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ABSTRACT

Seven speeches, which were presented at the Fifth Annual Chief State School Officers Institute in 1974, examine the relationships among man, education, and society in the future. In "The Psychology of the Future," Alvin Toffler describes the traditional role of educational institutions as maintainers of a predictable society and points out that contemporary education must prepare youngsters for a non-predictable future. In "Manpower and Human Resource Needs," Willard Wirtz identifies unemployment, changing role of women in the work force, and need for continuing education as problems to be solved. "Dangerously Provincial" by Frederick Champion Ward stresses the need for international perspectives on energy use, food production, resource development, and population control. Allan K. Campbell reviews the history, current trends, and future needs of educational finance in "The Politics and Economics of the Future Financing of Public Education." "The Shape of Democracy--The Citizen Role" by Forbes Bottomly stresses that human values and political choices influence the future, not continued application of technology. In "The Public and Private Life of the Individual," Harold G. Shane sees population expansion, technology, coming food crises, and group values as influencing personal security. "Energy in Nature and Society" by Charles Ryan explains how traditional curriculum has fostered values that now conflict with our finite energy and resources. (Author/AV)

JACKSON HOLE, WYOMING
JULY 25 - AUGUST 2
GRANT VENN, DIRECTOR
GEORGIA STATE UNIVERSITY
ATLANTA, GEORGIA

MAN EDUCATION & SOCIETY in the year 2000

THE 1974 CSSO INSTITUTE

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MAN EDUCATION AND SOCIETY
THE YEAR 2000

A Report of the

1974

Institute for Chief State School Officers

Sponsored by the United States Office of Education
in Cooperation with
The Council of Chief State School Officers

Edited by
Grant Venn, Institute Director
Callaway Professor of Education
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As Director of the 1974 Institute I wish to express additional thanks to Dr. Bryon Hansford, Executive Secretary of the Council, Dr. Duane Mattheis, Executive Deputy Commissioner of Education, and to James Gibbs, William Carter, and Elam Hertzler, Commissioner Bell, and Deputy Commissioner Robert Wheeler.

May I express my double appreciation to Georgia State University and Dean Roy M. Hall and to John Evans and Nancy Brigance of my staff who had to do so much more because of my illness during the Institute.

Grant Venn
1974 Institute Director

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INTRODUCTION

Grant Venn, Institute Director
Georgia State University

The Fifth Annual Chief State School Officers Institute was designed to provide the Executive Heads of the 50 states and the territories of this nation with a chance to spend some time together, free from the daily impingements of an administrative and operational job, to study major issues in American education. A discussion of various ways that state departments of education might give leadership to the resolution of these issues, to share successful experiences relating to these problems and to exchange points of view of the issues among themselves and outstanding students, was the second purpose of the institute.

Seven days of intensive study and discussion with the top leadership of the U.S. Office of Education and the specialists invited to speak to the Chiefs reached an apparent consensus regarding the issues that are facing *Man Education and Society: The Year 2000.*

This Institute report contains the major addresses presented by speakers and an editorial interpretation of the speeches and discussions that followed each presentation.

The seven topics chosen for study by the Executive Committee of the Council of Chief State School Officers, the U.S. Office of Education and the Institute Director fell under the broad concept of "the future" and specifically *Man Education and Society: The Year 2000*. The issues selected were as follows:

1. The Role of the Future in Education
   Alvin Toffler
2. Education and Human Resource Development
   Willard Wirtz
3. The International Situation — The Role of Education
   Frederick Champion Ward
4. Economic Patterns — Public Dollar Availability
   Allan K. Campbell
5. The Shape of Democracy: The Citizen Role
   Forbes Bottomly
6. The Public and Private Life of the Individual
   Harold Shane
7. Energy, Natural Resources and Growth
   Charles J. Ryan

Each speech is reproduced as written except in the cases where no written paper was submitted, in which case a review of the tapes of the speech and the discussions that followed provided what is hoped, by this editor, is an accurate presentation.

Concise summation of the discussions following each topic would be impossible since no consensus regarding solutions to the issues were intended, desired, nor possible.

The following editorial comment is made based on a look at the total topic — the relationships among man, education and society in the future. Rather than an individual issue analysis, the overall conference inputs and discussions are brought together in the final chapter of this report.

The lateness of this report is not rationalized, but is simply explained as due to the illness of the director occurring at the time of the Institute and continuing for several months afterwards. Like most experiences, it teaches well. The tuition is high but the results are excellent — my health is now better.

ALVIN TOFFLER

Alvin Toffler is the author of *Learning for Tomorrow* and the best seller *Future Shock*. A former Associate Editor of *Fortune* magazine, he has served as visiting Scholar at the Russell Sage Foundation and Visiting Professor at Cornell University. At the New School for Social Research in 1966, he taught one of the first courses devoted entirely to the future. He is editor of *The Schoolhouse in the City* and *The Futurists*. He is author of an earlier book called *The Culture Consumers*.

