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ABSTRACT

The current efforts to reform U.S. education are misguided because they place increased burdens on the schools and ignore the total learning environment. The majority of youth step out of school into an intellectual vacuum of no feedback and no enrichment. The home, the school, and the community must be involved in a holistic way with education, out of which a Learning Society will evolve. The building of a Learning Society consists of two major steps: a commitment to a set of values and the development of a communication network within the schools and between the schools, the parents, and the community at large. The values of a Learning Society include lifelong learning and the creation of a society in which education is interwoven with the social, political, and economic fabric. Education becomes not a system in itself but rather a responsibility of the entire society. The network to be developed in the Learning Society is called the Citizens' Alliance. It is a volunteer organization composed of about 60 representatives of the homes, schools, and community and charged with carrying out a number of tasks, among which are: (1) to organize dialogues on short-range and long-range educational goals as well as intergenerational dialogues between high school students and senior scholars; (2) to initiate the preparation of community profiles; i.e., concise descriptions of the natural, social, and cultural system of the community written by students; (3) to be a clearinghouse for learning innovation; and (4) to organize ongoing dialogues on strengthening the continuum of the K-12 curriculum. Other aspects developed in a Learning Society include value awareness, social reality awareness, problem awareness, system awareness, and historical awareness.

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by

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## **BUILDING A LEARNING SOCIETY**

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The people of the United States periodically evaluate the educational accomplishments of the nation. What they find does not please them.

In 1983 the National Commission on Excellence in Education found "that for the first time in the history of our country the educational skills of one generation will not surpass, will not even approach those of their parents."!

Four years later in 1988 the International Association for the Evaluation of Educational Achievement found that the science achievement of the 14 to 17-year-old American youth was third from the last out of 17 countries with Hong Kong and the Philippines being the 16th and 17th places.

The host of reforms recommended puts more burden on the schools and ignores the total learning environment made up of the schools, homes, and the community at large. The majority of youth step out of school into an intellectual vacuum of no feedback and no enrichment. The home, school, and the community must be directed in a holistic way toward education, out of which a Learning Society will evolve.

The impact of the schools will be effective only to the extent that the student is seen by the school not only as a pupil but also as a member of the family, of a peer group, and as a member of the community.

No single factor in this process can make its full contribution in isolation. All must be aware of, and responsive to, what the others are doing and are planning to achieve. All must have the same mutually agreed goals; so, it is important that for the sake of the youth the schools should be aware of the world outside their walls; therefore, they should enter into an alliance with the home and the community.

It is the job of the Learning Society to activate these potential educational linkages in the following ways:

1. Teachers teach and students respond.
2. Students share their classroom experiences with parents and parents have the challenge to enrich students' learning.
3. Teachers present educational goals to parents and parents support mutually ~~agreed~~ goals.
4. Parents as members of the community enlarge the school environment by drawing on community resources, either by taking the schools into the community or the community into the schools.

This expanded educational environment is the foundation of a Learning Society.

At the heart of the Learning Society is the commitment to a set of values and to a system of education that affords all members of the community the opportunity to stretch their minds to full capacity from early childhood to adulthood. In such a society education is important not only for what it contributes to one's career, but also because of the value it adds to the general quality of individuals' lives as well as to society at large.

A major premise of a Learning Society is that within its boundaries lifelong learning is fundamental to the development of the individual and to the enhancement of a humane and just society. A Learning Society is one in which education is interwoven with the social, political and economic fabric. Education becomes not a system in itself but rather a responsibility of the entire society.

This environment can make possible the total growth of human beings. This total growth ensures not only training in vocational competence but also in social competence. It ensures the development of the psychological, aesthetic, moral, and philosophical qualities that contribute so much to the quality of life.

But this is only half of the story. There is also another important dimension of the Learning Society: the development of a communication network within the schools, and between the schools, the parents, and the community at large.

The flow of knowledge and ideas within and between the different segments are safeguards of a free democratic society.

The Learning Society is a **cybernetic system** whose primary goals are

- to set standards of personal conduct and performance
- to encourage individual participation in the social process
- to develop regard for the value system on which our institutions rest
- to help individuals acquire optimum capacity for productive achievement in life
- to encourage utilization of knowledge for human betterment
- to establish an environment conducive to life-long learning

The Learning Society is also a **learning system** capable of reinforcing or modifying educational goals.

The Learning Society is an **open system** which can respond to the societal environment beyond the community.

The Learning Society is also a **synergetic system** in which the combined efforts of the home, the school, and the community exceed the sum of their individual efforts.

The size of the Learning Society may vary. It may encompass the entire city. It may encompass a neighborhood, or a school building.

