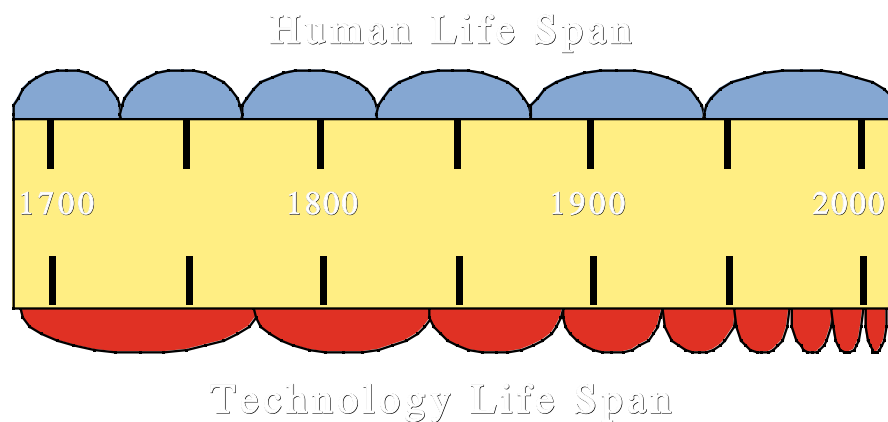


Meeting the Challenge By Improving Education

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PART I. Why should we change what we have been doing?

Malcolm Knowles' diagram tells the story very well:



While human life spans have been increasing, technological life spans have been decreasing. Our grandfathers could learn from their fathers most of the things they needed to know to deal with the world they would inherit. In their day education was considered to be a process for passing knowledge from one generation to another. Today this is no longer enough. There are too many new things to understand, which are not known by the adult generation: DNA, the Internet, computers, genetically modified plants, global financial systems, cloning of animals, to name but a few. What was science fiction a half century ago is commonplace today.

The *political*, *financial* and *sociological* changes that flow from these technological advances now impact our lives in ways never anticipated

Global financial systems link all parts of the world. A financial crisis half way around the world threatens your life savings in the bank around the corner from where you live. If you earn your living, as your forefathers did, selling the oil from the olive trees you inherited, the price for your olive oil may fall because

someone, in another land, now produces a synthetic product more cheaply and just as good.

No one is immune from the consequences of change. Only a few years ago, when there was a cold war, some countries could hide in the shadow of one of the so-called-super powers and collect subsidies intended to guarantee their friendliness. Today, in the new economic disorder, there are no places for them to hide.¹

Individually we face new kinds of problems. For one thing, whatever we now know how to do, it is likely that in a decade we shall be doing something else, or doing what we now do in a totally different way. We all now must learn as we go. Whether we want to or not, we must now become engaged in continuous education. The existing educational system did not prepare us for this new kind of life.

The Changed Requirements for Employees

To understand the nature of the change, consider this: A about ten years ago the leaders of a number of successful US companies were asked to describe the attributes they wanted to see in the people they hired. The results are contained in the SCANS reports² listing the following basic skills employers wanted to see in people they hire.

The Basic Skills

Basic Skills--reading, writing, arithmetic and mathematics, speaking, and listening

Thinking Skills--thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning.

Personal Qualities--individual responsibility, self-esteem, sociability, self-management and integrity.

The SCANS report breaks very sharply from the traditional views associated with the Taylor philosophy of management. Industry no longer expects that incoming employees will be skilled in the latest technologies. The pace of change makes this impossible. By the time the schools can acquire the latest equipment,

1 For a dramatic view of the consequences of globalization of information, finance and access, see "The Lexus and the Olive Tree", by Thomas L. Friedman (Farrar Straus Giroux, New York 1999)

2 What Work Requires of Schools. A SCANS report for America 2000 The Secretary's Commission on Achieving Necessary Skills, U. S. Department of Labor, June 1991

it will be obsolete. They want people who are autonomous learners, who know how to learn on their own.

