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Technological Forecasting & Social Change



From my perspective

Readying children for the future☆

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1. Introduction

The most frequently asked question in my scores of lectures to hundreds of people each year is, "What should my children be studying?" Many parents' sense of a secure future for themselves is fading; therefore, they question their own training, experience, and judgment about future careers. Looking for a 1950s equivalent of a lifelong job at IBM, based on sound career planning in science, engineering, or law, no longer makes sense. For those outside the white-collar professions, and especially for those in the manual crafts and skills, the future is worse for them and far more dicey for their children.

This essay covers four aspects of readying children for the future:

- The future pattern of work and particularly the core characteristics required by that work. Since the workforce is now 60% white-collar, the concentration is there.
- Preparation for citizenship.
- Assimilating an understanding of our culture.
- How the three previous goals may be met in the face of a degraded and still deteriorating formal educational system.

2. Making it at work

Over the next 25 years, the successful worker must have at least two strings to his or her bow. First will be some undeniable work skill, whether that is as precise as a college degree in electronics engineering or the completion of an apprenticeship program in carpentry. The second string responds to the actuality of white-collar work, the movement toward teams, and the new customer orientation throughout American business. That string is a web of social skills. Furthermore, every enterprise beyond the ones offering hands-on maintenance of the human body, chiropractics, and barbering are likely to have some elements of international trade either offering opportunities or threatening jobs. Consequently, the new necessary characteristics are:

- · computer literacy;
- interpersonal skills-people handling;
- · language skills-speaking, listening, writing, and reading;

- ability to work in teams;
- creativity, innovativeness, and problem-solving ability;
- ability to think longterm and keep company goals in mind;
- · tolerance, multicultural understanding;
- professional and technical skills;
- judgment;
- · customer sensitivity;
- · optimistic outlook;
- · flexibility; and
- numeracy

To be successful in any professional or managerial job, it will surely be necessary to be hyphenated in one's occupational skills. It will not be sufficient to be a mechanical engineer but better to be a biomechanical engineer. It will not be sufficient to be a geologist but one trained in eco-geology, it will not be sufficient to hold an MBA but an MBA with training in research management. Similar conditions are visible in the blue-collar sector; hyphenation in factory terms means crosstraining. Many companies will be following the lead of Motorola, where pay will be dependent on the ability to perform a task with increasing skill and also upon the mastery of multiple tasks in the operation of different machines.

Unfortunately, for large portions of those who will be entering the workforce, the above advice will have relatively few consequences, because the most rapidly growing jobs are prosaic, requiring marginal skills learnable on the job with little investment in time and labor by the employer or the employee. There are jobs that are growing at a great rate on a percentage basis, but they by and large are relatively esoteric and will not need many people.

The most important message to get to those young people not going on to college or professional training is to continue formal education as an absolute minimum through high school and to reconsider going to college. The dismal fact is that high school dropouts suffered a 10% decline in real income in the past decade.

Those with only a high school diploma have suffered a 3% decline in real income. A work world based on muscle is history. Jobs will be white collar, information based, and knowledge based. On the other hand, for those who choose to pursue blue-collar occupations or find themselves incompatible with book-learning-based careers, the path to follow is training for a craft. While the numbers of workers will grow from the present 139 million to about 153 million by the year 2005, there is every indication of a shortage of skilled workers in the various

[★] This article is a reprint of a previously published article. For citation purposes, please use the original publication details http://dx.doi.org/10.1016/S0040-1625(97)00086-3; Technological Forecasting, Volume 57, Issues 1-2, January-February 1998, Pages 157-165.

traditional crafts, plumbing, carpentry, masonry, and so on. These jobs will pay well.

Quite aside from what parents may do to guide their kids, there is the larger issue of government policy. Would it not be in the nations' interest to promote an increase in college attendance by at least 60%, so that instead of a quarter of youth graduating 40% did? There is a role for parents in relation to college education that tends to be neglected. Universities have severely short-changed their students by paying no attention to future job opportunities associated with different degrees and majors. A major in history, English, or psychology is the route to the bread line or at best to marginal employment. It is time that parents, citizens in general put strong pressure on the state legislatures to put the screws to the academic community about their irresponsibility and indifference as to whether they are turning out employable people.

3. Furnishing the mind, enjoying the body, and strengthening the spirit

The traditional goals of education have been as follows for at least a hundred years:

- preparation for work,
- · transmission of cultural knowledge, and
- preparation for effective citizenship and the business community.

The educational system does poorly on the first goal and is dreadfully bad on the second and third goals. It is beyond the scope of this essay to touch on all the reasons for that. The problem that every parent faces in terms of their personal resources is to meet those three goals so that their children will have prosperous self-fulfilling lives.