There must be a network which ties the home, the school, and the community together. This network is the Citizens' Alliance. It is a volunteer organization composed of about sixty representatives of the homes, the schools, and the community (business, labor, government and civic organizations). The tasks of the Citizens' Alliance are:

1. To organize ongoing dialogues on the short range (vocational competence) and long range educational goals (broad intellectual competence).
2. To organize intergenerational dialogues between high school students and distinguished senior scholars to demonstrate how the interchange of ideas between young and old on national and global issues broadens the vision of both generations.

3. To initiate the preparation of community profiles — let me comment on this point.

The American political system is an upside pyramid. Even though the size of the federal government has increased dramatically since the 1930s, most Americans have a greater emotional attachment to the courthouse than to the White House.

Local educational systems frequently oppose federal aid to education because they believe that such a measure may lead to a national curriculum. The battle cry of schools is: "Grass roots curriculum!"

School systems, however, do little or nothing to construct a community based curriculum which would help students relate to their own community. There is today no grass roots curriculum. The students are isolated from the community. For this reason the preparation of a community profile is needed. The community profile is a concise, clearly written description of the natural, social, and cultural system of the community. The social profile should be prepared by high school and college students with the help and under the supervision of the Citizens' Alliance and of a Citizens' Advisory Board.

4. To be a clearing house for learning innovation developed in the homes, community, and the schools.
5. To assist in the formation of neighborhood study councils.
6. To initiate dialogues on how changing family structures and changing in youths' environment affect the functioning of the Learning Society.
7. To organize ongoing dialogues on strengthening the continuum of the K-12 curriculum. This is probably the most important task of the Citizens' Alliance. The foundation of the K-12 curriculum is based on the hypothesis that the youth experiences are potentially so meaningful that the fundamental ideas of science can be related to the youth experiences with increasing depth and complexity as the students are moving from grade to grade. I call this curriculum the "Organic Curriculum" because the intellectual structure of the science disciplines grows like an organism with the growing maturity of the child into adulthood.

8. To organize weekend leadership institutes to discuss the contributions of the homes, communities, and schools toward developing the following awarenesses.

A Learning Society must develop **value awareness**. Value gives goals to individuals. Value helps to answer such questions as What is the purpose of life? Should I vote for military spending? What are the goals of education?

Values give goals to society. The goals of the American society are spelled out in the Declaration of Independence:

“We hold these truths to be self-evident that all men are created equal, that they are endowed by their Creator with certain inalienable rights, that among these are life, liberty, and the pursuit of happiness.”

Value gives goals to the global society through the Universal Declaration of Human Rights:

“All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act toward one another in a spirit of brotherhood.”

The value system which helps us to build a Learning Society is made up of two components.

One component is truthfulness. It enables scientific inquiry based on cold knowledge without a trace of deception. The search for truth requires the complementary value commitment of freedom, justice, and integrity.

The purpose of scientific inquiry is to search for truth to make a more coherent picture of the world. But our commitment for the search for truth creates more uncertainties. The scientific mind opens up new avenues with each step of inquiry. Each answer poses new questions.

Our society cannot afford the widening gap between science and society. The steady search for truth must become a part of the classroom experience. Science education must be trained to put the cutting edge of knowledge into the public domain.

The other component of our value system in a Learning Society is the ethical component. This component enables us to articulate our commitment that other people matter. Or to put it in another way, the general welfare of society matters. This ethical component requires the complementary commitment of love, kindness, and charity, a commitment to use scientific knowledge for human betterment.

Without this ethical component, society cannot function well. The separation of the search for truth from the ethical component of human compassion is the biggest tragedy in our global society because the pursuit of truth alone does not show how to make use of scientific advancement for human betterment.

This idea has been eloquently expressed by **Rabelais**, the 15th century humanist, who wrote: "Science without conscience is the ruination of soul."

This is what **Bertrand Russell** had to say: "The good life is one inspired by love and guided by knowledge."

And **John Dewey** wrote: "Anything that obscures the fundamental nature of our social problems is harmful."

Today the civilized world is threatened with destruction by the physical impact of science and technology. Love and charity are necessary to prevent the inhuman consequences of science and technology. The combination of truth and justice, love and charity should be the value commitments of a Learning Society.

A Learning Society should develop **social reality awareness**. Social reality awareness helps us to understand that the natural and man-made environments are changing all the time due to the natural forces, science and technology, and changing value preferences. Adult members of society are no longer monopolists of social reality. Our youth in very early years are exposed to the successes and frustrations of society. They experience pollution, unemployment, riots, poverty, drug abuse, child abuse, alcoholism, juvenile delinquency, flood, hunger, terrorism, and war.

In a Learning Society there should be intergenerational dialogue about what is happening locally, what is happening across the nation and across the world.



