VISIONS, VALUES, TECHNOLOGIES, AND SCHOOLS

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The Questions Posed

Should visions be used to guide education (especially public education) in the 21st Century? If so, what might that vision (or those visions) be, and what curricula and structures should flow from them?

Function of Education/Role of the Teacher

I always say, and so I will say again, that the function of education and the role of the teacher are always and everywhere the same. The function of education is to help students acquire the attitudes and skills necessary to become effective members of the future society in which they will live. The role of the teacher is to be a living example of such a person - to model the attitudes and skills necessary to be an effective member of the future society in which the students will live. So, the basic and first question for any teacher, administrator, educational policy maker, or parent should always be: "What might future society be like? What attitudes and skills should students learn now in order to be effective in their futures?" [1]

No teacher should dare enter a classroom (or a website); no administrator should place a teacher in a classroom (or authorize a website); no educational policymaker should train a teacher or devise a curriculum (or prepare a website); and no parent should send her child to a school or website until each has done her best to survey the futures of the student, and then trained the teachers, prepared the curricula, and established the support systems relevant to the futures of that student.

Every day of every class should start, not with a prayer or a pledge to allegiance to whatever god or nation is in vogue at the time, but with the question, "How is what I am about to teach, or to learn, relevant to the futures of those who are about to learn it? And how can I be sure?"

That is to say we must learn to pledge our allegiance, not only to the past or the present, but also and at least in equal measure to the needs and wants of future

generations [2]. We should not continue to teach what has been taught in the way it has been taught merely because that is the way we learned it and thus that is the way it is easiest to still teach, but because we have some good reason to believe that what we teach is what one needs to know in her future. We need to ask similar questions about what we do not teach, and be as certain as we can about why we do not explicitly teach it.

What was necessary to be a successful member of society, and what it has meant to be a teacher has changed over time as societies have changed. For tens of thousands of years, humans lived in small, homogeneous bands and tribes. All information was transferred by watching and imitating, or by speaking and listening. We still learn best that way. We are biologically programmed to learn by doing. As someone said, "I hear and I forget; I see and I remember; I do and I understand."

Even with the advent of writing, most people continued to learn in this way, by direct experience, but some began to gather around the handful of scholars who owned the few handwritten texts available, to study and copy the information from them. The advent of writing was disastrous for oral societies: disastrous for the information that was important to know, for the old teachers and students, and for the way teaching and learning was carried out. I come from a part of the world, the Pacific Islands, where the memories of what happens when oral societies encounter literate societies is still fresh - and bitterly resented [3].

With the printing press, we entered again something new. The printing press made it possible for many more people to have access to many more texts and ideas, and the human and social consequences of this were even more extreme. For example, the Roman Catholic Church lost its monopoly on truth, Latin lost its status as a universal language, divine monarchies were overthrown and representative governments, based on written constitutions and laws, were invented [4]. Most importantly, industrialism arose, and the modern school system was created to transform peasants into workers and soldiers, or into managers and generals. Scientific research and technological development became a central part of societies in order to create the guns and goods modern capitalism required [5].

And now we are in the throes of another transformation of and by communication technologies which began first innocently with the telegraph, telephone, and camera, then the radio, and black and white and then color motion picture, and then first broadcast black and white and then cable color television, first audio and then videotape, then computers, satellites, networks, electronic memory, the internet, PDAs, soon we'll have biochips, molecular- and nano-technologies, and teleportation, and then…. Well, the transformation is extremely fast and far from settled [6].

In the meantime, the formal education struggles unsuccessfully to keep up. Yet all reforms I know of in the US are ultimately shams. As John Goodlad said after his survey of many attempts at educational reforms: "'Back to Basics' is where we have always been. My grandmother would be quite at home in any classroom anywhere in the US" [7].

Or as David Snyder put it more recently: "In more than a decade and a half since the publication in 1983 of *A Nation at Risk* [8], no major national reforms have been adopted by US public schools, and there has been no significant improvement in overall student achievement. During that same period of time, major business firms in almost every US industry have 'reinvented' themselves, through delayering, reengineering, disaggregating, and realigning.

