

BUILDING NEW SCHOOLS

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This paper, which I have named, “Building New Schools” is about educational and school reform. It is based on the premise that school reform is of critical importance to our future. My esteemed colleague, Seymour Papert, who is one of the best thinkers about the issues I will deal with in this paper, told me about a book he is writing which deals with the current educational situation in the U.S. Only have jokingly, he said he would like to title the book, Fiddling While Rome Burns! I realize that there is good work being done in your country and mine to build schools that work for our children, and I am sure that many in this audience are leaders in such efforts, but I share with Professor Papert the sense that there is more temporizing and tinkering than serious and effective work on school reform.

This Conference is called “The Innovative Technology and Schools Conference.” We Americans have a nasty habit of meddling in other people’s affairs. So in that spirit, I would like to suggest a name change for the Conference and move the word “innovative” in the name of the Conference and call it instead the Technology and Innovative Schools Conference. It is a foregone conclusion that technology innovation will continue. The crucial question is: Can we create truly innovative schools? Will such schools be not just here and there? Will they be not just for some of our children, but be for all of them? And the key question: Will schools successfully adapt to the way in which ICT has changed human culture so that our schools will help to enable students as individuals to live productive and satisfying lives and so that collectively they will bring the world to a better place at the twilight of the 21st century than they found at its dawn.

A Brief Look at the History and Geography of Educational Reform

Educational reform is a topic that is universal and perpetual. To get a sense of the universality of the topic of school reform, take a brief world tour with Google. Type in the words “educational reform” and then name a country. You may wish to start with Australia, as I did. Then change the country. Go where you choose. I chose Germany, Russia, Japan, Chile, China, Thailand, and Canada. But then get off the beaten path. Let Google take you to Slovenia, Ghana, Latvia, or Iceland. In all of those countries I found sites dealing with educational reform. Indeed, it is more difficult to find nations devoid of conversation about the need for educational reform than it is to find instances where reform is an issue. Educational reform is universal.

Educational reform is perpetual. We, the residents of the 20th and 21st centuries, did not invent educational reform. One of the great classics in the education literature is the *Great Didactic* written by Jan Amos Comenius in 1632. Comenius reflects on the serious defects in the schools of his day and writes:

How many of us there are who have left the schools and university with scarcely a notion of true learning. I unfortunateman that I am one of the many, thousands, who have miserably lost the sweetest of life and wasted the fresh years of youth on scholastic trifles....Some people are certain to be indignant that there are men who find imperfection in schools, books, and methods in use and who dare to promise something unusual and extraordinary(but) it is possible to reform schools.¹

The *Great Didactic* contains detailed and revolutionary prescriptions for reform such as universal school, group instruction, and a standardized and sequenced curriculum. We can trace school reform even much further back in time to the earliest era of the literate tradition. The *Republic*, written around 360 BCE contains Plato's ideas about educational reform that he considered to be a key element in his plan to create a utopian society.

The first education law enacted in America was the Massachusetts Bay Colony Law of 1642, twenty-two years after the landing of the Pilgrims at Plymouth. The Education Law of 1642 was a response to the recognition that many parents and masters were too "indulgent" or "negligent" with regard to the education of children in the Colony. It specified the type of education that was needed and provided if parents or masters not attend to their education then:

the said Select men with the help of two Magistrates, or the next County court for that Shire, shall take such children or apprentices from them & place them with some masters for years (boyes till they come to twenty one, and girls eighteen years of age compleat) which will more strictly look unto, and force them to submit unto government according to the rules of this order, if by fair means and former instructions they will not be drawn into it.²

Thus, the first education law in America was, in effect, an educational reform law! It was a law that was generally ignored. As would often be the case with educational reform legislation down through the years, the "bark" of this law proved to be much more impressive than its "bite."

From 1642 to 2005, educational reform has never been "off the table" in the U.S. as a topic of conversation among educators, politicians, and the general public but, the intensity of reformational spirit ebbs and swells. For the most part, reform is a topic that is encapsulated in papers in educational journals or among small groups of persons committed to a cause. The most consequential period of school reform in the U.S. occurred in the middle years of the 19th century. The nature of education in the U.S. after the 19th century school reforms was substantially changed from what it had been before the reformers began their work.

The earliest years of the educational history in colonial Australia and America reflect some strong similarities. In both cases, education was largely a function of the Church and family. In 1848, the most important of the American educational reformers Horace Mann resigned as Secretary of the Massachusetts Board of Education. It was in Massachusetts during the twelve-year tenure of Mann as the Secretary that the first state funded school system was established. In the same year, 1848, Sir Charles Augustus FitzRoy, the Tenth Governor of New South Wales, created a National Board of Education that was responsible for the establishment of state schools in Australia.

The later years of the 20th century and these early years of the 21st century have marked one of the swells in concern about educational reform in the U.S. In the later part of the 20th century there was a wave of laws at the state level which purported to be education reform laws. Almost every governor and state legislature have enacted their own version of educational reform. The 2002 “No Child Left Behind Legislation” (NCLB) was the major reform law at the Federal level of the current administration. NCLB has not changed my belief that we have not addressed the need for school reform in the U.S. in the manner and on the scale that is required. I am one of those Americans who believe that the best thing about NCLB is its name.

