERS WITHOUT BORDERS

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Fred Mednick, Ed.D

Hay solo una pedagogia...la pedagogia del amor.
(There is only one pedagogy...the pedagogy of love)
Federico Mayor
Director-General, UNESCO

Fred Mednick, Ed.D
Executive Director

ABSTRACT

This study addressed a fundamental question for our time: **What are the qualities, abilities, and conditions necessary to educate teens effectively for the early 21ˢᵗ century?** The research explored essential questions through feedback from surveys translated into and from 14 languages, with teachers in 31 countries; an extensive review of the literature on new developments in education; global reports; and proceedings from two conferences developed around the survey.

The study synthesizes the research into three conclusions: (1) a consensus on the need for whole-systems change in education (2) the durability and sustainability of reform grounded in culture, with access to "best practices" especially those made available through developments in technology (3) the wide agreement on the need for transformational leadership. An auxiliary finding is strong evidence for the presence of third-world research in this field. A set of policy recommendations are provided, along with one implementation model that reflects these conclusions. The model chosen as an example of many, extends U.N.E.S.C.O.'s Delors' Report into the realm of implementation and practice. Again, numerous models are possible.

This study has raised and illuminated tensions between the traditional and the modern; the haves and have-nots; between education for the short or the long term; education for utility and education for its own sake; the center of focus on the child or the subject matter; the debate over depth or breadth; the inculcation of civility and citizenship or training for a career; the inspiration of intrinsic and the lure of extrinsic motivation; the place of informal or formal education; the attention to process or product; cooperation or competition; the person and the package; the battle between quantitative or qualitative assessments; the debates between the purposes of education in order to maintain a national goal or to develop an individual voice.

We have approached educational reform through quick fixes or through the additional of curriculum: the what. Research into how and why students learn is shedding new light on different conceptions of education. This study enhances, clarifies, and extends these notions to a new world of possibility — where and when students learn. Though no study of this sort can be exhaustive, it provides direction for urgently needed educational reform in a post-industrial, "information" age.

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GLOBALITY AND OUR CONTEMPORARY CONTEXT

The new millennium has been portrayed as the world's first shared enterprise; it is certainly one of the biggest growth industries of recorded time. We are inundated with books, and articles, websites, software and Y2K kits, weekend retreat and three-day emergency supply packages. Whatever way in which we perceive this symbolic event – a squint at a brilliant horizon or an anxious peer over a dark abyss – the calendar date is months away. Some view the four-digit change with unbridled enthusiasm, as a symbol for the age of opportunity; those who ascribe to this view are ebullient about how data flows freely, borders and boundaries disappear, and the world works seamlessly - at warp speed - with instant consensus and information access. At another extreme, this imminent future is viewed as some kind of apocalypse, including a great deal of fire or ice, as Robert Frost would claim; here, global capitalism and consumerism are accused of having been made palatable for unsuspecting masses, masked shamelessly by a para-mystical rhetoric and a promise of freedom.

We must acknowledge the impact of globalization on one's local community. "No longer the exclusive domain of governments and multinational enterprises, nongovernmental organizations (private, usually nonprofit, organizations with citizen involvement), township administrations, local associations, even individuals participate in all sorts of worldwide exchanges and joint undertakings." (Chelimsky & Shadish, p. 161). In the United States, the most diverse country in the world, cultures hitherto unknown are commonplace. No longer in continental cocoons, "we all live on a new commons where we rub shoulders with people practicing different customs, holding different ideas of what it means to be human." (Daloz, 1996, p. 48; Gleick, 1988). "20 percent of the gross national product (GNP) in western industrialized countries goes to producing, and distributing knowledge via education, on the job training, and research and development (Davies and Guppy, p. 439).

Different cultures and peoples have begun to interact with unprecedented frequency and intensity (Thiesen, 1997, p. 401). At all levels, societies are undergoing massive economic, technological, ecological, social, political transformations that challenge traditional values, beliefs, and institutional arrangements. With the increased mobility of migrant labor across national boundaries, societies with a multicultural or plural cast are becoming more and more a normal feature of the global landscape. The long term Turkish 'guest-workers' in Germany, the growing Vietnamese communities of Australia, and the increasingly visible

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African (northern and sub-Saharan) presence in France are all indications of an worldwide trend (Duster, 1997, p. 263).

Many of our older social contracts have dissolved. As the world both shrinks and transforms, as information access becomes a commodity and a necessity, analysts urge us to think in new ways, to solve problems collectively, to create new paradigms (Abernathy, 1995, p. 62; Csikszentmihalyi, 1993, p. 275). The body of knowledge has exploded, multiplying upon itself at a logarithmic rate. According to a major Internet access provider, "Experts forecast that by the year 2010, the world's knowledge base will double every 70 days" (Lederman, 1999, p. 56). We are asked to make sense of it, to integrate it, to distinguish between the falsified and the real, the substantial and the unsubstantial.

Again, we do not know whether such worldwide familiarity will breed contempt. The assumption of the demise of the nation-state may be premature. We do not know if trading partners may suddenly become enemies, especially if sensitive cultural issues are ignored. A magnanimous vision of global connectivity might also be countered by an opposite reaction, ranging from actions to protect ethnicity from outside degeneration to an active resistance to anything hinting at modernization.

> It turns out that all the New Age collegiality was fleeting, or maybe just overstated. It was an afterglow of the end of the cold war, not the light of the future...an interplay of old national interests and new centers of power has made the process much more complex and unpredictable (Sciolino, 1997, p. 3).

Though the impact of the phenomenon of global connectivity on politics is unpredictable, it has nevertheless coincided with the phenomenon of innovative thinking in science, in which quantum physics, chaos theory, and biology serve as models for thinking in a post-industrial, post-modern world (Jaworski, 1996; Zohar, 1996; Barkow, et al., 1993). Margaret Wheatley writes: "our mental model of the way the world works must shift from images of a clockwork, machinelike universe that is fixed and determined, to the model of a universe that is open, dynamic, interconnected and full of living qualities" (Wheatley, p. 64).

Many acknowledge a shift from the mechanistic to the ecological, from a concentration on parts to that of the whole, from the reductionist to the systemic, from analysis to synthesis, from the subatomic as tiny and distinct "things" to the complex web of relationships and connections between them (Capra, 1996). "The late twentieth century will be remembered in the history of science as the time when particle physics, the study of the small-

est structures in nature, joined forces with cosmology, the study of the universe as a whole" (Naisbitt, 1994, p. 12; Ferris, 1989). Contemporary business thinkers have opened the arena of thinking about the role of the new science and new global business mentality in the development of a new human being - even a new social order - for the new millennium. The impact on the individual is tremendous; one may now think locally and act globally.

These massive worldwide changes are in themselves all interconnected, and may reflect the move away from the analytical and reductionist era in science towards the beginning of a more synthetic, integrative and interwoven understanding of natural phenomena, social structures and the operation of organizations. We now understand more about the brain and how it grows; the mind and how it shapes itself; and intelligence and how it expresses itself. Indeed, we now have a radically different picture of how life emerged, evolved and continues to change as a result of this interwoven web. The significance of collaboration, diversity and continuous learning within organizations is becoming increasingly essential. It is not so much new research that is needed, but making sense of that which is already known, and applying this in ways that are not constrained by pre-existing and outdated institutional arrangements. (Abbott, 1996, pp. 6-8).

The ease with which knowledge can be transported has opened enormous opportunities for places around the world that once were considered far from the economic action -- whether Malaysia's Multimedia Super Corridor, or the telemarketing center in New Brunswick. Teachers collaborate on rain forest projects by testing biologically diverse conditions at their site and comparing data. "The communication highway that will skirt the globe via New York, Tokyo, Shanghai, and Bangalore has come to be a compelling accelerator and intensifier of cross-cultural currents on a global scale." (Vari, p. 13, 1996).

Such challenges are factored in with enormous changes to the globe itself. We are taxing our natural resources (fossil fuels, agriculture, fisheries, forestry, atmosphere). The world's population is exploding. Demilitarization is occurring, yet the world remains mired in political upheaval and political factionalism; whole economies flourish and collapse. Third-World debt is at its highest point in a generation. Somehow, qualitative educational goals need to be established in order to create a populace able to cope with massive change. Either vision impels us to make decisions about how to live in an ecosystem of diminishing resources; how to harness science for human good, how to make sense of the age in which we live (Land, 1992).