"The leaders of educational reform today, by comparison, have no such widely accepted repertoire of successful reforms--or reformers--to turn to at this moment of accelerating innovation. In fact, there is not yet a consensus among educators that truly transformational change is necessary. Currently, for both K-12 students and for graduates of school of education, the dominant reform activity involves mandating stringent tests of student achievement and teacher competency.

"The 'standards and accountability' movement is the culmination of this twenty-year sequence of largely ineffective initiatives including the 'back to basics' movement of the early 1980s, through dress codes and school uniforms, site-based management, gender separation, reduced class size, [and] the restoration of corporal punishment" [9].

Matters recently became significantly worse when George W. Bush, against all sensible advice to the contrary, pushed though Congress during his brief honeymoon period legislation requiring standardized testing by all schools in all states of the union [10]. The results will certainly be disaster [11].

In other words, we are still simply going back to basics over and over, denying or ignoring the massive changes going on around us [12]. Of course, some people count this as good, and proclaim that educational standards in the US are on the rise [13]. Given what is also being said (I think accurately) about the "millennial" generation just emerging from high schools in the US (and in many other parts of the world) [14], it is highly likely that we will have, over the early part of the 21st Century, a highly-disciplined, hardworking, well-trained, orderly, rule-loving and adhering, highly literate, and comparatively numerous age-cohort entering a world that requires exactly the opposite of the skills and mindsets the Millennials have, preferring instead flexibility, adaptability, risk-taking, visual imaging, adaptability, creativity. Everything this emerging age-cohort does not have. A fun time will be had by all, when the Millennials hit the Blur!

Business and the military are eagerly embracing the new educational media. And there is a lot of talk and writing, and some action, about these media going on in educational circles. The hottest educational item of the last year of the Second Millennium was a statement, widely redistributed, by Arthur Levine, president of Columbia University's Teachers College. Levine recounted a meeting he had with Michael Miliken, the once and future junk bond king. Noting the growing obsolescence of formal education at all levels, Miliken's taunt was, "You guys are in trouble, and we are going to eat your lunch"[15]. Miliken has already created a hungry predator: his

"Knowledge University" which intends to invade all educational markets from pre-K to PhD.

If Miliken and all of the many new "edupreneurs" at the Virtual High School [16], the University of Phoenix [17], or Jones International University, or Unext [18], or Cenquest (or at Yale, MIT, and Stanford for that matter) have their way, and so far nothing the old establishment in the US is doing seems about to stop them, there will be fewer and fewer public school systems within a few decades. Instead, there will be three kinds of learning delivery systems [19]:
1. A few enormously expensive, prestigious, and exclusive campus-based schools which serve to socialize the rich and famous;
2. Thousands of "fast-food" learning outlets, offering "just in time", "performance-based" training at all levels and all subjects, on demand and at bargain prices, mostly over the Internet (and its successors) with the rest available wherever there is a room for rent and an instructor for hire [20];
3. And a few niche, private schools and colleges offering old-fashioned scholarship in the old-fashioned way for those still nostalgic, and able to pay, for it.

With most people teleworking from home, rather than gathering in central urban locations, "home schooling" will become the norm [21]. Day and/or night childcare facilities will exist for those who must work outside the home, or whenever parents need to travel, but the educational role of these centers will be minimal - certainly nothing like that of public schools today.

Needless to say, the liberal arts, humanities, and most social sciences will be completely marginal in this environment. Tenure and academic freedom will cease to exist [22]. Athletic programs (though the heart and soul of the American educational system now) will be taken over entirely by for-profit organizations (a process also already well underway).

In the New Economy of "The Long Blur" [23] where everything is commodified, education becomes just one more utility to be bought and sold on the open market according to the wishes of the highest bidder. That for which there is no demand, there will be no supply.

At least that is ONE alternative future emerging from the ashes of the old liberal welfare state.

Models, Media and Knowing

Many years ago, I came to realize that what we know and how we know it is completely dependent on the models and media we use to apprehend and communicate the world around us [24]. That revelation came to me first as I tried to learn how to observe and then to express political behavior through mathematical formula rather than merely in words. Like almost all social scientists of my generation, I had been trained to

be a wordsmith. Research meant, to me, reading lots of books, pulling some good bits from the books, thinking about what I read, and then writing something based on what I read and what I thought.

