

# The "Problem" of the Schools

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Whenever much effort has been expended in trying to solve a problem, and no solution has been found, it often turns out that the problem was indeed unsolvable—as it was stated. In the statement of every problem, there exist implicit as well as explicit elements. For example, when the problem of the Gordian Knot was proposed to Alexander, one of the problem's unstated elements was "Untie the knot; don't just cut it with your sword." Alexander replaced the problem he had been given with one that he could solve. Problems that seem unsolvable often yield to solutions entailing a reformulation of the problem. Such reformulation may involve the replacement of the problem with a new one, or modification of the ground rules.

So it will probably turn out to be with the "problem of the schools." Today, in spite of the existence of many strongly advocated proposals, a sober evaluation would force us to admit that we have no convincing solution to the multiple problem of giving American children a high-quality (individualized) education in schools that our society feels it can afford. The problem, in its most general formulation, is usually stated in such terms as "How can we make our schools cheaper and better, or simply better?" This problem is usually broken down into manageable pieces relating to such sub-issues as the student-teacher ratio, classroom organization, school management, student grouping, curriculum strategies, educational materials to be used, etc.

It is my thesis that at this level of formulation, the problem of the schools will turn out to be unsolvable. It must be replaced by a new problem conceived within a different framework of ground rules and assumptions.

The new problem might be of the general form, "What is the best way to produce adults who have certain characteristics?" or "What is the best way to achieve certain educational goals?" Educators will certainly continue to debate what kinds of adults we want to produce, and what types of educational goals we want to establish. But the

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outcomes of such debates are secondary. The primary point is this: Stating the problem of educating children within the framework of the *result* we want to achieve may be more fruitful than stating this problem within the implied framework of analyzing and re-engineering the *tools and methods* we have tacitly come to accept as the given and inevitable means for attaining educational goals that need not be examined or discussed.

It is certainly not the purpose of this article to partake in the debate concerning the most desirable goals of education. These must differ according to community, culture and time. Perhaps they should also be different for different children. It is not necessary to agree on specific educational goals for the purpose of discussing alternative strategies for achieving educational goals in general. Such strategies are more stable than the goals themselves, and some general things can be said about them.

But for the sake of giving concreteness to the discussion of strategies for achieving educational goals, some general goals, on which there tends to be some amount of agreement nowadays among educators, are listed below. There may be more agreement on some of them than on others, but this does not matter for our purposes here, since the goals will be used only illustratively and as grist for the mill.

1. Good reasoning and problem-solving skills
2. Good reading, writing, listening and oral communication skills
3. Ability and disposition to take responsibility for learning
4. Curiosity—the ability to be reinforced by the acquisition of new knowledge
5. Disposition to question and inquire rather than accept as truth that which is taken for granted by others
6. Ability and disposition to initiate, execute and complete projects
7. Self-discipline—the ability and disposition to control one's own behavior rather than to depend upon others to do so
8. Disposition to cooperate rather than compete in work situations
9. Patience and perseverance—stick-to-it-iveness in the face of obstacles and adversity
10. Courageousness—the disposition not to be stopped too easily by real or perceived threats

The first consideration the educational futurist must take into account is the fact that different



skills, concepts and attitudes are learned most easily and rapidly at certain stages in the child's educational development. For the purpose of the present discussion, it does not matter whether the term "stages" is used in the sense of stages in time (age) or stages in relation to developmental milestones regardless of the age at which they are reached. The principle of optimal or critical stages appears to hold true in a wide range of species, and research has been continually broadening the range of behavioral traits for which the principle applies. At one extreme of the range, ethologists have shown that certain songbirds learn their song either at a certain period in their lives (that period may be no more than a few days in duration) or never. That finding relates to the acquisition of a skill. Then, there are the widely publicized imprinting studies, which relate to attitude formation (what the individual will find reinforcing or aversive). At another extreme, most people would accept, on the basis of their own observation and experience, the fact that various complex skills and bodies of knowledge, such as advanced mathematics or macro-economic theory, cannot be learned until the individual has reached a certain advanced level of intellectual development. Between these extremes, there are many important human skills, attitudes, traits and behavior patterns that are learned most easily and rapidly at certain stages of educational development. For example, it is a common observation that a language learned after the age of 12 is rarely spoken without accent.