Today dialogue is lacking at a time when society is threatened by social breakdown in Lebanon, Northern Ireland, South Africa, Chile, Nicaragua, El Salvador, India, Pakistan, Afghanistan, Sri Lanka, and many other parts of the world.

A Learning Society must develop **problem awareness**. A social problem is the gap between the goals of society and social reality. Members of the Learning Society must know how to analyze social problems. Take for example the problem of the deterioration of the environment. The following steps should be followed.

Step 1 is the recognition of the symptoms of the problem, which is the outward manifestation that something is wrong. Some symptoms of the environmental deterioration are smog, oil spills, acid rain, nuclear wastes, chemical wastes, etc.

Step 2 is the aspects of the problem. This refers to the question of why society should be interested in recognizing the problem. Pollution is a cost to nature, property, health, beauty, to individuals, and to the community.

Step 3 is the definition of the problem as it reflects the gap between the goals of society and social reality. The problem is: "How can we build and preserve an environment where health, safety, and beauty prevail?"

Step 4 is the scope of the problem which is that statistical measurement of how bad is the problem.

Step 5 is the recognition of the causes of the problem. Here are some of them:

- Technological advancement enables man to toss around incredible amounts of material.
- Society lacks system vision. Society fails to recognize nature as a sensitive non-goal oriented system which has no built-in mechanism to correct the destruction caused by science and technology.
- Another cause of the problem is the narrowing gap between invention and innovation. For instance, it took 112 years from the development of the theory of photography to the invention of the first camera.

It took 65 years to build the electric motor; 12 years to build the first television; and only 6 years from the splitting of the atom to the atom bomb. This narrowing gap between invention and innovation has aggravated the deterioration of the environment.

- The market system also contributes to the deterioration of the environment, since it is based on property rights. Air and water are not owned privately. They are considered free goods; consequently, public goods are abused.
- Senseless consumption is another cause of the deterioration of the environment. For a long time consumer choices were considered rational. Thorstein Veblen in the *Theory of the Leisure Class* brought to the public's attention the senselessness of conspicuous consumption.

Step 6 is the solution of the problem. At this point it must be investigated what individuals, volunteer groups, and government can do to solve the problem. Some individual efforts may be discussed in terms of developing rational standards of consumption. Voluntary efforts may be discussed in terms of what members of a community do voluntarily to prevent pollution and correct or clean up polluted environments. In discussing government efforts, students may discuss the various legal restrictions, the introduction of user fees, or dispersal of cities, as some of the measures government may undertake. The preamble of The Environmental Policy Act of 1969 states:

“The purpose of this bill is to decree a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and the biosphere, and stimulate the health and welfare of man; to enrich the understanding of ecological systems and natural resources important to the nation.”

The Learning Society must help to develop **system awareness**.

The general systems theory represents not only a body of knowledge, but also a new way of looking at the individual, the nation, and the world, and that helps to develop the insight that "everything relates to everything else." It is a simple proposition utterly neglected in private and social decision making. Members of the Learning Society, young and old, must become aware that the lack of system vision in decision-making creates serious damage in the natural and manmade environment.

The highway engineer has only one ambition — to build more highways. The airplane engineer has only one ambition — to build bigger and faster airplanes. The nuclear engineer has only one ambition to solve the energy crisis — to build more nuclear plants. The chemical industry injects more and more chemical compounds into the atmosphere. None of these or other specialists realizes the possible impact of their commitments upon the rest of the system.

My interest of incorporating system theory in the elementary grades was awakened in New York City on the school playgrounds the day after the astronauts landed on the moon. Cutting across the school yard I noticed the children playing astronauts. One child made the countdown: ten, nine, eight, seven, six, five, four, three, two, one — lift off. Another child announced: "All systems go!" And I was also ready to go into the third grade classroom where I related system theory to New York City as a goal-oriented system.

The Learning Society must develop **historical awareness**. The overwhelming majority of society has little or no sensitivity to the relationship between the past and the present. Many see history as only a sequence of dates and do not recognize it as a process in which the present is the outgrowth of forces operating in the past. We often fail to realize that just as the present is the outcome of the past, so does the present shape the future.

The historical dimension of science in the school curriculum is neglected. Since the birth of our nation America has been imbued with the idea of progress. The idea of inevitable progress through science and technology became America's religion. Inventors, innovators, and entrepreneurs have been the heroes and have built new institutions to develop and disseminate new technology.

The Marquis of Condorcet in 1794 expressed that the methodology of science and technology will be extended to other spheres of human endeavor and that it will have a continuing beneficial effect on human kind. In 1932 the historian Charles Beard said: "Until people prefer hunger rather than plenty, disease rather than health, science and technology will continue to be dynamic."