Educational reform has also been a topic of considerable interest in Australia over these recent past years. This is not just a coincidence. Many of the factors that are provoking the belief that educational reform is necessary transcend national boundaries. The ultimate consequences of the current educational reform movement in the various nations will be determined by domestic politics, the context of traditions and policies pertaining to education in each nation, and the skill and persistence of those championing reform.

The industrial revolution and the resulting dramatic expansion of urbanization and immigration was the major force which generation the educational reform of the 19th century in the U.S. Information and communications technology (ICT) and some of the secondary consequences of ICT have impelled the current wave of educational reform.

In this paper I will explain my thinking on three key questions and issues in our effort to build new schools:

- What does “reform” mean?
- Do “educational reform” and “school reform” mean the same thing?
- If school reform is the solution, what is the problem?

I will conclude with an account of what my experiences and reflection have taught me about school reform.

What Does “Reform” Mean?

The word “reform” is almost never defined when educators, politicians, or pundits write or speak about it and the complexion of the proposals for reform vary greatly in nature and scope. It would require a very fuzzy definition of reform to contain all of the various proposals that are considered to be reform by their creators. Such a definition would go something like this: Educational reform is doing something different than is presently occurring (or thought to be occurring) that will make education better.

Of course, there are sharply varying conceptions of what would make education better. The proposals of two prominent Australian reformers, Kevin Donnelly and Brian J. Caldwell are as different as night and day. One person’s proposal for reform is another’s recipe for educational disaster!

The continuum of reform proposals in the U.S. is as broad as it is in Australia. At the extreme end of this continuum is Ivan Illich who argued in his book, *Deschooling Society*³, that the key to educational reform was the abolishment of schools. At the modest end of the continuum, where the bulk of the proposals lie, are reform proposals such as increasing teamwork among teachers, using projects in learning activities, increasing the quantity and improving the quality of homework, eliminating bells to mark the end of class periods, implementing policies which prohibit student athletes who fail courses to play on the team, expanding the use of standardized tests and ensuring that failure on those tests has consequences for the students, teachers, and schools. While changes such as these may represent improvements in school practices, I believe it stretches the term “reform” past the breaking point to include them as such.

I will argue that reform represents radical change. I am aware that the ordinary language use of the term “radical” is pejorative. Radicals are nutty extremists. However, when I argue that reform is radical I use the word to indicate that reform involves changes that are deep and get to the roots (Lt. radix = root) of educational practices and programs. In this discussion of educational and school reform, I define reform as change which entails a move from the form of schooling that currently exists to a new form which entails policies, organizational structure, and practices which represent a disjuncture from the past. I believe it is useful to confine the use of the term reform to instances of major change, to those situations when there is indeed a “re-form.”

Organizations are continuously engaged in change but normal or routine organizational change does not constitute a “re-form” or a change from one form to another form. Normal – routine change is not transformational change. Normal change does not get at the basic structure of the organization or fundamental aspects of how the organization functions. By way of a sports analogy, changing the game of football so that three yellow cards are required to earn a red card, or

changing the game of cricket so that a ball need only roll 45 yards rather than 50 to “google a six” may seem like a “big deal” to those who play the game but do not involve a re-form of the game. Giving the football players ice-skates, a stick and puck and putting the game on an ice rink would convert the game of football into a new game. School reform entails changing the nature of the game!

The 19th century reformers realized that America was being changed in deeply significant ways and that transformational change in education was required. The challenge that we face with regard to the need to rethink and redo education is at least as great as the one which they faced. We can only hope that we can do as well as they did.

Does “educational reform” and “school reform” mean the same thing?

Suppose there was a device which could be attached to a person’s head to assay the contents of their mind. The read-out from this device would distinguish between the information stored in the brain that was functional from that which was non-functional. The functional information is the information that is used by the individual in the course of their day to day lives. This is, in effect, the person’s RAM memory. The inactive, non-functional information is that which Alfred North Whitehead referred to as “inert ideas” or those ideas that “are merely received into the mind without being utilized, or tested, or thrown into fresh combinations.”⁴ Non-functional information is much like what a person burns onto a CD and puts away in a unused drawer.

This Mind Assay Device would furnish one additional piece of information. It would tell us the source of the stored information. Was the information derived from a book, a teacher in a school, a parent, the Web, a peer, a TV program, etc.? This yet to be invented device would tell us what the relative contributions of formal education (schools) versus non-school informal education (non-school learning) in equipping people with the information which is has value and utility to them in their lives. Even though people typically list only schools on their resumes under the heading of education, we all recognize schools are only one of the sources by which people acquire the information (true or not), beliefs (benevolent or malevolent), and skills (socially constructive or destructive), that are functional in their lives.

From the earliest point of human civilization to quite recent times there were four principal sources of transmitting the culture whether the person was in school or in out of school situations. The dominant means was by a knowledgeable person sharing their knowledge through speaking to another person or group of people. Another mean of transmitting the culture was by watching someone with a skill do something and practicing the skill with them. A third means was by reading something whether it be hieroglyphics carved in stone or a letters printed in a book. The fourth means was by looking at an image such as a stained glass window in a cathedral, a picture in a gallery or in a book

Location and economic status were determinants in the extent of availability of educational resources available to any person. Money buys books, pictures, travel, and teachers. Location also provided more learning resources such as newspapers, libraries, museums, etc. While Comenius championed universal schooling in the 17th century it was not until fairly recently that universal schooling became a reality in the western world. In the U.S. compulsory schooling was not the law in all of the states until 1918. State supported compulsory schooling provided a threshold of access to teaching/learning resources for all children in the state. For large numbers of children and youth, schools were the richest educational resource in their lives.