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The new information and communication technologies have reflected advances promoted in developed countries, but developing countries are feeling the effects of, and making more and more advances to, the information age. Today, the number of Internet users is growing more quickly in developing countries than in the developed nations. In Africa alone, 44 of 53 countries have full Internet access and the most sophisticated national networks in the world are in Djibouti, Rwanda, the Maldives and the Solomon Islands, where 100 per cent of the telephone lines are digital. In 1998 and 1999, WorldSpace, a private foundation, plans to launch satellites that will provide up to 200 channels of radio coverage over each of the continents, reaching the most remote areas of Africa, South America and Asia (Casell, 1995).

THE URGENT NEED FOR EDUCATIONAL REFORM

In this modern era, what does school hold for teenagers? The gap between the information and resource haves and have nots is staggering. Some young people attend rarified private schools. Some do not go to school at all. One participant in this study in Yugoslavia longs simply to gather teenagers together to learn, in safety, regardless of the school's philosophy. Others here in America or abroad are wearing Japanese Walkman(s), listening to America's Madonna, and carrying Russian or Chinese rifles poised for guerilla warfare; some in America succeed against all odds, others fail despite huge resources. Some go to school each day with an aching sense of vulnerability in an era of unprecedented school violence; some teens attend class up to a certain age or time in the day, then go directly to work, whether it be in a factory run by a world-wide mega-merger, or out in the fields. Many teenagers are increasingly barraged by a 100-channel paralysis. They reflect the rapaciousness, violence and anomie of modern life, yet they also exhibit extraordinary, selfless acts of human courage, alacrity, creativity, and kindness. We need to ask: "What do they need to meet the challenges and opportunities that lie ahead?" "How can these children, in turn, raise the village?"

Educators around the globe acknowledge that the challenge of these times is upon them. Teachers in remote regions hitherto untouched represent an enormous — and largely untapped area — of resources, for now the educational arena is challenged and enriched by new thinkers in countries largely dismissed. The future in education will be shaped, largely,

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by these new, profound phenomena. In *Shadows in the Sun* (1998), David Wade's book about indigenous ways of knowing:

> After half a century of profound change, what, indeed, is tradition? How can we expect a people not to adapt? The Inuit language is alive. The men are still hunters. They use snares, make snow houses, know the power of medicinal herbs. They also own boats, snowmobiles, television sets, and satellite phones. Some drink, some attend church. As anthropologist Hugh Brody points out, what must be defended is not the traditional as opposed to the modern, but, rather, the right a free indigenous people to choose the components of their lives (Wade, 1998, p. 25).

"The 1980s and 1990s have seen many different countries radically reorganize their state-maintained schooling systems (Walford, 1996, p.3; Giddens, 1990; Riel, 1990)." Words such as "restructuring," "decentralization," "educational perestroika," "local legitimization" characterize school reform efforts worldwide (Conley, 1991; Bessard, 1993; Westbury, 1989).

Howard Gardner's *The Disciplined Mind* (1999) reflects this wider, global perspective:

> Whether I am traveling in the United States or visiting Europe, Latin America, or the Far East, I find a surprising consensus: the belief that the quality of a nation's educational system will be a chief – perhaps the chief – determinant of its success during the next century and beyond. (Gardner, 1999, p.13).

Mirroring new developments in science and emerging concepts of interdependence, many assert that education is not finite but dynamic and that learning is does not emerge from mirroring the machine but an organism (Newton, 1990).

Reformers are studying brain research, learning modalities, experiential education, collaborative curriculum planning, and the benefits of teams (De Cuevas, 1994, p.37; Steinberg, 1997). Others contend that emotional intelligence – one's street savvy and social perspicacity – leads to success; schooling may, in fact, obscure this native ability (Goldman, 1996). Perhaps Mark Twain was correct, one-hundred years ago, when he wrote that schooling should not get in the way of one's education. For better or worse, this new age has implications for education at a given nation's local level.

> Researchers and practitioners claim that outmoded notions of education as a *quantity* of knowledge to ingest and retain have given way to new paradigms, new *qualities* of thinking: the capacity for independence of thought, creativity, applicability, and the ability to work with others (Lightfoot, 1993; Estrada & McLaren, 1993).

These new approaches to curriculum and pedagogy do not belong to one country or culture alone, but are sweeping the worldwide landscape (Lawton, 1992; Weiler, 1990).

A learning community is emerging on the Intenet, where 'Cyberia' could re-place schools as the focus of education reform...'Cyberia' is intended not simply as a new name for information technology in the late twentieth cen-tury, but to suggest that science and technology have become a dominant source of culture itself" (Lyman, 1997, p. 299).

A recent UNESCO report claims:

The information explosion is shaping the future. Education specialists and authorities around the world recognize that new information and communi-cation technologies have great potential for revolutionizing education sys-tems and improving learning, but warn against social exclusion. *EFA 2000* explores the new trends. Imagine a group of Bangladeshi women negotiating market prices using their mobile telephones, farmers in Mexico discussing their problems via Internet in rural community telecentres, or teachers in re-mote areas in Indonesia, for whom libraries have at best been a dream, using satellite technology to surf the Internet for new books and teaching methods. These are not visions for the twenty-first century, they are today's reality (UNESCO, 1996, p. 6).

Certainly, some see the Internet as another fabulous marketing strategy for the West. Yet even as the debate rages whether the Internet is a "liberator" or "capitalist plot," a tool or an end unto itself, the Third World is getting on line. The implications for education are tremendous here, too.

John Abbott, of 21st Century Initiatives, writes about how Rodin's *The Thinker*, the solitary individual working out the hard problems, has dwindling relevance in our digital world (Abbott, 1994). The conversation around virtual schools centers on a reconstructionist orientation, made possible by the Internet and other forms of distance education (Noden, 1995; Zukowski, 1995) and have raised questions about new architectures for learning, new pedagogical approaches, new ideas for human resources, and a transformed curriculum.

Reformers have yet to assemble and make coherent a practical, culturally-grounded framework, in which the best of tradition and indigenous ways of knowing meet the best of the modern world (Cuban, 1990, pp. 2-13; Turner, 1998). They must confront established norms, cultural mores, government intrusion, and general resistance to change. In both de-veloped and underdeveloped countries, the impact of the change efforts in the last fifteen

years are described as "slow," "haphazard," "spotty," "inconclusive," "quixotic," and "restless" (Berman, 1989; Bespalko, 1996; McAdams, 1993; Tucker, 1993). The have-mores remain successful and the have-less are increasing in number. Though recent technological advances may develop the potential for students of diverse cultures to develop skills to solve problems and think creatively, the evidence is not yet substantial enough to demonstrate long-term results (Goldberg, 1995).

At the very least, educators worldwide might need to think in terms that not only serve their locality, but also transcend their geographic boundaries. Educators must discover what educational shapes are needed for this global state in which transactions move between cultures at the speed of light. They may have to evaluate the impact of the United States on their own culture, what of their own culture must not only endure but prevail, what their people need in order to be educated and prepared (Butts, 1980). Of course, this "imperative" is based upon an assumption that the changes urged so earnestly accurately depict an emerging future. They are confronted with the question: How can educators, at the dawn of the 21st century, merge adolescence (again, *adolescere* - to nourish, to fuel, to burn, to kindle) and education (*e-ducare* <Latin: e-out +d ucere, to lead, draw bring>) within the context of a new millennium?

Educators must make decisions about how to educate, how to organize learning, and how to prepare young people for a world that is dynamic and accelerated, for a world that cannot wait (Goodlad, 1984; Perlman, 1993). Though the evidence for world-connected, world-influenced educational settings is growing, *it also remains to be seen whether schools, even in urban settings, will adopt this global sensibility for the long term and be informed by a set of philosophical qualities that can inform the work.* Such efforts, certainly, must be approached from the standpoint of a contextual, organizational, and cultural analysis of how change takes place within educational settings. Some will plunge in. Others may take a reluctant, even resistant position in reaction to a history of failed reform efforts that have contributed to cynicism (Scheerens, 1988). Highlighting the tensions, schools may turn into vehicles whose primary mission is the transmission of national and cultural orthodoxies, rather than flexible structures able to adapt to new demands and challenges (Ogilvy, 1995).