In addition to the list of basic skills, the industrialists listed the following set of competencies:

Competencies

Resources--allocating time, money, materials, space and staff;

Interpersonal Skills--working on teams, teaching others, serving customers, leading, negotiating, and working well with people from culturally diverse backgrounds;

Information--acquiring and evaluating data, organizing and maintaining files, interpreting and communicating and using computers to process information;

Systems--understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems;

Technology--selecting equipment and tools, applying technology to specific tasks and maintaining and troubleshooting technologies.

While the list of basic skills is not new to most educators, the above list of competencies will be. To begin with, they do not fall into well-defined disciplines. Nor are they interdisciplinary. Teachers cannot continue to teach in isolation.

Economic Necessity – Another Powerful Reason for Change

As we provide better resources for education, the costs rise. If we are to spend more on training teachers and introducing new material, where are we to find the money? This is the same dilemma facing the automobile manufacturers when they found that they were required simultaneously to reduce cost and improve quality. They discovered that when they learned how to improve their product, their costs went *down*, not *up*.

The reason, in hindsight, was easy to see. Poor quality of the product results from poorly controlled processes. There were hidden costs in rework and scrap. Many resources were wasted without people realizing it.

The same thing is true in education. We do not keep track of the amount of time teachers spend teaching something to youngsters who did not learn it the first time. There are no records on the extra costs associated with disciplinary action. Just as in the auto industry, people tend to accept this waste as part of the "cost of doing business".

Armand Fiegenbaum said that within every factory there is a hidden factory. This hidden factory is busy correcting the mistakes of the visible factory. He estimated that the budget of the hidden factory was about 20% of the whole budget. I do not have the figures but I suggest that the same may well be true of education.

Ivan Webb, Principal of the Riverside Elementary School in Launceston, Tasmania, has been applying quality methods for about a decade. His observation is that the students at the bottom 20% of the class contribute about 90% of the cost of running the school! He remarked that the students at the top do not cost, they pay! By paying special attention to the students at the beginning of their educational careers, he has reduced markedly the cost of running the school.

I believe, but do not have the data to prove, that the improvement of education, according to the methods I shall propose, will not only produce a better result, it will also result in lower costs.

Although I am among those who press for greater expenditures on education, I recognize that politically this is not always possible. There are limits on how much society is willing to spend on education in comparison with other social needs. In my home state of California we made some poor choices. Today the budget for prisons exceeds the budget for education. The inhabitants of our prisons are overwhelmingly the people for whom the educational system was a failure.

New Tools for the Transformation...Quality Management and Instrumental Enrichment

If we propose to deal with the basic questions of education anew, using the same tools and ways of thinking that we have used in the past, then it is unlikely that we shall come out of the process with anything very much different from what we have now. We need to approach our problem differently. Fortunately the last century has produced two significant developments. One development is quality management, the theme of this conference. The other Feuerstein's Instrumental Enrichment, a new approach to understanding and influencing the learning process.

When applied to education, both approaches change the emphasis from teaching to learning. Quality management methods show teachers how to manage the learning process so that the students take much more responsibility for their outcomes. Feuerstein's methods give teachers greater insight into the learning process so they can help students become self-correcting learners.

Quality management essentially changes the style of management from "top down direction" to "leadership from the top". Both leadership and management are required; management to see that what is agreed to be done actually gets done; leadership to see that when things need to change, they change in a coherent way. Top down management might have been suitable in

an era in which change was very slow. But today, when change occurs very rapidly, the people at the top of a large organization do not really know what is happening at the lower levels and they cannot mandate the necessary changes. The people at the bottom, who know the problems, are powerless to change the system within which they work. The methods of quality management were designed to deal with just this kind of situation. Through quality management principles, the people who have the power to make changes can work harmoniously with the people in the front line who know what is happening. Quality management provides the philosophy, the tools, the techniques of analysis and communication that enables all levels of the enterprise to work together.

If we are to improve education, we must change what goes on between a teacher and a learner. But what teachers can do in the classroom is severely constrained by how the managers of the educational system manage. My experience tells me that the existing system of management in education will kill change, for it is a "top down" system, put into place in an earlier era. It was designed to see that the system functioned according to the ideas of the people at the top. Today we have a strong "top down" approach to management at all levels of the educational enterprise. Quality management can change that.