My generation is the transition generation from the BITCE (Before Information and Communications Technology Era) to the AITCE (After Information and Communications Technology Era). I was born in 1939 which was only 19 years after the world's first radio station (KDKA) went on the air. Both of us, me and KDKA, were born in Pittsburgh. The first sound motion picture, *The Jazz Singer*, was released only twelve years before I was born. Two years after I was born, the newly founded Columbia Broadcasting System (CBS) began broadcasting two television newscasts of 15 minutes to a small audience in New York. The world's first electronic digital computer, the ENIAC, a huge machine weighing more than thirty tons with thousands of vacuum tubes, was installed at the University of Pennsylvania a month after my seventh birthday. (To commemorate the 50th anniversary of the ENIAC in 1996, a group of students at the University of Pennsylvania put the entire processing power of the ENIAC on chip.) The World Wide Web began operation in 1991 when Tim Berners-Lee put the first Web server onto the Internet. Even with all of the hyperbole which afflicts discourse on ITC it is difficult to over-estimate the extent to which ITC has impacted human culture. Thus, after more than two millennia with those four means as the means for transmitting the culture a fifth source has been added: electronic transmission of information in words, numbers, sound, and images. It is difficult to over-estimate the impact of this fifth source.

Were we able to use a Mind Assay Device to compare how people in 2005 get their education and compare it with how this occurred a few decades ago, we would find that a substantial differences in the situation and these differences would be largely attributable to the accessibility of information and communications technologies. This transformation began in the early part of the 20th century with the advent of radio and motion pictures, continued into the middle of the 20th century with the widespread availability of television, and is still occurring because of developments in computer technology. People learn history in movie theaters. Their knowledge about government comes from radio and TV talk shows. They learn about science on the Internet. It is abundantly clear that ICT has generated deep and wide transformation in where and how AICTE people get access to the content of the culture. Wealth and location still play

constrain access to some extent, but to an incredibly smaller extent than ever before in human history.

If we think of education as the totality of cultural resources that provide individuals with their functional knowledge, beliefs, and skills, it is clear that we have had educational reform. Although computers and networking are abundantly visible in schools and in many instances are heavily used, but there is abundant evidence that ICT has not generated on a widespread basis school reform. It is not unusual to find applications of ICT in schools which have added value to the instructional program but, schools have generally managed to make use of computers and other ICT technologies in ways which maintain the status-quo. Unless we agree with Illich and conclude that the solution is to abandon schools, it is imperative that we become even more committed to school reform.

If School Reform is the Solution What is the Problem?

Every school reform proposal is based on a diagnosis of what is wrong with schools. It is important to carefully examine or uncover the “facts”, assumptions, and beliefs that are embodied in the diagnosis. The formulation of the diagnosis is important since the since the diagnosis shapes the prescription. Most of the diagnoses fall into five categories.

Pro-reform politicians and policy makers who are pro-reform generally base the need for reform on the following two problems:

- The performance of large numbers of students particularly as measured by standardized achievement tests is sub-standard, particularly in basic skills such as reading, mathematics, and science.
- Students do not have the competencies needed in order for the nation to compete successfully in the global marketplace.

Members of the ICT community often support their contention that reform is needed on this problem.

- Schools are not making adequate use of ICT. ICT is a fact of life in our world and our young people need to be able to use it effectively. ICT provides wonderful opportunities for learning and schools should take full advantage of these opportunities.

There is one other constituency for reform that is the least publicly conspicuous voice among those who are pro-reform: teachers and other school personnel. One often hears those in this constituency who believe reform is necessary diagnosis the problem in this way:

- Students are not engaged in their schoolwork and are not deriving benefit from their schooling.

Although I agree – more or less – with each of those assertions, I do not think they get at the heart of the matter. I offer my own diagnosis: **Human culture is being transformed as a consequence of the use of information and communications technologies but the way in which we provide schooling is generally incongruous with the ways in which information and communications technologies have transformed human culture outside of schools.**

We live in one of the great seams of history. The ways and means for creating, disseminating, and participating in human culture – the totality of the content of civilization – is undergoing fundamental changes. Stability, tradition, and status quo are hardly characteristics of our times. There is a Chinese proverb which says, “It is better to be a dog in a peaceful time than to be a man in a chaotic period.” Yet, living in these times bestows on us the opportunity to play a part in creating a new and better era of the education of our children. It is a good time to be here if one is comfortable with the role of a pioneer.