A NOTE OF CAUTION: LIMITATIONS OF COMPARATIVE EDUCATION

Change agents must proceed with caution and understand the research tradition of comparative education in order to determine how best to benefit from research findings. The task, however, is not easy. The study of culture itself is problematic because it is impossible to enter into the skin of another. This study evaluated (1) basic premises of culture (2) the affects of modernization on culture and the education of adolescents. The degree to which rudimentary anthropology is needed is the degree to which educational research in a cross-cultural setting requires skills in the art of seeing through the lens of culture (Wolcott, 1980, pp. 56-59).

Furthermore, in the worldwide arena, language barriers can make the translation of meaning difficult as well, and so the next generation of cross-cultural researchers must continue to struggle to ascertain the reliability of such studies, as well as the accuracy of language. The interpretation of the questions, on the part of participants, may differ from mine. In like fashion, my interpretation of the answers may differ significantly from the interpretation of another researcher.

One cannot generalize conclusions from one nation to other nations, for the context of each setting shall determine the nature of responses. Comparative or cross-cultural analysis is difficult work, many claim, because we always run the risk of "parasitic research conducted on a hit and run basis which neglects the meaning of the social context" (Musgrove, p. 3). One must be extraordinarily conscious of and highly sensitive to criticisms of work that attempts to apply one standard of thinking to another culture. Though Margaret Mead's studies in the 1930s place her in the arena of household names, her methods have been, under a contemporary lens, viewed as flawed. Therefore, attempts at pinpointing the defining characteristics of any society, nor its predilection for one or another quality of an educated person, must come under scrutiny. One must acknowledge the degree to which the values of one culture (in this case, mine) are being used to judge the values of another culture. Anthropologists argue that the discontinuity of cross-cultural research is so great that meaningful comparisons cannot be made at all. (Bierstedt, 1948, p. 54; Beattie, 1966, pp. 46-48). Some representatives of the countries in the study responded in highly personal ways, others with ritualistic answers; some wordy, some not at all. However wide the variations, the extrapolations are possible, instructive, and directive for even greater research.

When anthropology meets education, each culture under study will determine, to a significant extent, the nature of choice when approaching issues of abilities or characteristics of the educated teen for the 21st century. Transitional groups are different from traditional peoples. First World groups are different from each other, as much as they are different from Third World groups. Sub-cultures who are, in turn, different from each other are different from mainstream cultures. Some cultures are linear, others circular. "The Eskimos are far-ranging hunters over a featureless landscape who are reared to be self-reliant, independent, and resourceful; the Temne are sedentary cultivators in tropical West Africa who are reared to be cautious, conforming, and docile." (Musgrove, p. 44). These two groups may not have much in common when determining educational vision, but a great deal to offer in providing data for what they value, what they strive for, what is in their way, and what is successful.

Research of this sort must acknowledge biases in the questions themselves, cultural mores in terms of responses to the questions, and difficulties with cross-cultural coding and analysis of data. The way one structures questions is directed by philosophical assumptions, assumptions which are by and large only vaguely and implicitly held by the researcher but which, in spite of that and often because of that, are powerful directive forces in the structuring of the research. (Rosenthal & Bucholz, 1995, p. 26).

The reporting of findings in anthropology and comparative education often separate text from context. "Culturally absolute claims dissolve into their own ambiguity because they are broken out of their claim to absolute embeddedness" (Young, 1999, p. 3). It is fitting, then, that theoretical resources value difference and commonality simultaneously, contradiction without an automatic goal of resolution, and the ongoing struggle between determining that which is relative and that which is universal. The detachment thus carries its own limitations for the researcher by the very nature of reportage itself.

Within the context of current writing about contemporary educational issues, words such as "post-modern" are often thrown around more as fashion statements than as useful descriptors of trends and patterns synthesized from global feedback research. Such proclamations assume rather gratuitous empirical claims. Such an approach toward comparative education is especially dangerous, for the design of educational experiences for youth should be based in a thorough array of methodological approaches. The study itself is limited by its geographic choices, the particular contexts of each setting, the size and scope of the project,

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and the possible biases of the questions themselves, however broad they are in scope. It is also essential that any study of this sort acknowledge the limitations of dialogue, culture, power, identity, the danger of absolutism, and the paradoxes and contradictions of both qualitative and quantitative methodological research itself.

A study presumptuous enough to take on global education, then stir in futurism is subject to enormous criticism. It is important to inject such notes of caution. The tensions I describe (tradition and modernity; the traditional vs. the modern, the focus education for utility or education for citizenship view the world as polarities, contradictions to be resolved. Most cultures, however, do not necessarily view the world as a set of conflicts that need resolution; many see tensions as part of the dialectic that accompanies any idea.

It is essential that a study of this sort, which clearly points toward a predilection for regeneration, not contradict one of its essential findings – the importance that culture serve as the fulcrum around which change takes place; that a notion of time is different from culture to culture; that the orientation of the researcher not take on the destructive extremes of which comparative education is susceptible, namely those that seek to establish hegemony or competitive dominance.

There is a danger, too, of ebullience and liberal possibilitarianism. Such a danger assumes that all things are possible, all societies are striving for democracy, all intentions are positive – future eerily aligned with American liberal, Dewesque philosophies, unencumbered by the manifold intervening variables and pressures governments both face and apply to educational settings. It may very well be that – again – such an orientation is misguided. There is no evidence, even, that increased participation, or even increased levels of education indicate a greater sense of democratic involvement in society as a whole (McGinn, p. 346). The intangibles are numerous, the speculations perhaps implausible or incomplete. Besides, many futurists are viewed as seers or cynics, cracked or quacks. However, the findings point us in a direction we cannot avoid.

CURRICULUM OPTIONS

From the period after World War II through the 1980s, scholars have identified a general rubric for understanding the various threads that have characterized curriculum design options (Shane, 1981). They included:

1)   *The regressive option,* in which fundamental values that may have been discarded are reintroduced. Here, national goals or concerns may impel a change to return to traditional frameworks (Whitehead, 1929). Largely, this impulse is driven by fears that contemporary access to degenerative moral experience attenuates motivation and intellectual rigor.

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2)   *The conservative option*, in which the curriculum is left alone. Largely focused on literacy, this approach maintains that education – for the most part – should transcend the vicissitudes of whim and that a nation and the individual school shall have a standard, generation to generation. Though they acknowledge a changing society, the instructional design and orientation mirrors those of the Renaissance Humanists, even a Platonic spirit, in which a body of material is to be mastered.

3)   *The liberal option*, in which changes are "mandated by a changing society" (Shane, p. 9). This approach recognizes the diversity of learners. Within the context of comparative education, liberal options are exercised within the context of "keeping up" in a competitive atmosphere. Research has indicated that such options are exercised without a concomitant look at its impact on culture (Jones, 1988).

4)   *The experimental option*, in which new learning experiences are conceived and designed. This approach intends to acknowledge the intellectual contributions of educators to create novel approaches to the improvement of teaching and learning.

5)   *The regenerative option*, in which new approaches and structures for learning are developed. This option implies the creation of learning environments that meet present and changing needs (Eisner, 1996, 1997; Dewey, 1921) This approach is the most radical and assumes a fundamental reexamination of assumptions, leading to completely new or radically different forms. The Progressive movement in the United States was an example of regenerative options, developed by educators and philosophers who resisted the claim of dehumanization in light of an expansive industrial movement (Dewey, 1938; Jervis & Montag, 1991).

6)   *The eclectic option*, in which any combination of the above approaches is chosen. Such options encompass a range of responses to pressures and influences and a system flexible enough to make those changes rapidly.

All options have addressed the degree to which cultural values are transferred within a given required curriculum and also reflect the prevailing philosophies of the day. Concordant with their philosophical roots, *King Lear* can be taught from a number of perspectives. A teacher may choose this piece of literature because it is part of one's essential cultural and historical tradition. The play may be taught to ensure that students know how to read complicated texts. Another teacher may choose *Lear* because one should know the text for its own sake, as a classic worth knowing. Perhaps the play must be read because Lear's daugh-

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ters represented various forms of thinking in which the text itself serves as an expansion of one's thought processes. *Lear* could help a student with self understanding. The play itself can teach young people about howling rage and moral conflict.

The options and directions chosen reflect a current state of affairs along with an orientation toward the future. Policy planners, government authorities, and educators have created, and been flooded with, future scenarios that ask large questions about the nature of human life in a new millennium. Such views are considered, in broad terms, in order to provide a framework and orientation in the midst of enormous global flux.