But I became, for a time, part of that smaller cohort who wanted to develop a real political SCIENCE, based on mathematical formulas, computer models, and statistical inference. I discovered that thinking mathematically was very different from thinking linguistically, and resulted in a very different political science from the one I knew before simply because I was now viewing the world through a different model and medium.

That awareness expanded greatly when I went to Japan, and discovered, while trying to teach political science in Japanese for six years in the College of Law and Politics of Rikkyo University in Tokyo, that I was no longer thinking or behaving as I had before. The more I thought and taught in Japanese the more fundamentally different a person I became simply because the world experienced and expressed through Japanese is different from the world in English.

When I moved from Rikkyo University to Virginia Tech, I became influenced by the British architectural group called Archigram, and I began to try to think about politics as architects and artists think - visually, and often in three-dimensional models. I spent several years trying to develop a political science based entirely on direct observation and three-dimensional models - no words at all.

However, when I went to Hawaii, I was asked to transform some of my classroom courses into television shows. In that process, I soon discovered it was not just a matter of taking the classroom content and videotaping it. I had to rethink everything I had previously done and find new ways to do it, or else not do it at all, while thinking and doing in entirely new ways as well.

Similarly with courses I have taught on radio, or entirely via newspaper or, more recently, on the web: using each new medium to teach my old courses requires each time that I completely rethink what I am doing all over again. The medium IS the message. What you know DOES depend on the models and media you use to perceive and communicate that world. Change your medium and you change your world. And not trivially, but essentially - root and branch, heart and mind, body and soul [25].

As Neil Postman mournfully put it, "Technological change is not additive; it is ecological. A new technology does not merely add something; it changes everything" [26].

The Electronic Camel

Like all the rest of the old Modern World, most educators remain captivated by the printed word. We still privilege reading and writing, and treat all other modes of modeling and mediating (except, for some of us perhaps, mathematics) as inferior, if not

actually harmful. Even though everyone, including most educators, actually learn about the world primarily from television, movies, radio, and now the Internet, I know of no education system anywhere which takes media literacy as the basis of education, and treats reading and writing as just one form of modeling and mediating, a form that allows us to do some things well, but that can't do other things as well as other models and media can [27].

We educators can pretend that all we are doing is "tele-computerizing" the old logocentric school system, making it up to date, more efficient, more personalized. That may be all we intend to do.

But once the nose of the camel is under the tent, whether reluctantly let in by you or eagerly escorted in by an edupreneur, it will be impossible to keep the rest of the camel out. And the camel is already huge and growing outside the educational tent. Indeed, as far as I can see there are nothing but camels surrounding all the tents of education, old or new.

As all of the electronic media converge, growing both more wired and more wireless, more global and more local, requiring no literate or typing skills at all but only the ability to talk, touch, feel, smell, and hear (indeed, as they break through these interface limitations and become part of our central nervous system); as biological computers replace silicon computers, only themselves to be replaced by the many hybrid intelligences of the 21st Century; and as the world everywhere becomes more completely artificial than it already is while "nature" retreats to the tokonoma in everyone's cybernetic cottage, the herds of chattering chimeric camels will unwittingly trample the old educational tents, enabling new teachers, new students, and new things to be taught and learned in new ways [28].

Guiding Values and Visions

But wait! Where are values and visions in all this? How have values guided the transformation of communication technologies in the past, and how might values guide the transformation now, into the future?

Well, where do you think values themselves come from?

It is my observation that each human's acquisition of values is very much like each human's acquisition of speech. It is not possible to prevent a "normal" infant from learning how to speak as long as she is in the presence of speaking humans. And she will learn to speak whatever it is surrounding humans are speaking. Later, if that child tries to learn another language, then she will always speak it with an accent.

So also with values. It is not possible to prevent a child from learning values. She WILL learn them, and she will learn then through the same process and at the same time she learns language - from the behavior of those around her while she is young.

But wait, again: While certain values, or aspects of values, persist over time, other values change. What causes values to persist or to change?