In a small and engaging book, Charles Handy’s characterizes the times in which we live as a period of discontinuous change. In Handy’s words, “Continuous change is comfortable change. The past is then the guide to the future.”⁵ Discontinuous change is change that does not flow in a predictable and expected way from preceding events and developments. This is a time of discontinuous change. Most of the most salient factors that are shaping our lives in 2005 could not have been anticipated we were born. Here is what Handy says about discontinuous change:

discontinuous change means, for instance, completely rethinking the way in which we learn things. In a world of incremental change it is sensible to ape your elders in order to take over where they leave off, in both knowledge and responsibility. But under conditions of discontinuity it is no longer obvious that their ways should continue to be your ways; we may all need new rules for new ball games....⁶

Handy calls his book, “The Age of Unreason” but he does not use the word “unreason” in a pejorative sense; rather, he uses that word in the spirit of G.B. Shaw who argued that progress depends on the unreasonable person. The reasonable person, he says, adapts himself to the world but the unreasonable person adapts the world to himself. When faced with discontinuous change the

needed response is unreasonableness or what Handy calls “upside-down thinking. The reasonable response to change during periods of normalcy is to “follow the rule book” and to make the fine tuning modifications which are required. Upside-down thinking entails the courage to recognize that we are in a new era, the imagination to conceive new processes and practices, and the commitment to make what we can imagine a reality.

The middle years of the 19th century in America was a period of discontinuous change. During that period the impact of the industrial revolution and the resulting dramatic expansion of urbanization and immigration changed the character of American society. The 19th century reformers recognized that new times called for new schools and in the period between the fiftieth anniversary of the Declaration of Independence in 1826 and the beginning of the Civil War in 1861 the foundation for a new approach to education was established. Once again at the later years of the 20th century and the early years of the 21st, we are faced with discontinuous societal changes which require us to rethink and redo the nature of schools and the process of schooling. The proliferation of information and communications technologies across all sectors of society is at the heart of the changes which are occurring at this point in time.

ICT has had a huge impact on how we use our leisure time – TV, movies, World Wide Web activities – and on learning what is happening in the world at the international, national, and local levels. Another venue which has been transformed by information technology is business and commerce. Thomas Friedman’s book, “The World is Flat: A Brief History of the Twenty-first Century”⁷ details the ways in which information technology has transformed the way in which we produce goods and services. The ten forces Friedman identifies that have been instrumental in the generation of a new world of commerce all pertain to information technology. The various anecdotes in the book are not about ways in which business people have made use of IT to automate their existing practices. Rather, they are instances of Handy’s upside-down thinking.

Information technology has had no less significant impact on matters that are at the heart of the mission of schools: the production and dissemination of knowledge and the nature and relevance of new and traditional cognitive skills . The most obvious implication of the information revolution in this regard is the expansion of knowledge. Walter Ong estimated that at the beginning of human history knowledge took from 10,000 to 100,000 years to double. Later it took from 500 to 1000 years to double. Currently, it is doubling in 15 years or less.⁸

Yet the significance of information technology is not just that knowledge is being produced at a more rapid rate, it is also that our conception of the nature of knowledge is being changed. The literary tradition, and particularly the technology of the book, profoundly influenced the way in which people have thought about knowledge for several centuries. Print tends to make knowledge seem like a historic product. In this formulation, knowledge is something that

comes from the past work of scholars and scientists. The structure of the book was a dominant metaphor for the structure of knowledge. The book is linear. It is divided into chapters, each of which contains a cohesive segment of the whole of it. The order of the presentation is governed by a logic that has a semblance of immutability. The book has heft and the words printed on a page have durability and permanence. The nature of the book as the vehicle for disseminating knowledge has had strong influence on how we think of the nature of knowledge. The characteristics of the book become the characteristics of knowledge.

Information technology permeates the contemporary conception of knowledge. What we as humans need to know and be able to do to be productive members of society has been affected in deeply pervasive ways by ICT. The computer screen and the Internet are replacing the book and library in where and how knowledge resides in our culture. The dissemination of knowledge using print has obscured the dynamic and even disorderly nature of the process by which it is created. Knowledge becomes a network of concepts with many connective pathways with more recognition of the dynamism and non-linearity of knowledge. The electronic tradition, like the oral tradition, is much more congenial to a communal approach to the construction of knowledge than is the print tradition.

At the heart of the difference between a literate and an electronic culture is the shift from a contemplative to an experiential method of acquiring information about our world. In a writing culture, human beings learn by pulling away from what is happening around them and reading about events, concepts, facts which another person has abstracted and structured. An electronic culture, on the other hand, puts the person in the midst of the experiences that often are raw, unprocessed and, to use computer lingo, real-time. The orderliness and “one step back” character of reading is in contrast to the untidy and “plunge into it” nature of electronic experiences.

Our own preferences regarding the literary vs. electronic issue are less important in terms of doing what is best for children in our schools than contending with the realities of life as it is. Schools and the curriculum they contain ought not be museums dedicated to preserving a form of the culture that no longer exists. Yet, the presence of computers in schools can be, and often has been, merely cosmetic. It would indeed be perverse if schools would remain the one place in our society which are bypassed by the transformation impact of ICT on the creation and dissemination of knowledge. When there is understanding in our schools of how ICT has affected the creation, dissemination and use of knowledge, we will see consequences of ICT in the curriculum even when we do not see students using computers since this understanding will affect the nature and structure of the curriculum.