FUTURE SCENARIOS

The popular and scholarly press is flooded with narratives about an attractive and compelling future, but it is tough to reflect its consequences using an existing global model. Both quantitative and qualitative methods must be employed. Using global models to add quantitative rigor to exploratory futurist scenarios carries some dangers (Ogilvy, 1992, pp. 5-62; Schwartz, 1991). Furthermore, when complex models are used, it may be impossible to trace cause, effect, and the consequences of feedback. The results of quantitative models may be used to add numbers to scenarios but may have little impact on scenario explanations that trace from the present to some future condition (Wilkinson, 1995). Numbers derived from computer models often carry more weight than they should since decision-makers may believe that precision implies accuracy. The results of qualitative models run the risk of capriciousness and political agendas (Weisbord, 1992; Tapscott, 1996; Barker, 1992). Despite widespread speculation – or skepticism - scenario planners have evaluated numerous variables that drive scenario development (World Future Society, 1996, pp. 3-6; Elgin, 1999):

- communications technology (from vibrant to stagnant);
- crime (from massive concern to contained);
- degree of globalization (from free trade to isolationism);
- degree of harmonization (from shared standards to ad hoc);
- economic competitiveness among nations and companies (high to low);
- economic vitality and overall global economic activity (from high to low);
- government participation in society (from high to little);
- individual health (from greatly improved to deteriorating);
- leadership (from inspired and effective to dismal and ineffective);
- pollution (from disastrous to being cured); ecological health (from conscious to unconscious, constructive and destructive);
- population growth (from high to low);

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- resource availability (from abundance to scarcity);
- projections to year 2025;
- rich/poor gap-within and among countries (from widening to narrowing);
- social focus (from individualism to community);
- technology (from vibrant to stagnant);
- terrorism (from major concern to benign);
- the status of women (from improving to stagnating);
- threats to global security and/or quality of life (high to low);
- wars (from volcanic to quiescent);
- stability and effectiveness of governance systems;
- social focus and cohesion;
- quality of life indices;
- degree of connection to other systems;
- levels of nationalism and adherence to religious practices;
- regional conflict resolution

Each of these issues reflects a series of tensions that reflect a fragile interdependence. One issue can easily transform into another. The following scenarios may serve as the context in which to see the range of contemporary futures forecasting. All have bearing on the choices made by educators and government officials. The future scenarios are charted, below:

Concept	The Future Is Bright	The Future is Complex	The Future is Simpler	The Future is Dark
Economic Growth	+ utopia; distribution of money helps all; McWorld	+ haves vs. have nots	– recession = resistance to "progress" determined in economic terms	– dystopia; overpopulation & depression; wide currency swings
Technological Progress	+ pervasive, inclusive access; cybertopia	+ digital divide	– glut exceeds need; systems breakdowns	– active, terroristic resistence
Globalization	+ freedom is expected; democracy; liberty	+ open markets & access; disruption of indigenous culture	– return to locality, customs of simplicity	– destabilization; Jihad
Psychological, Ecological, Spiritual Development	+ communitarianism and global social contact; environmental caretaking	– benefits (technology, power) for the "developing" or "developed" world; concerns about environmental degradation	+ attention to planet, self, community, perhaps at expense of "progress"; reclaiming the past	– clan/Klan; everyone for her/himself; backlash (religious, ethnic, national); group rights prevail over individual rights; neo-fascism and fundamentalism; revolt and devolution
Implications for education	Regenerative	Liberal and Experimental	Conservative	Regressive

No scenario is comprehensive, but rather a set of interweaving – and interdependent variables and paradoxes. These scenarios reflect the impulses and tensions that exist in the modern world, synthesized from a review of research in contemporary surveys, conferences, and research reports (Spayde, 1998, pp. 42-58; Sunter, 1992; Barnett, 1994).

In the scenario: "The Future is Bright," all factors (above) contribute to a society in which technology is pervasive and interwoven with other forms of human connection and interaction with ever-expanding community networks. In "The Future is Complex," expanded economic and technological progress, on a global scale, lead to a division beween those who benefit and those who suffer; between tradition and modernity; between the information haves and the information have-nots. "The Future is Simpler" presages an economic, global downturn; technology has reached its peak and either loses its novelty or breaks down, evidenced most recently in reactions to the potential of collapse as the world faces the fallout from the Y2K syndrome; world citizenry begins to focus its attention on simpler, more time-tested means of conducting daily life. "The Future is Dark" represents a worse-case scenario of faction, feudalism, and fear, in which the strongest shall prevail. All such scenarios, and the degree to which they are taken seriously by government authorities, have bearing on how schools are designed, what is taught, and how they are funded.

SURVEY QUESTIONS/FINDINGS

Participants were identified via the Internet, with the support of U.N.E.S.C.O. and other international agencies. They consisted of teachers, with access to teenagers and the Internet, predominantly residing in cities. The findings reflect three completed surveys of 38 educators in 31 countries. The surveys were translated from and into 14 languages. Each round was summarized and sent to participants so that they could maintain an independence of thought as well as a collaboration with other thinkers. The questions follow:

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First Survey	Second Survey	Third Survey
• What are the five abilities or characteristics necessary for youth to meet the challenges of the early 21st century? • In what order would you place these five abilities or characteristics? • What are the opportunities you have to realize these abilities or characteristics? • What are the challenges you face in order to realize these abilities or characteristics? • What is your opinion of this first round of questions?	• After having read a summary of the responses of your colleagues, would you like to re-evaluate any of your responses to question #1 of the first survey? • After having read a summary of the responses of your colleagues, would you like to re-evaluate your teaching practices or those at your school? • After having read a summary of the responses of your colleagues, would you like to re-evaluate your curriculum design and/that of your school? • If you believe that the structure of education for adolescents must be re-evaluated, please identify three directions you would undertake.	• Has your vision of an educated teen changed since you have been involved with this study? If so, how? • After having read a summary of the responses of your colleagues, what conclusions might you make about a vision for learning communities that serve adolescents? • What would you like to add to this conversation?

FINDINGS of the SURVEYS

Survey #1	• Students will need a broad liberal arts education, combined with the skills necessary to take on a specialty • Students need real-world learning experiences • Students must develop habits of mind, including social/emotional competencies and a disciplined work ethic • Students must develop habits of the heart, including the moral, spiritual, and cultural competencies that can help them develop a sense of self, participate in a global environment, and to care for others

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Survey #2	• New forms of pedagogy must be developed that emphasize the importance of relationship of teacher and student and students to the material. • Pedagogy must be transformed in order to enhance inquiry; technology must play an important role for inquiry learning and problem-solving. • Teachers need new forms of training – schools of education need change • Curriculum is both explicit and implicit, and so the environment of the classroom and the school must be considered. • The community around the school setting should be considered an essential part of the learning process and curriculum. • Curriculum should address new needs in science and mathematics, along with components of spirituality and morality • Multiculturalism is not limited to curricular change or inclusion, but extends to the actual and symbolic representations of inclusive structures of the school itself and an awareness of the world's people • Change in learning communities often meets with commitment, compliance, and resistance; it is therefore incumbent upon educational leadership to facilitate effective and durable change. • Indigenous arts must be respected and celebrated
Survey #3	• Acknowledging the pervasive character of the "information-access" age, we must educate for a "global teen." • Innovation must consider both the formal and informal structures of schooling, even a re-evaluation of assumptions about the nature of school itself • An educated teen must have access to and substantial involvement in the community and its resources • Teachers must be trained in new developments in pedagogy and learning. • Schools must engender a spirit of experimentation, intimacy, and accessibility • Schools must create learning environments for all students • Leadership in schools must be transformational and cultural • Innovators must enlist the resources of government, business, and the community.

GLOBAL REPORTS

These reports included papers and policy statements from U.N.E.S.C.O. and the World Bank, as well as governmental and non-governmental commissioned projects. U.N.E.S.C.O.'s Delors Report and the Pacific Basin Consortium are the most germaine. The findings can be found below:

- _Learning to Do_: the development of effective skills for economic sustainability. The educational dimension caters more for the individual needs, abilities and potentialities, while the economic development dimension caters more for societal needs, and employment requirements.