Technology, Values and Visions

I believe Marshall McLuhan epitomized it correctly when he said: "We shape our tools, and thereafter our tools shape us" [29]. It works like this:

All values, beliefs, institutions, laws, and mores are enabled and limited in part by our biology, in part by our culture, in part by our environment, and in part by our technologies. When any of those change, our behavior changes, and our prior values, beliefs, and institutions are challenged.

Human biology has remained unchanged over tens of thousands of years. Those who argue that "you can't change human nature" may have been correct to the extent such "human nature" is biologically determined. Culture also was once thought to be changeless, but now we all know that cultures change too. We have only recently come to understand that the so-called natural environment changes as well, most recently changing as a consequence of human activity itself, it seems.

But culture and the environment both change slowly on the human scale. Technology changes very rapidly - almost daily. And the pace of technological change has been itself increasing over the past three hundred years or so. However, one of the new technologies which recently burst into our lives and consciousnesses with the controversy over genetically-modified food, on the one hand, and the completion of the Human Genome Project, on the other, is genetic engineering. Soon, as Susantha Goonatilake points out, even biology will be just another technology, subject to human manipulation, and there will no longer be such a thing as unchanging human nature, if there ever was [30].

New technologies allow us to do new things. We can have experiences we could not have had before with the older technologies. As we begin to behave differently, we begin to think differently - our consciousnesses changes. Our sense of self, of our friends and neighbors, of time, distance, place, of right and wrong: they all change as we begin to act in novel ways via the novel technologies.

But of course, the fundamental primacy of our old values lingers as we try out new values. Just as we continue forever to speak new languages with an accent, so also do we enact new values "with the accent" of the old. But not our children and grandchildren. Just as they learn how to speak our new language as their own, while we stammer along, so also do they view their experiences with the new technologies as given - just as we accepted as given the values which were derived from our old experiences with the old technologies.

Oh, there may be people, even young people, who desire to preserve or restore old values, but they do so through the prism of their experiences with the new technologies. Once the apple is bitten the world is forever changed.

And we just keeping biting more and more apples of knowledge and power even though many say they are, or should be, forbidden.

Conclusion.

And so, I have come to the end of my search for answers to the questions posed. And the answer is: No! We should not use current values and visions to guide our use of new technologies. Our present values and visions are overwhelmingly influenced by our experiences and limitations of old technologies. We can scarcely imagine how we will be changed as we interact with and through the new technologies.

So what should we do?

Many people tell us to hold on to the old and reject the new. But while I deeply respect that position, and may bemoan with them some of the behaviors and values that will be lost, using present values to guide our use of new technologies just doesn't make sense to me, if I am correct in my understanding of where our current values and visions come from, and what will cause them to change.

Marshall McLuhan asked us, what if television had been invented before the printing press? It did not happen, and it probably could not have happened. But what if it had?

Can you imagine for a minute that we would have the kinds of government, commerce, and educational systems we have now, based on the primacy of words on paper, if television had been around for hundreds of years and if the printing press were one of our newest inventions?

I cannot.

So let go of the words. Let go of the schools. Let go of the old pedagogy and the old academic disciplines and course outlines based on the old technologies and needs of old Modern society. Rather, put your self in the place of future generations [31]. Imagine that people from the futures are speaking to you now. Will they be pleased with what we have written in this book? Will they thank us for our courage and foresight, or chide us for our failure of imagination and our inability to let go?

It is not for us primarily a question of what from older generations should abide but rather what do future generations need and want us to do for them now so that they can live and flourish as they wish?

There are many possible futures ahead of us, many possible presents for future generations. In some, what we now call computers and high tech may dominate. In others they may be entirely absent. In some, nature might be regained, in others it might be entirely gone. In some, reading and writing will continue to prevail. In others reading will be as quaint and rare and useless as learning Latin is now. The point is, we should think about not what future do WE ourselves want, but "What futures do future generations want us to enable THEM to have?"

That is the question I end by posing on behalf of future generations. What is the world that future generations want? And what should we do now to enable them to live in it?

So maybe that is the vision we have been seeking after all. It is not our vision, but those of future generations. We should use their visions to guide our actions now.

But still, what is their vision? Can we ever really know? Probably not, but they might be pleased if they know at least that we tried.

FOOTNOTES.

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