In *Deschooling Society*, which was written in 1970, Illich proposed his alternative to school. Chapter Six, presents his conception of the social resource which would substitute for schools. The remarkable Chapter is called, "Learning Webs." What he has to say is so remarkably prescient that I am compelled to quote at length:

In a good educational system access to things ought to be available at the sole bidding of the learner, while access to informants requires, in addition, others' consent. Criticism can also come from two directions: from peers or from elders, that is, from fellow learners whose immediate interests match mine, or from those who will grant me a share in their superior experience. Peers can be colleagues with whom to raise a question, companions for playful and enjoyable (or arduous) reading or walking, challengers at any type of game. Elders can be consultants on which skill to learn, which method to use, what company to seek at a given moment. They can be guides to the right questions to be raised among peers and to the deficiency of the answers they arrive at. Most of these resources are plentiful. But they are neither conventionally perceived as educational resources, nor is access to them for learning purposes easy, especially for the poor. We must conceive of new relational structures which are deliberately set up to facilitate access to these resources for the use of anybody who is motivated to seek them for his education. Administrative, technological, and especially legal arrangements are required to set up such web-like structures.

Educational resources are usually labeled according to educators' curricular goals. I propose to do the contrary, to label four different approaches which enable the student to gain access to any educational resource which may help him to define and achieve his own goals:

1. Reference Services to Educational Objects-which facilitate access to things or processes used for formal learning. Some of these things can be reserved for this purpose, stored in libraries, rental agencies, laboratories, and showrooms like museums and theaters; others can be in daily use in factories, airports, or on farms, but made available to students as apprentices or on off hours.
2. Skill Exchanges--which permit persons to list their skills, the conditions under which they are willing to serve as models for others who want to learn these skills, and the addresses at which they can be reached.
3. Peer-Matching--a communications network which permits persons to describe the learning activity in which they wish to engage, in the hope of finding a partner for the inquiry.

4. Reference Services to Educators-at-Large--who can be listed in a directory giving the addresses and self-descriptions of professionals, paraprofessionals, and free-lancers, along with conditions of access to their services. Such educators, as we will see, could be chosen by polling or consulting their former clients.⁹

The educational utopia that Illich envisioned is now a commonplace feature of our lives. All of us have had ample experience in using the Web (now as a proper noun) in all of the ways that Illich described. Schools of today, more or less, permit students to use the Web in these ways. Yet, structural aspects of schools as they now exist constrain the capability of students to derive the full measure of benefit from the networking and learning webs which are possible and which can be used in an unfettered manner outside of school.

The need for any particular skill is contingent on life situation in both time and place. Few people in our society rely on their ability to hunt for food to feed themselves. Today, for many, skills at being an effective shopper at the local supermarket are more valuable than the ability to kill an animal for food. Information technology causes some skills to become less valuable at the same time that new skills emerge. Many factory workers who worked with their hands and wrenches, drills, and welding tools no longer require skills with those tools but must now teach their hands keyboarding skills to work with computer programs that control machines that do what they once did with their hands. The value of being able to spell by memory every word a person uses in writing is less important when the individual writes on a word processor with spell check. While the availability of spell checkers does not mean that we should stop teaching spelling, it does mean that we need to recognize curricular implications of spell checkers in considerations of what to teach about spelling. The task of searching information bases did not exist in any significant fashion a few decades or so ago; it is now a skill of great value. Learning which buttons to press to use a Web browser is not difficult. Skill in finding the most appropriate or useful information for the task at hand and in being able to assess the validity of the information is as valuable a skill as it is sophisticated.

School reformers should recognize and accept the fact that the hegemony of the schools in society as the educational force for our young has ended. Thus, we are actually in an era probably more like the 18th century than the 19th and early 20th centuries as pertains to the education of our youth because of the ubiquitousness and potency of ICT in the non-school hours of the day for our young people. Recognizing and accepting this reality does not at all mean that we fold our tents. It is not beyond the realm of the possible that we could use ICT in schools in ways that approximate the potency of those in the popular media.

If school reform becomes merely a quest to raise conventional achievement test scores or a campaign to get teachers to use computers in their existing

instructional program or even only to do a better job of teaching an outmoded curriculum – the “reforms” will do little to ensure the relevance of schools as an educational venue for our children.

What My Experiences and Reflections Have Taught Me – So Far – About School Reform.

My involvement with school reform has not just been “academic.” I have been involved with school reform issues in a hands-on capacity at the national, state, and local levels over the duration of my career. My most intense experience was working for about seven years as co-director of a major school reform project in a secondary school in my city. In what follows, I will share what I have learned about school reform. This is a progress report of sorts because I am not finished learning.

As a person who has spent many years in academe, I know how to write with balance: “on the one hand” – “on the other hand!” Yet, what follows is contentious. Even so, I make no claim of omniscience and appreciate that I may not have always taken the right lessons from my experience. I welcome challenges that will help me to clarify, modify, or abandon the ideas that follow.

One: Crisis

Reform, which is consistent with the way I have defined it, begins with the recognition of a crisis. In a speech to students at the Harvard Business School, Louis Gerstner, the former CEO of IBM, had this to say, “No institution will go through fundamental change unless it believes it is in deep trouble and needs to do something different to survive.”¹⁰ Moving from what has worked in the past to a new way of doing things carries considerable risk. No rational person could be expected to venture into this territory unless they perceived that the wolf really was at the door!