- _Learning to Be_: independence and judgment combined with a stronger sense of personal responsibility. Particularly strong is the need to bridge tradition and modernity; the universal and the individual.

- _Learning to Know_: education for globalization and increased interdependence; an awareness of, and planning for, a new content of learning or what to know; a different process of learning, or how we learn; and – most significantly – the awareness that all learners are different. Essential, too, is the importance of bridging the "digital divide" between information haves and information have nots.

- _Learning to Live Together_: a "learning society" and "caring society" considers men and women as truly human social beings who can in harmony not only among themselves, but with nature, and the global environment.

PACIFIC BASIN CONSORTIUM

The "Pacific Basin Consortium: Building an Educational Community" (1996) focused on the importance of community as a central feature in educating youth for a new century. With corporate and foundation support, the conference addressed the Polynesian words: No Na Mamo (For the Generations). Its intention is to create a worldwide dialogue about, and celebration of diversity around, the educational issues and challenges that lie ahead for youth in the 21st century. (Pacific Basin, 1996). This organization is a joint partnership of public and private schools. In its reports, teachers have addressed questions such as: How do we work together for the sake of children, children who live in a global community? How do we come together despite differences of place and culture? The Consortium founders use metaphors from Polynesia to illustrate the notion of navigating:

> ...on the voyaging canoes of today and yesterday, the task of deciding which path we wish our children to travel, and the task of increasing their capability to find their way. If educators of the 20th century talked of forming connections with one another in spite of differences of culture and heritage, Pacific and Asian educators of the 21st century will form connections because of a respect for each other's diverse and proud heritages (Pacific Basin Consortium, pp. 6-7).

The issues explored address the role culture plays in the education of youth; how an educated person is of value insofar as s/he has gained the ability to make a contribution to society – as farmer, fisherman, builder, or navigator. This contribution, for a new century, extends to an ability to function in other cultures of the Pacific and the world. The direction of research and attention to children's healthy development focuses on the following areas:

PACIFIC BASIN CONSORTIUM/FINDINGS

1. The development of competent and sound people who can keep up with socio-economic change, cope with unforeseen problems, prosper personally and economically, and can contribute to a democratic world"

2. The ability to embrace curricular change based on educational research such as brain development and the needs of a global community

3. The ability to integrate qualities of heart and spirit, as well as qualities of the mind and developing capabilities

4. The ability to develop a literate worker with competencies in technology

5. The ability to understand interconnectedness of people and the environment, and to make contributions in order to enhance the quality of life

6. The power of communication in language(s) other than one's own.

INTERNATIONAL CONFERENCES/FINDINGS

Schools in the United States and India used the survey questions to hold day-long conferences on the qualities of an educated teen for the 21st century. Their findings were:

- Educational policy change must be accompanied by wide-spread local support; work must be done with governments to see the value of open learning communities.

- Both the implicit and explicit, formal and informal features of education must be considered in reform design.

- Culture must serve as a base of strength, allowing for a spirit of experimentation and regeneration.

CONCLUSIONS

The analysis of findings in this dissertation lead to **three conclusions:**

1. Despite significant differences in orientation or circumstance, educators in this study corroborate the review of literature that identify an agenda for whole-systems change in education in order to bring about the qualities and abilities they have and will identify. Such change requires access to information and its concomitant benefits of worldwide teacher collegiality.

2. Durable educational reform must reside in and take strength from indigenous culture and community, yet allow for access to worldwide "best practices."

3. Transformational leadership is widely perceived as necessary as a catalyst for educational reform.

Conclusion #1: Whole Systems Change

Educational reform must integrate the abilities and characteristics of an educated teenager (determined locally or nationally) into a larger, coordinated rubric of practices. These practices must encompass the school as a community and the community around the school. Former attempts at educational change or reform have largely been focused on curriculum and – more recently – with structural or pedagogical developments. Nevertheless, they have been largely unsuccessful because they are isolated.

It may be, that rather than learning how to patch up and improve conventional schooling, the conclusion from [international] research is that the existing styles of management and administration for schools and classrooms are not suitable for the late 20th century. Such factors as the uncertain nature of knowledge and the increasing emphasis on skills, the rapid pace of change, the introduction of new information technologies, the need for flexible, adaptable and independent human beings and the sheer demand for education may require considerable changes in the way schools are organized. It may be that in going back and asking basic questions about what really happens in schools we also end up asking basic questions about what schools are really for and what sort of human beings they are trying to

create. The answers are likely to be quite different from existing reality (Harber, 1992, p. 169).

The broad outlines of reform should include: new relationships between young people and the adults in their communities, replacing the isolation from real life that makes current schools so ineffective; much greater investment in the personal, social, and intellectual development of young children; the assumption by adolescents and young adults of greater responsibility for their own learning and for contributing to their communities.

Such a rearrangement of priorities requires a major redistribution of and awareness of new resources, as well as a fundamental shift in the way in which schools, even learning itself, are conceived. In an information age, schools of and for the future may no longer look the same or even reflect a common philosophical or policy structure. Organized around learning, they may reflect a new cartography of knowledge and learning. New learning communities may take place in traditional buildings, but with an entirely new internal structure. Some may not take place in one place alone, but in cafés, marketplaces, hospitals, community centers, aquariums and museums, workplaces, shopping malls, on-line. Technological literacy may assist as a bridge across the "digital divide," allowing for communities hitherto marginalized to find a voice and to develop the tools to transform themselves.

In 1980, Alvin Toffler's *The Third Wave,* the sine qua non of contemporary forecasting, served as a crucial and catalytic recognition point for the western world: society was undergoing significant change. He indicated a shift through industrialism to an ineffable other state. In the First Wave, we began as an agricultural state focused on survival and dependence; school was hardly a factor. Such a phase would correlate with a conservative option for school design, described in Chapter Two. In the Second Wave, an industrial society created a societal ethos of competition and independence; school was seen as a factory, producing citizens and workers. Schools would change only in reaction to a changing society. In the Third Wave, the industrial age experiences a transition to an information age, yet both co-exist. Here, the need for sustainability, connection, co-dependence, and cooperation are society's most dominant features; school becomes a more flexible institution; schools are challenged with the benefits and liabilities of experimental options.

Herman Maynard, Jr. and Susan Mehrtens' *The Fourth Wave* (1993), extend the metaphors to a Fourth Wave, characterized as an informational, integrated, and interdependent

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phase, extending into the realm of global sensitivity; schools serve as learning communities with permeable boundaries who willingly enter consider regenerative or eclectic options.

The findings that call for whole systems design are consistent with the intuitive appeal of progressive education, which originally emerged as a response *against* industrialization. In similar fashion (with the addition of technological advances unheard of then, but nevertheless imagined and encouraged), a neo-progressivism may have a voice as we move *through* and *beyond* industrialization.

Second-Wave – Traditional	Third-Fourth Wave – Neo-Progressive
Cover predetermined material – quantity and breadth	Uncover material to be constructed and problems solved – quality and depth
Product	Process
Knowledge is transmitted; teach the material to children	Knowledge is constructed; teach children the material.
Inquire in order to know	Know in order to inquire
Competition	Cooperation and collaboration
Tracking, Order/Hierarchy, Power	Equality, democracy, consensus
Know the outcome and teach to it	Aware of outcomes, know the learner and teach to him/her
Individual is subject to the demands of the community and a set curriculum; get with the program.	Individual is given voice, yet can understand oneself only within the context of community and a created curriculum.
Teacher knows – students answer questions.	Teacher as coach; a collaboration in order to build truth – students and teachers create the questions.
Order is a high value	Critical thinking/creativity/the whole person is the high value
Rewards are extrinsic	Rewards are intrinsic
Technology as script	Technology appropriate to occasion, connection

An agenda for whole-systems change reflects an evolution from highly segmented "specialized jobs" requiring conformity and repetitive skills towards a more free-moving, flexible and thinking job market (Donkin, 1998). The technological revolution puts learning and conventional education systems on a collision course (Burnett, 1995). Until now education has been teacher and instruction dominated, but the essence of the increasingly integrated, universal, multi-media, digital network is discovery: empowerment of the human mind to learn spontaneously, without coercion, both independently and collaboratively.