The educational technologist would proceed by breaking down his goals into their behavioral

components. Each of these components could then be examined from the standpoint of the stage of educational development most propitious for its acquisition. For example, reading skill is a component or prerequisite for several of the above-listed goals. There is still some controversy surrounding the pros and cons of teaching reading at various possible stages, and we may not yet have all the knowledge needed to resolve that controversy. However, we do know that under favorable circumstances children will readily learn to read around the age of four, and that in cultures that teach their children to read at an early age (e.g., Japanese and Jewish), the illiteracy rate approaches zero and the "Johnny can't read" problem is non-existent. We also know that the possession of reading skills provides the child with some of the tools needed to advance in other areas in which progress must otherwise be postponed. The controversy appears to relate to the issue of whether the known benefits of learning to read early are outweighed by possible disadvantages.

Burton White at Harvard and other researchers in early childhood development have shown that infancy may be the critical period for acquiring a wide range of intellectual, perceptual and personality traits, to a much greater extent than was formerly believed. Many of these behavioral traits are components of the goals listed above, and their possession or non-possession probably would determine the child's later ability and disposition to learn the kinds of things we currently teach in the schools, as well as other components of the listed goals.

# Managing Scarce Educational Resources

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In summary, the educational futurist will need to focus on the "a-stitch-in-time-saves-nine" aspect of the problem. In many areas of education, and for the acquisition of many important behavioral traits, we may have a situation where *well-timed* and *properly executed* educational efforts *made during infancy and early childhood* will produce significant long-term savings and economies by producing results that could otherwise be achieved only with years of costly and painful schooling, and then only with uncertain success. The principle is hardly a new one, but what would be new is the extension of the principle to the acquisition of behavioral traits to which it had not previously been applied.

Having successfully analyzed the educational goals into their significant behavioral components, and having established the most propitious stages of educational development for acquiring these components, the educational technologist of the future would then confront the task of engineering their acquisition by the children who are to be educated.

It is likely that the educational techniques, methods, approaches and settings that would be enlisted in such an engineering plan are already known to us and have been used on various scales, by various people, at various times. To name but a few, there is the parent-child interaction from infancy on; the one-to-one tutorial relationship as in piano lessons; informal learning networks as among hobbyists; schools without walls; imitation and precept learning, known to be an extremely important mechanism in child development; various types of nursery schools; film viewing as in TV watching; programmed instruction; and play with carefully engineered educational materials. It seems clear that all of these methods and settings will play important roles in the education of children in the future, with their contents and mixes determined by the educational goals that are set and by the outcomes of research in the areas discussed earlier. It is far less clear that schools, in the sense of buildings where children congregate daily in homogeneous groupings, will play much of a role. Toffler is probably correct in predicting that technological advance multiplies options and increases diversity. In education, this principle would express itself in a proliferation of alternative feasible and attainable educational goals, greater variation in the types of goals that are chosen by individuals within a given cultural setting, a larger variety of settings in which education can occur, and wider ranges of individual achievement.

When the task of educating children is approached in this manner, the perennial "problem of the schools" may well fall by the wayside. □

While society perceived that there were unlimited resources for it to use, little regulation of or planning for the use of these resources was considered. Circumstances have not only altered society but also have forced an acceptance of the idea of limited resources for all activities. We are trying to provide a multitude of goods and services to ourselves through various governmental agencies at all levels. At the same time we have reached a level of taxation that has most members of this same society up-in-arms. We are very rapidly accepting the proposition that not only are there limits on natural resources, but also there are very real limits on the amounts of goods and services that we may legislate to ourselves.

Education is not exempt from these restrictions of limited resources, nor should it be. Professional educators and concerned individuals must accept the fact that society as a whole, and individual communities in particular, have a limited amount of resources for use. Education is only one of the many public services requiring support. The problem, then, is twofold: (1) providing *valid* information to the political body making resource allocations for the community, and (2) making maximum usage of those resources which are allocated for education.

Planning is the key to maximum usage of resources and should be a major component of evaluation for accountability. Most educators are adept at immediate planning and occasionally consider intermediate planning activities. It is when we become concerned with long range plans and possibilities that a decided gap appears in the activities of educators. (Although we are here concerned with education and educators, this lack of long range planning may also be attributed to other groups in the arena of public affairs.)

## A Team Effort

Planning is, or should be, a team effort. This team must be supported in its work by the

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