The dramatic changes that occurred in many businesses over the past several years were a consequence of recognizing that the survival of the corporation was at stake. Change has particular appeal when the other choice is death. Ivan Illich notwithstanding, there is little plausibility for a “deschooling” of society. In addition to the teaching-learning function of schools, they also serve an important custodial function by furnishing a safe place for children to be during daytime hours. This function of schools provides a secure anchor for schools in society. The crisis in schools is less about survival of the organization and more about critical deficiencies in the accomplishment of the educational mission of the schools which, unfortunately, may have less power to galvanize action that does the possibly that the organization may cease to exist. Thus, those who believe in the necessity of school reform face a much tougher task than that which faced corporate executives who led efforts to make fundamental changes in their organizations. Since reform

and other terms used synonymously such as restructuring, systemic change are used so loosely it is necessary to listen between the lines to know if persons calling for reform are calling for transformative change or only for some modification of the existing way of doing things which will generally preserve the status-quo. Gerstner's admonition applies to school reform: No school reform will take place unless those in position to act believe that the schools are in deep trouble and something extraordinary needs to be done in order to make the fundamental needed changes.

Two: Vision

All successful school reform involves vision. We often think of visionaries as persons who understand what the future holds and construct their proposals based on such an understanding. But no one can see into the future. No matter. Futurists have little to offer those who are involved with school reform. Rather, we need "presentists!" We need people who can look at what is here right now and can grasp the meaning of the "here and now" as a basis for the reformation of schools. The task of being able to see the present and to understand the implications of what is happening all around as such relates to what needs to happen in schools is no small order. The need for school reform springs from the disconnect between the conduct of schooling and the nature of how we create knowledge, disseminate knowledge, work, play, and maintain the processes of society point in the ongoing story of human civilization. It is how this happens at present – not how it has happened in the past or how we guess or might like to think it will happen in the future – that should guide our approach to school reform. Neither nostalgia nor fantasy are good bases for creating the schools which are young people need.

Three: Blueprint

School reform is unlike preparing a Soufflé Grand Marnier or constructing a series of buildings based on the blueprint of a master architect. There is no one recipe or one detailed blueprint that would enable facile replication of the schools which are needed. Building new schools is more like composing a symphony or writing a book developing in that there are many good ways to accomplish the task. Or to use an architectural simile, it is like constructing a building based on the specifications for what the space inside the building is intended to accommodate. So, for example, there are many good but quite different concert halls. While each has its own individual personality, all good concert halls have four characteristics: good acoustics, clean sight lines, comfortable seating, and good patterns of ingress and egress. In the same way, the schools which result from successful school reform will have diverse individual personalities since they will take advantage of the particular human resources available to them, and they will be harmonious with their social context within which they exist. As a consequence they may look different – one from another. The similarity is in the consequences of reformed schools in terms of the found what happens within

them – the macro design specs - and because of them – the outcomes for those who teach and learn in them.

Four: Evolution

Popular “wisdom” has it that significant change in schools takes time. Incrementalists counsel us to be patient and to take one step at a time. There are two things wrong with the advice. The first is that in school reform initiatives slow change is inevitably small change. I have been involved in a number of reform efforts where gradualism was the watchword and in none of these instances was there success in generating an evolutionary path which resulted in substantial reform. When school reformers have succumbed to the admonishment to settle for a first step, they have generally come to see that the first step was the only step. If the change is compatible with the existing organizational structure it may be accepted and successfully implemented. In such instances the change does not provide any momentum. The expectation that dissonance between the cautious steps taken and the existing organizational structure might prompt efforts to change the fundamental aspects of the structure is unfounded. Organizations respond to such dissonance in the same way that organisms respond to toxins. In either case, antibodies are produced that cure the pathology.

Proponents of ICT have been particularly afflicted by the evolutionary or incremental orientation. In the eighties microcomputers in the schools were expected to be the springboard. In the nineties it was networking and the Internet. More recently it has been wireless and one-to-one computers. In each instance, the technology has been incorporated in the school in a manner that preserves the status-quo.

The second thing that is wrong with gradualism is that we must then accept the fact that we are not providing the students who are currently in our schools with the schooling they deserve while the slow process is occurring. If there is belief that we face a serious crisis then there will also be acceptance of the fact that time is not in our favor and that the welfare of the children in our schools requires us to proceed with dispatch.

Five: Curriculum

The nature of the existing curriculum in schools is at the heart of the school reform issue. The disinclination to “take on” the issue of curriculum in school reform is not difficult to understand. Curriculum reform involves the consideration of the totality of human knowledge and skills, of all of the arts, sciences, and technologies of the culture. Creating a curriculum entails selecting what from that totality is to be included or excluded in the curriculum, and deciding when and how over the school years the student will encounter all that is included.

Since the decision about what not to include is more difficult than the decision about what to include, the curriculum is generally bloated. Alfred North Whitehead's two "educational commandments" would serve us well, "Do not teach too many subjects, and again, what you teach, teach thoroughly."¹¹

I have participated in hundreds of conversations about the use of ICT in schools and in these conversations the term "curriculum integration" is almost always prominent. The call for "curriculum integration" comes from those who seek to move computers and other allied technologies from incidental accoutrements, a side-show, to the mainstream of instructional work of schools. For those who believe that the existing curriculum is generally sound, the notion of curriculum integration makes good sense. For those, like I, who have serious problems with the existing curriculum as we generally find it, the task of figuring out how to integrate ICT into the existing curriculum is an unfortunate diversion from the real task. Integrating ICT into the curriculum will do little if anything to make irrelevant curricula relevant, antiquated information fresh, or useless skills valuable. I use the term "curriculum disintegration" to indicate the need to break open the curriculum, to not accept it as a given, and to reconsider what kids in our schools need to learn as a pre-requisite to the consideration of where and how we insert ICT into instruction.

