

An Overture

TEACHING FOR THE FUTURE

In this, the year that we are celebrating the bicentennial of our nation, we are also entering the last quarter of the twentieth century. It is a propitious time to think about teaching for the future.

Many of us who are in mid-career as biology teachers were choosing, preparing for, or embarking upon careers twenty-five years ago. Since that time we have experienced many changes in our careers—or even changed careers, maybe more than once. In spite of the changes we have experienced, it may be that education is one of the least changed institutions in our society. If so, this relative stability may have provided a comfortable haven for individuals incapable of adapting to change; it certainly has not enhanced our students' ability to adapt to change. As any biologist knows, an important aspect of the survival of a species is the adaptability of that species to changing environmental conditions. Hence, the first principle of teaching for the future is to foster adaptability to change.

Associated with education's resistance to change is its inability to encourage diversity—either diversity among students' interests, needs, and abilities or the diversity of thought and ideas of individual students. With the increasing use of individualized and self-paced programs, some progress is being made toward accepting diversity among students. Yet many of these programs teach all students the same set of facts and evaluate their performance on the same set of right answers. The only accommodation to diversity lies in the manner in which the answers are learned. Most of our educational programs fail to challenge students with problems for which there are a diverse assortment of possible solutions instead of right answers, even though these are the kinds of problems students will encounter in the future.

As a corollary to adaptability, every biologist also knows that the greater the diversity of a population the greater its likelihood of survival. The full diversity of each individual's thoughts and ideas as well as the diversity of approaches provided by different individuals will be needed to deal with the complex problems that lie in the future. Thus the second principle of teaching for the future is to encourage diversity.

Because these principles are based in part on biological concepts, we are in a good position to apply them, and should take the lead in doing so. Before we begin to develop methods of teaching for the future, it seems appropriate to consider some of the ideas currently

being presented by futurists. (The ideas summarized here are taken from the October 1975 issue of *The Futurist*.)

Alvin Toffler focuses on two problems that threaten the stability and survival of our political system—the lack of future-consciousness (the inability to anticipate problems and opportunities of the future) and the lack of participation by citizens in the decision-making process. Toffler recommends the creation of an “anticipatory democracy” to develop future-consciousness and increase citizen participation. Some of the activities he suggests can be adapted to teaching for the future. For example, students could become “futurist consciousness teams” by studying the current literature about the future and by learning to think creatively about the diversity of possibilities for the future and how human beings might adapt to changes in their environment. They could act to pressure law-making bodies, political candidates, planning agencies, and other groups to consider the long-range consequences of proposed actions. They could call for careful studies of the effects of proposed actions.

In separate articles, Jay Forrester and Stuart Chase maintain that the control of human population is the most basic and serious problem threatening our future. Forrester believes that because there is no international mechanism for dealing with the problem, each nation will have to maintain its own population at a level supportable by its resources. He feels that the limits on population are more social than physical and that changes in values and attitudes about family size are needed. Chase supports the notion that changes in human life will necessarily be cultural because there has been no significant genetic change in humans in the last 50,000 years. His views differ from Forrester's in that he believes that a consortium of global planning authorities could be created to bring into being a “steady-state society” in which every human being would be assured an adequate living.

In teaching for the future, techniques such as discussion, brainstorming, and simulation could be used to encourage students to consider future possibilities and to propose a variety of possible solutions to the population problem. Students could also prepare scenarios about the future in which they describe ways human beings might adapt to anticipated changes in the environment. These are only a few ways to foster adaptability and encourage diversity. I am sure you can think of others.

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