After this time the faith in progress was challenged.

- The Great Depression challenged the idea of inevitable progress.
- Science and technology have created such problems as the population explosion, chemical wastes, exhaustion of natural resources, atmosphere pollution, nuclear wastes and the threat of nuclear war. Hermann Kahn warned of the Doomsday Machine which could destroy all life on earth, and bring the evolutionary process to a close.
- Americans, by a 2 to 1 margin, believe that Japan and not the United States is now the leading economic power in the world, according to a public opinion poll released Wednesday, March 8, 1989. The poll indicated that 59% of Americans now rank Japan first with only 29% choosing the United States.

There is an increasing fear today of scientists' ability to develop new forms of life by human interference in the genetic structure. Finally, there is some anxiety today about integrity in scientific research. In recent months the newspapers have reported serious violations of the integrity of scientific research. The September 9, 1987 issue of the *Chronicle of Higher Education* reported that nearly one-third of scientists and social scientists surveyed at a major university said that they suspected their colleagues of fraud. More than half of these said they had taken no action to check those suspicions or to report possible misconduct.

In a Learning Society more and more scientists and engineers must be committed to develop a technology which mitigates the harmful effects of science and technology.

In a Learning Society scientists should not only make scientific judgments but also moral judgments. They must ask the question "How can science and technology be utilized to promote the general welfare."

The road toward building a Learning Society is slow and difficult to follow. Dreams do not become realities instantaneously. Building a Learning Society is a neverending process. However, there are many factors that favor its building; for example, in the United States...

- There is a national trend toward increased participation of citizens in political decision-making.
- There is an emerging new populism; the idea that power should be returned to the people.

But building a Learning Society must meet many challenges:

- Communities are made up of numerous subcultural groups that have their own ideas of what knowledge is and how to use it. Communities have many people who willingly or unwillingly underutilize knowledge and overutilize ignorance.
- Fear of dialogue among people with conflicting ideas inhibits the building of a Learning Society. Many people are afraid of new ideas because they are afraid of dislocations, rocking the boat, or waking sleeping dogs.

Fear of new ideas reminds me of the following story:

Papa Mole and Baby Mole were digging, digging, digging. At night they came out of the ground, and Papa Mole said to Baby Mole: "Look, my son, isn't this night beautiful? The heaven is full of stars. Everything is so quiet. Isn't it beautiful?" Baby Mole said: "Yes, Papa, it *is* beautiful."

They went back into the ground to dig, dig, dig. Early the next morning, they came up out of the ground again.

Papa Mole said to Baby Mole: "Isn't this morning beautiful? The sun is rising and the clouds are pink. The meadow is full of flowers and the dew sparkles on the grass. Isn't it beautiful?" "Yes, Papa, it *is* beautiful."

• And they went back again to dig, dig, dig.

Suddenly Baby Mole stopped his digging. He had an idea. He asked: "Papa, if everything is so beautiful up there, why don't we stay there?"

Papa Mole replied: "How could we do such a thing? You must not forget, my son, that this is our fatherland."

Let us assume that we who dream about a Learning Society can overcome these difficulties. Will such a Learning Society lead us into the dawn and the sunshine? There is no guarantee. But such a Society does not just drift into chaos and destruction. Such a society has had the energy to make a decision to use its intelligence for human betterment.

The Learning Society must include everyone from childhood to old age. In the December 7, 1964 issue of *Science Magazine*, Albert Szent-Gyögy, Nobel Prize winner of Medicine and Physiology, published a sophisticated article about expanding knowledge. I, who believe that the fundamental ideas of knowledge should be the curriculum from Grade 1 through Grade 12, was eager to communicate his ideas to children in the second grade. Professor Szent-Gyögy gave me permission to rewrite the article so that the younger generation could benefit from it. Here is the opening paragraph of a scientist's ideas in second grade language:

"Nature is wondrous and full of secrets. Man must work very hard and be very patient to discover Nature's secrets. But every day scientists learn more and more of them. Well, this makes you children and teachers wonder how we can learn all the many things that scientists are discovering. Do not worry, for Nature's most wonderful secret is that the truly important things are really simple. As scientists learn more and more they discover that things that seem complicated and confusing at first are really all parts of a few simple big ideas.

"I am a biologist. My science of biology tries to discover secrets of living things, what makes human beings and animals and plants live and grow and multiply. When I was young, biology was very complicated. I had to learn many different rules about different living things. But as I grew older and scientists discovered more and more, then came a time when we saw that all the many different things that we had learned were really all different ways of looking at one or two big ideas. There had always been men and women who tried to make our world a better place. They have done this with the study of science, history, and with their stories, poems, plays, music, paintings, and hard work."