Andrew Seaton summarizes the needed curriculum changes being advocated by a substantial body of informed opinion. This list provides the curriculum design specifications I referred to when I spoke about blueprint.

There is growing consensus that education must extend its traditional goal of student mastery of subject-centered scholastic knowledge, to include the development of individuals who can prosper in complex and changing social, cultural and economic worlds. The 'inner intent' of reform efforts being made and advocated widely, could be characterized by these key principles: (1) emphasis on exit outcomes (prospering in the real world); (2) active learning for intellectual quality (constructivism); (3) personal responsibility for own learning and behavior (genuine engagement); (4) individual meaning and relevance (not one-size-fits-all); (5) real-life purposes, roles and contexts (integrated curriculum); (6) links with community for mutual capacity building (productive partnerships in a learning community); and (7) extension of pedagogical repertoires (teachers moving from 'sage on the stage' to 'guide on the side').¹²

The framework for the curriculum in U.S. schools originated in three committees established by the National Education Association in the last decade of the 19th century: the Committee of Fifteen on Elementary Education; the Committee of Ten on Secondary School Studies; and the Committee on College Entrance Requirements. As William F. Pinar, a leading expert on school curriculum and his colleagues stated, " These reports cast a mold for the school curriculum out

of which it has yet to break free.”¹³ All three committees were dominated by subject matter specialists and they focused on administrative aspects of the curriculum such as the subjects to be studied, the duration of the courses of study, the age at which each study should begin, and the gradation of content according to the age of the student.

Decisions made by subject matter specialists about which facts, concepts, and skills should be included in the curriculum, the relative importance of the various aspects of the content, and the proper sequencing of the facts, concepts, and skills, are based on the conventional and presumptive (at least for subject matter specialists) logical structure of the disciplines. However, it does not follow that the structure of the curriculum should have a one-to-one correspondence with the conception of subject matter specialists about the structure of the disciplines. A subject matter curriculum framework may be adequate when the purpose of the school is to challenge students to achieve the content of the curriculum as a means of gaining credentials that are awarded based on scholastic achievement. This approach is far less useful when the task of the school is to enable students to have knowledge, skills, and dispositions whose functionality is external to schools.

The worry of some that a curriculum such as that which conforms to the specifications in the Sutton quote may be vacuous and may coddle and entertain more than educate is legitimate. It even may be that a subject matter curriculum may do less harm than a constructivist and integrated curriculum that focuses on outcomes when it is badly designed or executed. The solution for a rigid overloaded subject matter curriculum is not a fuzzy, loose process curriculum devoid of intellectual content. However, rejection of the subject matter framework for the curriculum does not necessarily imply a rejection of subject matter or an abdication of rigor. Domain specific or content knowledge is a critical aspect in intellectual development. So the answer to the curriculum framework reform question does not lie in either the subject matter camp or the process camp but in a hybrid of them that is consistent with what is now understood about the intersection of domain specific knowledge and effective metacognitive strategies.

Six: Assessment

Anyone who wishes to stifle school reform could have no better way to do so than to keep control of the metric which is used to determine whether students are being successful. Nothing can kill school reform faster and better than the use of conventional achievement tests as the assessment “coin of the realm.” A good example of the pernicious effect of conventional standardized tests on school reform in the U.S. is No Child Left Behind. The need for schools to show that their students have scored well on these tests has pushed aside efforts at school reform.

There are four questions that should be the focal questions for assessment of when there are serious efforts to accomplish school reform:

- Can you do it?
- Do you understand it?
- Can you use it?
- Do you value it?

These questions replace the question: Do you remember it?

There is no dearth of assessments which are alternatives to traditional standardized achievement tests and it is certainly possible to create alternative assessment procedures which are reliable and valid. The biggest obstacle in making use of more appropriate assessment approaches which are compatible with reform is not technical but social. The task is to convince parents and politicians that the rejection of standardized testing is not about shirking accountability but about achieving assessments which measure what really matters.

Seven: Participation

The question: Should reform be top down or bottom up? is not useful in considerations of school reform since the question implies that this is an either/or proposition. Further, the question implies that we know who the top people are and who are the bottom people? It is practicality more than equalitarianism which has led me to conclude that successful reform needs to have the support and active participation of the people who can make it succeed or kill it. Since each situation is different there is no way to have a prescription on the mix of policy makers/administrators vs. practitioners who need to be invested in the reform effort. It is not a given that any particular school board member, legislator, or administrator has more potency in determining the fate of the reform – for good or ill – than any particular teacher, parent, or community member. Further, it is important that the participants share a reform agenda rather than a belief that reform is needed. There can be a spurious consensus about reform when the conversation is at the level of generalities. Reforms build on such a basis will likely collapse. The persons involved in a reform effort need to share a reasonably similar sense of the concrete aspects of the nature of the crisis and also a similar conception of the new form which will result from the reform.

Eight: Opposition

School reform is not a good occupation for anyone who wilts in the face of strong or even harsh opposition. Opposition is inevitable. The lack of opposition more likely means that the reformers are not making significant change rather than that the reformers have done it so well that the opposition has been quieted.