Quality management will foster change in the educational system as a whole. Applied in the classroom, quality methods make it possible for teachers to put greater responsibility on the students. Feuerstein's Instrumental Enrichment (FIE), provides new insights into how learners learn and therefore make it possible for the students to accept and deal with their new responsibilities. Through FIE the teacher and learner, together, can understand the learner's difficulties and devise strategies for dealing with them.

Thus, if we are to improve education we must consider how to change:

1. The learning process is managed in the classroom
2. How the educational system, from top to bottom, is managed

These changes must be made together; one without the other will not suffice. We must not expect that a continuation of the classical methods of running a classroom or of running a school will allow us to achieve our aim.

An Ambivalence and Its Resolution

We are all ambivalent about our aspirations for our children. On the one hand, we would like them to continue on, when we are no longer here, as extensions of ourselves, carrying on our traditional beliefs and values. We often think of them as learning what we learned and the living the lives we have lived. Feuerstein has called this way of thinking an attempt to cheat death³. This belief has

³ Reuven Feuerstein and Mildred B. Hoffman, "Intergenerational Conflict of Rights: Cultural Imposition and Self Realization" in Viewpoints in Teaching and Learning, Journal of the School of Education, Indiana University v58, N 1, Winter 1982

important survival value, it is why the members of a tribe care for one another's children.

On the other hand, we are aware that the education we received is not going to be adequate for the world in which they must live. We know that they will have to learn things we do not know. When we think about the uncertain future, we realize that our children deserve to become more than simple carbon copies of ourselves. They must be different if they are to survive.

But how different? Life is more than what is found in books. What of our own experience is important enough that we should insist that it be passed on? No parent raising a teen age daughter or son can ignore these questions. Today we put into the hands of teen-agers more power and resources than were available to the kings of yore. Our children have access automobiles with the power of 200 horses, to automatic firearms, to computers connected to the internet, to cell phones and tomorrow, who knows what will be available to them?

We need a framework within which to answer these questions. I suggest that such a framework is provided if education is examined from these four different perspectives:

1. Knowledge – which enables us to understand. Knowledge is concerned with what goes on inside the brain. Knowledge enables us to relate things to one another, to provide a framework within which we can integrate new ideas and connect them to what we already know.
2. Know-how – which enables us to put knowledge to work. Know-how is concerned with making things happen. Know-how goes beyond understanding; it is concerned with doing. While the knowledge resides in our heads; know-how goes beyond thinking and involves action.
3. Wisdom – which enables us to decide whether or not to do it. Wisdom makes it possible for us to connect what we do with what happens to ourselves and our environment. Wisdom enables us to apply our intelligence to new situations. Intelligence is what we use when we do not know what to do.
4. Character – which converts us into human beings, fit to live nearby. Character refers to such concepts as integrity, honor, honesty, respect, courtesy, civility, humility, responsibility, duty, accountability, fair play, empathy, compassion, kindness, unselfishness and teamwork. The absence of character makes us a menace to society⁴.

Looking at education from these four perspectives, we can see that what has been called wisdom and character do not change with advances in technology; it is the knowledge and know-how which are new. The questions which test our

⁴ The Josephson Institute of Ethics provides materials for teaching character in the classroom. See their website: www.charactercounts.org or inquire via e-mail to: ji-pub@primenet.com

wisdom and character have changed, but the fundamental way in which we deal with these questions has not.

From time to time I enjoy reading science fiction or watching videotapes of "Star Trek. In science fiction, while the technologies and the problems raised are different, the set of characteristics that make the actors interesting are the character traits listed above.

As I observe education systems in different places in the world, it seems that they begin in Kindergarten with the development of Character and Wisdom, and as students move to higher grades of elementary education, the emphasis shifts, to the acquisition of know-how. Finally, at the University, only knowledge is prized. Only in athletics are there still some remnants of an interest in character building, and even this seems to be receding as the sports world becomes more and more commercialized.

Today, as we examine industry we see that this neglect of the development of character and wisdom has many high costs.

In part 2 of this essay, we shall consider how Feuerstein's instrumental enrichment provides one part of the answer.

In part 3 we shall examine how quality management provides another part of the answer.

In part 4 we shall discuss how to weave these two approaches in the transformation of education.