This research study points to developments within information and communication technology as instrumental forces in the way in which young people acquire and assimilate knowledge. These technologies are already disrupting hierarchies of top-down controlled learning environments, and encouraging the growth of non-institutional, ever-shifting networks of self-organizing learners (Cetron & Davies, 1997). The "knowledge age," by its very nature, addresses an increasing dispersion of knowledge and expertise at all levels of society and within all organizations. Business restructuring in the United States has been based on utilizing information and communication technologies to encourage the growth of networks that allow workers to combine their intelligence, knowledge and creativity in ways that minimize the need for layers of management (Dede, 1995; Richardson, 1997). As of August, 1999, stocks may be traded – worldwide – for extended hours, in order to allow for international participation.

Information and communication technologies have also put learning and conventional education systems on a collision course. Learning and schooling can no longer be regarded as synonymous. Our world is demonstrating that successful learners need no longer be constrained by time, place or rigid structures (Visser & Jain, 1997).

There is a growing knowledge from worldwide research that technological modernization, providing access to information, is not the only force for reform, however powerful its potential. Researchers (certainly the survey participants of this study) acknowledge the significance of school ethos, the community, the biological nature of human learning, and the proclivities, backgrounds, and learning modalities of the students themselves. This study indicates that the shape of learning communities must reevaluate the entire system and its assumptions about teaching and learning and where and when it takes place.

In an era of school violence and alienation, when the natural implosions of adolescence become explosions, the school as factory model no longer works. The factory model

commodifies children, making it impossible for them to manage their own learning as an ongoing lifelong activity. An orientation that objectifies – mechanically – the school, the faculty, the students, even the community in which it resides, views students as an "...end state in the evolution of isolated systems, the point at which the system has exhausted all of its capacity for change, done its work, and dissipated its productive capacity into useless entropy" (Wheatley, 1992, pp. 76-77). "The Second Law of Thermodynamics only applies to isolated and closed systems – to machines, for example. The most obvious exception to this law is *life*, open systems that engage with their environment and continue to grow and evolve" (Ibid, p. 77). Margaret Wheatley claims that this conventional and mechanical view promotes distrust in relationships, fear of change, and decisions that maintain a stasis. More practically, schools may add metal detectors as students *enter* the building, conduct more personal relationship training while *inside* the building, then send them *outside* of the building into a neighborhood and society that almost conspires against learning and interaction.

Within societies dependent as never before on the intellectual and practical capabilities of people to demonstrate creativity and the mastery of a variety of skills, schooling must give children the confidence and ability to manage their own learning as an on-going lifelong activity. Schools, therefore, must start a dynamic process through which pupils are progressively weaned from their dependence on teachers and institutions and given the confidence to *manage* their own learning, collaborating with colleagues as appropriate, and using a range of resources and learning situations within the entire community. Researchers and practitioners are correlating whole-systems educational change with new information-age perspectives, rather than incrementalist designs that reflect industrial "tweaking."

Alfred North Whitehead once claimed that tradition is the living ideas of the dead and traditional is the dead ideas of the living (Whitehead, 1929). The root of educational change lies in democratic, versus hierarchical, views of education, life, politics, and culture. It is a quality not only of conducting change in schools, but of being changed by the people one is educating. New forms of education will value diversity, inquiry, team-learning, shared vision, a sense of self, mutual respect and trust, the development and enhancement of the learning community.

In *The Roots of Open Education in America* (Dropkin & Tobier, 1976), we are reminded that a fundamental task of education is the capacity to enhance the human race:

The ideas...after all, are about person, about difference, about continuity, about human striving to make both sense of the world and an impact upon it, about potentiality and the conditions of life that nurture or suppress the flowering of potentiality, about the conditions that allow the recognition and emergence of ideas. Inherent...is a broad acceptance for all persons as active learners, capable of intelligent, active efforts to survive. (Dropkin and Tobier, 1976, p. 5).

Conclusion #2: Indigenous Culture and Best Practices

This research has featured the impressive extent to which worldwide educators agree that adolescents need learning environments that stress both continuous learning and the ability to sustain one's culture, namely to bridge the gulf between tradition and modernity by selecting the best of each in the hope of enhancing both. The Third World Internet explosion has contributed to this phenomenon and will have great bearing on the future of education, as a rich source of innovation. In addition to gaining from the expertise of the world around it, any nation can now make its contribution.

In each culture lies enormous strength. Current work in cultural leadership points to the essential features of (1) continuous learning (2) consistent leadership (3) centeredness in one's own culture as a source of strength (4) commitment to a vision (5) ceaseless communication (Simons, 197). The parallels to education are manifold. A good school - the very personification of culture - must have these features. Let it be the schools that serve as an example for their seamless transition to places where culture informs the bones of the learning community.

Each community has developed its own identity, sense of meaning, coherence, and culture; each develops an internal set of mores and logic, codes and customs, rituals and ceremonies (Urevbu, 1997, p. 5). Each develops its boundaries, its links to the world beyond and impinging upon it. It follows that there are significant links between one's culture, housed in community, and the learning process (Caine & Caine, 1996).

No longer are the United States or European models the sole font of knowledge. The researcher's own school's community-service program, at this point underdeveloped, should reflect our culture's emphasis on human connections. The future program may be based upon a model of an Ecuadorian school, in which it is the obligation of each student to help an illiterate community member how to read. Our governance structure, traditional and

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hierarchical, is being informed by models of discussion that mirror work done in Native American reservations and West African towns. School reform will likely take place more as a function of grassroots expertise involving stakeholders (teachers, parents, community-members, students) in partnership with colleagues in virtual teams, globally. The post World-War II imposition of First World educational systems on the Third World might be coming to an end.

The educators who participated in this study, the global reports, and the conferences have asserted that learning must be sustainable, practical, constructivist, expressive, life-long, and free from constraints. They claim that teaching, too, must be sustainable, and also sup-ported, innovative, expressive, and free from constraints. The educators have asserted the primary importance of community and adolescents' primary need for a sense of belonging to a culture and genuine access to adults for moral strength, in order to sustain them through the myriad of influences they face, particularly from the western media.

The "best practices" will likely be based on knowledge derived from recent research in the fields of neuroscience, cognitive science, anthropology, sociology, evolutionary biol-ogy, psychology, the arts, and related fields in order to study knowledge about the biological nature of learning, thinking processes (meta-cognition). Teachers now have unprecedented access to each other – at least electronically. This study encourages such collaboration which may also serve as a hedge against tyranny.

As whole-systems change dovetails with indigenous culture, pedagogic practice and curriculum reform must work together. As symbolists, leaders in school reform must create truly "multi-cultural, learner-centered schools" (Banks, 1992); culture is not a theme but a prevailing means by which decisions are made. Multiculturalism is of primary importance in structural and whole systems change, representing an equality of voice (of gender, of ethnic-ity, of culture, of orientation). Multiculturalism represents a shift from curriculum to overall structure and dovetails with the conclusion on whole systems design; multiculturalism is a pervasive way of conducting one's life, making decisions, making plans, Multiculturalism ex-pands pedagogy, promotes flexibility, allows opportunity to discover the meaning inside the conflicts that alone make an intellectual life and must reflect a respect for voice and for the spaces between voices; a sense of place; an awareness of who the learner is. These are sub-tle, symbolic features without which the task is impossible. These leaders must see culture as a cornerstone of their "healthy-company values and philosophy" (Rosen, 1991, 261).

Lately, diversity has been viewed less as an obstacle to be managed than as a difference to be celebrated. We acknowledge that we live in a global, rather than apportioned world. Though it may seem as if McDonalds can be found everywhere with a slight tweak here and there for cultural difference (no meat in India, for example), *schools are different.* They must look and feel different. They must honor difference. They must see themselves as inseparable from the strength of difference.

We speak in international terms; the Internet sorts by topic rather than country; immigration and movement are more pervasive than ever. Along with diversity and multiculturalism as a household world, we are caught in a reactive climate as well. These are illuminating and dangerous times. In this world of diversity, we are experiencing a mushrooming xenophobia. Along with a kaleidoscope of faces, the troops are squaring off again. Fundamentalists abound. Fourth Reich groups join militia groups in fomenting hate. The 1990s have been correlated, in terms of genocidal activity, with World War II.

Perhaps, with a cultural design, schools may look quite different. Some may be a peripheral and supplemental part of a village's education. They may be resource centers alone. They may take place in museums, in zoos, at retirement homes or community centers, on basketball courts or in malls. They may serve as apprenticeship programs. We can come up with all sorts of creative ideas. But first - and foremost - we must create learning communities that emerge from culture. Only then can we maintain or way of life, transmit a heritage, and create a medium for growing a society where people come first. Imagine how truly cultural learning communities may take different shapes all over the world.