I have learned from painful experience that what seems so obviously a good thing for our schools may seem terribly wrongheaded to others. How, for example, could any reasonable person be opposed to efforts to improve the higher order thinking skills of young people in our schools? Could anyone take the stand that we need to continue an emphasis on lower order thinking skills? An article called "Whats (sic) wrong with higher order thinking skills?" by Michael Jacques a "concerned parent" in West Allis, Wisconsin on the Website of the Arizona Parents for Traditional Education shows we should take nothing for granted with regard to opposition to school reform. The article includes the following statement:

In the past schools would teach about 70-80% Lower Order Thinking Skills by teaching facts and covering a broad base in education. In the past schools would teach 20-30% Higher Order Thinking Skills. Today schools claim that rote memory as in Lower Order Thinking Skills is mundane, boring and a waste of time, especially since information is constantly changing and rapidly increasing. In some circles learning to spell correctly is a waste because we now have computers which can correct spelling. In some circles learning the math facts is a waste because we now have calculators.

Schools now believe that we should devote 70-80 percent of our time to the teaching of Higher Order Thinking Skills. Schools are accomplishing this type of teaching through thematic teaching (teaching to a common theme in all subjects). That is integrating subject matter across a number of different subjects. Instead of studying specific subjects we have children participating in groups (called cooperative learning) in the performance of a big project which includes multiple disciplines. Each group of children in a class performs one phase of the project. This is very limiting in an overall knowledge base since all of the groups have only participated in a small part of the overall project, and each individual child has participated in an even smaller part of the project. This is also very limiting in knowledge because it does not cover an in depth study of the individual subject matter as has been done in the past.

Teaching Higher Order Thinking Skills sounds like a great idea. Participating in cooperative group projects can be fun and exciting. But, there will be a terrible lack of in depth study of a broad range of subject matter. Consequently children will do poorly on the norm reference standardized tests and thus there is a call to replace the standard norm reference tests with what is called the new "authentic assessment tests".¹⁴

It is certainly necessary to listen carefully and sincerely to criticism and to make modifications which are warranted. It may also be necessary at times to accept some modifications on the basis of political trade-off. Yet, those involved in

reform need to recognize that at some point they may accede to the political realities by watering down the reform until all that is left is the water.

In Conclusion

The 19th century American educational reformers were galvanized by a sense of dramatic and disturbing changes which were occurring in their country. They shared a deep sense of crisis. Indeed, many of them felt that the survival of the Republic was at stake. Their response was the formation of the American Public School which constituted a radical shift from the way that schooling in America existed at the time when they began their work. They succeeded. The American Public School played an important positive role in American society for a century and a half.

We too, like them, live at a time of deeply conditions which transcend national borders. They feared for the future of their Republic. We fear for the future of the planet. As H.G. Wells reminds us, it is education that is in the race with catastrophe. We have been considering information and communications technologies. Is there anything more needed in our world at present than for those who will journey through the 21st century than to be informed and to be able to communicate? To the extent that any of us can play a part in causing school reform in ways which contribute to an informed citizenry – an enlightened citizenry and to helping ensure we have a generation of young people prepared to meet and interact with one another with understanding and respect, we will have done what we need to do ensure that, indeed, the twilight of the 21st century will be better than its dawn.

References

- ¹ Comenius, J. A. (1967). *The Great Didactic [Didactica Magna]*. New York: Russell & Russel, pp. 79 – 81.
- ² <http://personal.pitnet.net/primarysources/schoollaw1642.html>
- ³ Illich, Ivan (1970). *Deschooling Society*. New York: Harper and Row.
- ⁴ Whitehead, Alfred North Whitehead (1929) *The Aims of Education and Other Essays*. New York, The Free Press, p.1
- ⁵ Handy, Charles B. (1989) *Age of Unreason*. Boston, Harvard Business School Press, p3.
- ⁶ Handy, Charles B. (1989) *Age of Unreason*. Boston, Harvard Business School Press, p 9-10.
- ⁷ Friedman, Thomas L. (2005) *The World is Flat*. New York, Farrar, Straus and Giroux.
- ⁸ Ong, W.J. (1977) *Interfaces of the Word: Studies in the Evolution of Consciousness and Culture*. Cambridge, MA: Harvard University Press.
- ⁹ Illich, Ivan (1970). *Deschooling Society*. New York: Harper and Row.
- ¹⁰ Friedman, Thomas L. (2005) *The World is Flat*. New York, Farrar, Straus and Giroux, p. 282.
- ¹¹ Whitehead, A.N. (1949). *The Aims of Education and Other Essays*. New York, Mentor Books, p. 14.
- ¹² Seaton, A. (2002). "Reforming the Hidden Curriculum: The Key Abilities Model and Four Curricular Forms." *Curriculum Perspectives*. Vol. 22, no. 1, April, p. 9.
- ¹³ Pinar, W.F., Reynolds, W.M, Slattery, P., Taubman, P.M. (1995). *Understanding Curriculum*. New York: Peter Lang. p. 75.
- ¹⁴ Jacques, M. "*Whats wrong with higher order thinking skills.*" http://www.theriver.com/Public/tucson_parents_edu_forum/us.html#Skills