Before turning to a public and private curriculum for children, a few notes by way of needs, shortfalls, and limitations are in order. The longterm high level of nutrition in the United States has accelerated the sexual and physical maturation of children. The best single measure of that is the decline in the age of menarche. It is now down to the age of 111 ~ to 12 years. On the other hand, the economic value of children, with few exceptions, is zero. Outside farming, children are no longer an economic resource since we outlawed the sweatshop. The notable exceptions are some new immigrants who have not shielded their children from labor. The social tension now is between ever younger social and sexual maturation and an increasing economic dependency on parents to an excessively late age. < 100 years ago, children entered the workforce at 14, 15, and 16. Today children are still dependent to 18 to 22 or later for those seeking graduate degrees. Education, for both child and parent, has to deal with this fundamental mismatch between biology and society. We all know the 30- to 35-year old stalled in a period of youthful playfulness, carefree to the extent many would call irresponsible, not having knuckled down to anything resembling a commitment to employment much less occupation. Cartoons and TV jokes abound about the 27-yearold hovering over the refrigerator at mom and dad's house unable to find desirable employment and unwilling to take the work available.

In our metropolitan society, the dominant referent group for children is the family, but it no longer has anything approaching a monopoly. Peers in and outside the classroom have a powerful influence on values and behavior. Many have argued that there is even a culture of childhood that walls off adults and aggressively shields children and youths from the adult world. The extent to which that is true is open to speculation and research, but the home and the immediate family are no longer the overwhelmingly dominant factors in the setting of values for children. Consequently, with the changing child-parent relationship, one could argue without drifting too far from reality that in many families the greatest enemy of the child is the child's own parents, ignorant of and unable to understand the world to which the child is exposed and lacking resources and insight as to how to educate

and develop their children, in many cases they are caught up in arbitrary and ad hoc but dubious and ineffective means.

Let us turn now to the elements of a successful educational program for children, directed at preparing them for a successful future as children and as adults. First, they must understand themselves, their world, their choices, and plausible ways of getting to them. Second, they must have a sense of optimism and confidence of their competence in engaging the future.

The elements of my program to meet these goals follow:

1. Physiology would be the first organizing discipline from the earliest age. It can be approached qualitatively and quantitatively. It directly ties to the world of the child. It provides explanation and order and understanding for that which is most intimate and already personal-the child's body and how it works. Can you imagine a child not interested in why fingernails are striated or eyes are blue or brown, or in what happens to the food between mouth and bowel, or why toes bend one direction and not another? Physiology is the natural route to understanding systems. Systems are the backbone and fiber of our world. Physiology, as it fades into systems, will expand the child's understanding of his or her expanding universe of experience. Understanding systems has to be fundamental to any educated person in the future. By beginning early and understanding those relationships as simple and straightforward, the child will be prepared to deal with the more complex issues of his or her personal and collective life.

2. The origins of familiar things. As a child grows older he or she will

- experience the excitement of complexity, in drawing order and patterns out of the pieces of his or her world. Together knowledge of history, sociology, technology, and language will be effectively linked in the self-directed study of the origin of familiar things. Whatever the child's interests may be at the moment-beagles, books, breakfast food, ice cream, icons, or igloos-the child would explore freely and assemble a report on that subject, a report to classmates, each of whom would be doing a similar "origins." The child would simultaneously learn to think, to probe, to structure, to organize, to present, to engage, and to be engaging. Since schools do not do origins, there is nothing to keep you as a parent from doing it on your own, sharing with your child your own research into the origins of something of interest and enjoying the child's research on the origins of interest to him or her. That attention to the origins of familiar things will build an understanding that whatever we now have is neither permanent nor necessary. Our tendency to idealize the present and resist change is one of the fundamental weaknesses in the contemporary world. The origins of familiar things was the core of the Columbia University Teachers College Program in the 1930s in which children who were one in a million in the level of their IQs were brought together in a special educational program. Mixing ages and sexes, the reverse of our
- 3. Suffer fools gladly. Particularly for the brightest children, a central need is to recognize one's brightness yet not disparage, deplore, demean, or disregard the less gifted. The story is told that Bertrand Russell did not know that he was intellectually unusual until he entered the university. His great gifts were, for him, just the way things were. That would ideally be the way children should develop, particularly to develop their social sides, by learning positive successful means of dealing with all people—those more as well as less able than themselves.

present lockstep segregation by age, would permit children to

learn and to teach, to share ideas and experience with those more

or less capable than themselves in many different ways.

There is good evidence that the social skills of children and adults increase with IQ up to somewhere in the neighborhood of 140. The increase in intelligence, coupled with interests shared with less

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