In Hawaii, "one is not taught about the ocean without learning about all of its physical aspects - the wind, rain, weather, reefs, tides, astronomy, flora, fauna and other factors affecting, and affected by, the ocean." (Chun, 1996, p. 6). Education has become interdisciplinary, interconnected, physical, and spiritual. It may not even take place in schools as we know them.

Conclusion #3: Transformational Leadership

For such profound systemic changes to occur in any organization or system, leadership will be the critical factor. If we are truly seeking change, all those involved in the process must understand that:

> Leading people (as opposed to simply managing them) in a new direction
> means reshaping their view of the world. It means shattering their sense of

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stability, tossing out their old standards of success, and prying them loose from the status quo. And then it means replacing what you've wiped out with a new, coherent and energizing vision of what you believe the future can and should be (Nadler, 1988, p. 55)

Research in educational leadership can provide the means by which models for educational reform may be developed. One of these theories, from the work of Peter Senge at M.I.T., is articulated below. Since cultures can only live in communities, Peter Senge's (1989) five elements of community might illuminate and provide structure for cultural, educational reform. I have listed them, below, along with a set of cultural questions.

Personal mastery

Senge addresses the means by which competence is a function of a learning and growing community. Should curriculum be created from downtown or shall it emerge from dialogue, in light of agreed-upon standards? Peter Relic, the Director of the National Association of Independent Schools writes: "Mastery is not so much about achievement but about responsibility" (1996). This is an interesting notion, culturally defined, and connected to as much the *how, where*, and *when* of learning as the *what*. In an era characterized by unprecedented growth of and access to information, mastery changes.

Mental Models:

These are concrete and detailed guiding images which enable individuals to articulate and elaborate their goals" (Shields, 53). Perhaps schools should leave room to assist each culture (of students and teachers) to create such images of success. We know that children rise to teachers' lowest expectations; perhaps those expectations can be accompanied by images that transcend stereotype.

Team Learning:

Individual competencies must be accompanied by group skills, collaboration with teachers and with students prevails, decision-making encompasses structures that allow the natural wisdom of the group to emerge. Every culture has different group norms but validates the notion of teams as a function collective expertise.

Shared Vision:

Individuals must play a role in envisioning their goals and vision for the organization. Students, parents, teachers, community members, then, must play a part in creating the school. How, then, can the disparate views and orientations find common ground? What organizational development techniques can allow the voices to be heard without reducing them to a hopeless cacophony?

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Systems Thinking:

In successful communities, interdependence and interrelationships are components. To this end, then, a school cannot exist outside of the community around it. The new vision of science as multiple systems leading to wholeness is consistent with numerous cultural - and religious - paradigms. Cultures talk about creating wholeness in systems. We need school design that looks toward wholeness. In more concrete terms, we need reciprocal involvement of school and community, permeable boundaries between living, working, and living.

These short responses to Senge's organizers of learning communities can be deconstructed and critiqued, for there are no guarantees that a community works because his five notions are present, nor do we know the cultural biases that may propel it. Research is certainly needed to determine, from a cultural viewpoint, what - indeed - would inform an operational definition. The very process of moving in this direction, however, is evident in the research. Senge's work is well-known in developing countries.

Learning communities can easily lapse into a cliché, another passing fad (Perkins, 1995). The enduring and sustainable feature of a learning community is its grounding in cultures that can find ways of examining purposefulness, shared norms (whenever possible), and the distinctive quality of human presence among community members (Fullan, 1990; Senge, 1990). A learning community maintains a way of live and serves as a medium for growing things (Eisner). Homogeneity and standardization are anathema to this process. Reform efforts will take different forms, depending upon the nature of the community, and in so doing will avoid the mistake of creating normative models. Instead, they shall be shapes. To this end, a learning community must create consensus and validation without reducing it to a formula or those features that strip culture from the paradigm (Cobb, 1992).

Senge's work was mentioned in survey responses from the United States, India, South Africa, and Brazil. He has received ten years of feedback since its publication, much of which has identified the constraints of change, especially if such change – however inspired – is initiated in a top-down and hierarchical way. Reminiscent of Margaret Wheatley's *Leadership and the New Science* (1994), Senge believes that a biological, rather than mechanistic, context can breathe life into his five disciplines. Such an organic orientation of ebbs and flows, permeable boundaries, and life-cycles can lead to learning communities that practice what they preach (Senge, 1999; Land & Jarman, 1992). Such notions are also consistent with Arie de Gues' work, articulated in *The Living Company* (1998), which considers attention to

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the human dimension – in a learning community - as the quality which has contributed the most to durability and innovation.

A change model is only as good as the ability of its members to sustain it. Formal change models may not be as effective as informal ones. Tasks may not be as important as relationship. School reform, like business reform, might benefit from the consideration of the learning community as a living organism. Schools are not to be "fixed" as a mechanic fixes a car, nor do people when fixed. Lessons cannot be designed to be teacher-proof. In an interview with Peter Senge in *Fast Company*, Senge claims: "For that reason, if you create compliance-oriented change, you'll get change – but you'll preclude the deeper processes that lead to commitment, and you'll prevent the emergence of self-generated change (Webber, 1999, p. 183)." Continuing his biological and ecological metaphors Senge asks leaders to find "seed carriers," those members of an organization who, in my interpretation, spread communication, sprout new ideas, and nurture talent. He asks us to create pilot groups that can take root, including participants who feel that their work matters. In short, Senge believes that his five disciplines need to be sewn and grown, rather than imposed. School reform must take note. It is certainly the conclusion arrived at by a growing number of Third World educational practitioners and researchers committed to building sustainable change (Becher, 1997, pp. 333-46).

AN EXAMPLE OF A SCHOOL REFORM MODEL

Concepts undergirding whole systems design, the use of culture and "best practices," and transformational leadership theory can lead to the formations of educational reform models. Many traditional reform efforts typically answer the hard questions with a new form of the word: *what*. If young people are becoming violent, then we develop new programs, new curriculum, new teacher training. We create voucher systems, charter schools, site-based management. There are problems and so there are fixes. Though there are fabulous success stories, many develop new mousetraps. More successful school efforts are more nuanced and designed around the words *why* and *how*. A transformational reform effort must validate the what and the how, yet extend the questions to *where* and *when*. Where does learning take place? When?

One such model, based upon U.N.E.S.C.O.'s Delors' report (1989, 1996), focuses on the four pillars of education identified: learning to do, learning to be, learning to know, and learning to live together:

	Learning To Be (cultural centers)	Learning To Do (work centers)	Learning to Know (skills centers)	Learning to Live Together (service centers)
Year A	a.m.	p.m.		
Year B		a.m.	p.m.	
Year C			a.m.	p.m.
Year D	p.m.			a.m.

1. Years A-D represent a four-year outline. In Year A, a 1st year student is involved in Learning to Be in the morning, then Learning to Do in the afternoon. Over the course of their four years, students rotate through, and elect to take, the "pillars." (This simple structure, of course, can be modified; for example, a year's program can be split again so that a student would experience all four pillars — a.m. and p.m. for two semesters.)

2. Each "pillar" has its own assessment system, aligned with the subject itself, and designed by faculty, local resources, worldwide best practices, and representative students

3. The "school" is constituted of not more than 500 students

4. 4 teachers are assigned to each pillar; there are two learning specialists, who work with community members in diagnostic activities; there are always faculty available for curriculum review and re-search.

Whole systems design for schools implies a corollary finding that a new architecture for learning communities should reflect a new cartography of knowledge. Education may not take place in "schools." Rather, "schools" may take the form of cafes, clearninghouses, and places of congregation. They are abuzz with activity and resource, nourishment and socializing. They are Quaker villages and resources centers and places of joy and connection.

The traditional metaphor of industrialized delivery system for schooling and training gives way to the metaphor of educational processes that look like living organisms. Certain buildings and rooms may reside at the school itself and can be used as central gathering

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places for media, group study, skill development, and diagnosis. The student inquires at work centers, cultural centers, skills centers, and service centers that extend to and beyond the school itself, which evolve and use the strengths of community resources and relationships, depending upon the curriculum. These resources and relationships may include extended families, peer groups, professional associations, communication media, religious centers, natural recreation spots, and other socio-cultural meeting places (Bhandari, 1999). The boundaries of the school are therefore permeable.

The model proposed also implies that underutilized rooms can be used for other community needs. The playing fields may even be sold so those students who choose can participate in athletic activities in their neighborhoods, rather than take care of all their physical needs at the school itself. Loyalty to one's school is replaced with loyalty to one's community. Rather than assume that all learning communities are embodied in schools alone, we may see a future in which vital learning experiences look more like cafés, club-houses, conferences, invention workshops, marketplaces. They may be places where young people can create, work with mentors, apprentice with masters, and serve their communities (Owen, 1996). New learning centers may use families, the media, civil service, hospitals, government agencies, and even the military (Martz, 1993). Combined with the Internet and other explosions of technology, learning may become not just electronic page turning, but a worldwide, interactive, constructive process.

The new cartography depends upon community. An East Indian participant in this study described the importance of creating "learning cities" which use learning as a way of promoting social cohesion, regeneration and economic development. Such cohesion re-quires involvement from all parts of the community and can provide local solutions to local challenges" (Bhandari, p. 2). Learning cities explicitly Kakegawa, a small city 200 miles west of Tokyo, declared itself a "city of lifelong learning" in order to promote social cohesion, attract businesses to a safe environment, and engage its citizens in cultural, volunteer, and recreational activities rather than on work alone. There are three levels in Kakegawa: the city level (classrooms and auditoriums for city-wide events and self-organized activities for lifelong learning in fields such as local history, horticulture, and singing; and a primary level, focused on learning activities for youth and clubs; sub-district level, addressing sporting and cultural activities. These levels supplement and enhance the resources of the "schools."

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Diversity (especially in cities, the focal point of dramatic change) is a resilient force that provides students with adaptability and perspective. New learning communities will create opportunities for students to benefit from the resources that support various means of communication, teamwork, and conflict negotiation.

Resource groups within and beyond the learning community explore the issues and opportunities facing education within the context of community and national goals; assessments are made regarding inequities amongst its citizens; informal and formal learning spaces, institutions, and resources are explored, along with cultural, artistic, religious resources; local knowledge systems and practices are evaluated; organizations and individual supporters are nurtured and included (Longworth, 1996; Shafi, 1996). Such a model would require practitioners to discover and develop multiple methodological approaches. This study used surveys and content analyses. Future studies would adopt different forms.

POLICY RECOMMENDATIONS

The researcher strongly encourages the United States to connect, as a world partner, in efforts directed at educational reform. In so doing, the researcher recommends that this new work be supported through the development of the following elements:

1. a clearinghouse and field guide for methodologies of cross-cultural research, along with exercises and resources devoted to educational reform implementation; a research arm, supported by enhancements and possibilities of technology, that scans the world for social betterment proposals and connects innovators and projects for contributions to human wellness, exemplary actions, and local solutions; a means by which best practices in the teaching profession can be made available to, but not imposed upon, those interested in school reform.

2. a division responsible for charging yearly premiums to NGO/government cooperatives of each participating country. Enlist worldwide support for education disaster insurance.

3. teams assembled for support and assessment. We inspect for bombs or human rights abuses, how about crimes of the intellect? Based upon the model of Doctors Without Borders, U.N.E.S.C.O. or other agencies that may assist in these efforts may form Teachers Without Borders, worldwide facilitators who, culturally literate could help learning communities develop models that meet their needs.

4. The encouragement of governments to experiment with educational enterprise zones involving the stakeholders of the community.

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5. an assessment mechanism. Each country's insurability is assessed to the degree that children and their teachers are allowed to think.

FINAL THOUGHTS

Well aware of nuance, the pitfalls of cultural misrepresentation, even the hypocrisy of outside intervention, we need – nevertheless - to begin implementation projects and establish a network of facilitators, grounded in culture and best practices research. Such risk-taking is subject to enormous criticism. We are overwhelmed by the daunting task; we deconstruct and dismiss with words like: faddism or panic or caprice. We are discomfited by change.

This study does not pontificate alone. Dorothy Parker once wrote: "You can't teach an old dogma new tricks." It asks us to challenge our assumptions and move past solutions that answer the questions: what now? What shall we substitute for what we are presently doing? We must use the benefits of what we have learned about how and when students learn and move to where and when they learn, in this new age.

Interestingly enough, these questions are not new. Great teachers ask great questions. God framed Adam and Eve in order to ask them to examine themselves. He placed the tree of knowledge of good and evil in the garden. He knew these students would succumb and pay the price of their curiosity. That prince is not the loss of innocence, but rather the moment when they became human beings. A forbidden tree is a wonderful motivation – what student could not resist the teacher's prohibitions?

The teacher was prepared for the consequences, for without consequences there is no human growth. Still, even after the fruit was taken, God was not didactic. He didn't even give Adam and Eve a summary of the lesson. Indeed, he simply asked: **"Where** are you?" He asked them to find their place: how and why, where and when they learned something. He asked them to discover a new cartography of learning. In some ways, without the rhetoric and the stridency, it mirrors our modern lexicon of whole-systems change. He asked for accountability, humanity, humility, reflection. His teaching was intimate and engaging, hard-nosed and risky and moral. It was certainly transformational.

The issues are, indeed, timeless. Nevertheless, this study has indicated a clear direction toward new forms of education that respect the head, the hand, and the heart. These notions are nothing short of inspiring, and I – as a researcher, as a teacher, as a leader, remain inspired.

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Howard Gardner writes that education should be about the true, the beautiful, and the good. In his view, we should organize around such notions – to see truth, to recognize beauty, to make the world a better place. I believe his notions are more than ingenuous platitudes. He is asking the post-modernists, as well as the traditionalists, to sit on their hands for a moment. He is asking us to look deeper, even challenge our own assumptions. The findings of this study acknowledge enormous struggles ahead: poverty, war, unequal access to basic education. At the same time, there is a sense of hopefulness. In a report published on the Internet in 1998: "Pacific Indigenous Notions of Learning," the words *ako* (learning), *'ilo* (knowledge), and *poto* (wisdom) are linked to consider education a life-long continuous process, a precondition for gaining knowledge. Today, the Tongan word for *ako* (learning) has taken on connotations of interactions between teachers and students; rather than observation, listening, and imitation; Often added to *ako* is *fai-ako*, a word that refers to the interaction between knowing and knowledge, some of which is personal and restrictive, other knowledge that is public and socially interactive (U.N.E.S.C.O. 1998).

Work has already begun. Venezuela has reinvigorated an "Intelligence Project" (once terminated by political mandate) with the help of Luis Alberto Machado, former Minister for the Development of Human Intelligence. Alongside of David Perkins, co-director of Project Zero at Harvard, Edward de Bono from England, and Reuven Feuerstein from Israel, participants train professionals to work with new practices in thinking and problem-solving strategies to solve civic problems. Though they acknowledge the Internet as a powerful force for communication, they attribute the radio to its success, for it reaches everyone.

Howard Gardner is asking us to let the growing mind tackle basic abstractions such as beauty and truth and goodness and gain the literacies connected to them. He is asking us to teach to the intelligences these notions might represent; for him, this is an education that is durable. If only we can act upon these visions, as individuals and as learning communities. So are many others, around the world.

Our students need to ask questions so that they can meet the ideas of those people who have used their craft to enhance the beautiful, the true, and the good. These people are not simply performers, magicians, or scientific heroes. More often than not, they are the teachers, whose very sense of human presence is remembered long after the lessons have drifted away. They are teachers who consider the thoughts and feelings – the questions – as having meaning, the ones whose eyes and movements express something, in the words of Leo Tolstoy: "palpable, essential, precious (Tolstoy, 1953, p. 199)." Children crave such engagement; it is a spiritual need (Coles,

1990). In the introduction to *Pedagogy of the Oppressed*, Paulo Freire writes: " I hope the following will endure; my trust in the people and my faith in men and women and in the creation of a world in which it is easier to love (Freire, 1972, p. 19).

Finally, in *The Color Purple*, Alice Walker writes: "When Celie questions, a space opens." Learning communities must ask those essential questions and open those spaces, make this earth a place in which it is easier to love. In a world that sits so precariously on the brink, I believe we have no greater task.

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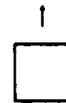
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