His expertise has made him a much sought after consultant. He is consultant for the Rockefeller Brothers Fund, the Institute for the Future, A.T. and T., System Development Corporation, Educational Facilities Laboratories, Inc., and numerous other organizations.

Among his numerous honors and awards are the McKinsey Foundation Book Award in 1970, the Award of the National Council for the Advancement of Educational Writing in 1969 and the 1970 Playboy Best Article Award.

The "Psychology of the Future" is Chapter One by Alvin Toffler in *Learning for Tomorrow – The Role of the Future in Education*, edited by Toffler and published by First Vintage Books Edition, 1975.

The opening speech by Toffler at the 1974 CSSO Institute closely paralleled this chapter and is reprinted in this report since there was no written paper and the tape of his speech did not turn out clear enough to edit for this report.

Toffler presents the basis of an emerging change role for education today and in the future. His remarks set the stage for speeches and discussions during the balance of the institute.

His theme is that educational institutions have essentially been tied to the past as "maintainers" of a static, predictable society. We must now educate our young for the future which is neither predictable nor stable.

THE PSYCHOLOGY OF THE FUTURE

by Alvin Toffler
Author of Future Shock

All education springs from some image of the future. If the image of the future held by a society is grossly inaccurate, its education system will betray its youth.

Imagine an Indian tribe which for centuries has sailed its dugouts on the river at its doorstep. During all this time the economy and culture of the tribe have depended upon fishing, preparing and cooking the products of the river, growing food in soil fertilized by the river, building boats and appropriate tools. So long as the rate of technological change in such a community stays slow, so long as no wars, invasions, epidemics or other natural disasters upset the even rhythm of life. It is simple for the tribe to formulate a workable image of its own future, since tomorrow merely repeats yesterday.

It is from this image that education flows. Schools may not even exist in the tribe; yet there is a curriculum — a cluster of skills, values and rituals to be learned. Boys are taught to scrape bark and hollow out trees, just as their ancestors did before them. The teacher in such a system knows what he is doing, secure in the knowledge that tradition — the past — will work in the future.

What happens to such a tribe, however, when it pursues its traditional methods unaware that five hundred miles upstream men are constructing a gigantic dam that will dry up their branch of the river? Suddenly the tribe's image of the future, the set of assumptions on which its members base their present behavior, becomes dangerously misleading. Tomorrow will not replicate today. The tribal investment in preparing its children to live in a riverine culture becomes a pointless and potentially tragic waste. A false image of the future destroys the relevance of the educational effort.

This is our situation today — only it is we, ironically, not some distant strangers — who are building the dam that will annihilate the culture of the present. Never before has any culture subjected itself to so intense and prolonged a bombardment of technological, social, and info-psychological change. This change is accelerating and we witness everywhere in the high-technology societies evidence that the old industrial-era structures can no longer carry out their functions.

Yet our political leaders for the most part propagate (and believe) the myth that industrial society is destined to perpetuate itself indefinitely. Like the elders of the tribe living on the river-

bank, they blindly assume that the main features of the present social system will extend indefinitely into the future. And most educators, including most of those who regard themselves as agents of change, unthinkingly accept this myth.

They fail to recognize that the acceleration of change — in technology, in family structure, marriage and divorce patterns, mobility rates, division of labor, in urbanization, ethnic and subcultural conflict and international relations — means, by definition, the swift arrival of a future that is radically different from the present. They have never tried to imagine what a super-industrial civilization might look like, and what this might mean for their students. And so, most schools, colleges and universities base their teaching on the usually tacit notion that tomorrow's world will be basically familiar: the present writ large. Nothing I believe, could be more profoundly deceptive.

I would contend, in fact, that no educational institution today can set sensible goals or do an effective job until its members — from chancellor or principal down to the newest faculty recruit, not to mention its students — subject their own assumptions about tomorrow to critical analysis. For their shared or collective image of the future dominates the decisions made in the institution.

The primitive father teaching his son how to carve a canoe had in mind an image of the future his son would inhabit. Since he assumed that the future would replicate the present, just as the present replicated the past, his image of the future was just as rich, detailed, comprehensive and structured as his image of the present. It was his image of the present. Yet when change struck, his imagery proved not merely obsolete but anti-adaptive because it left out the possibility of radical change.

Like our distant ancestor, educators too, need an image of tomorrow's society. But this image must include the possibility — indeed the likelihood — of radical change. This image need not be "correct" or "final"; it cannot be. There are no certainties, and any picture of a forseeable society that depicts it as static or stable is probably delusory. Thus, to design educational systems for tommorrow (or even for today) we need not images of a future frozen in amber, as it were, but something far more complicated: sets of images of successive and alternative futures, each one tentative and different from the next.

These images of tomorrow cannot be predictive in the sense that they discern some unshakable future reality. The possible future is not singular, but plural, subject to the choices we make among innumerable arrayed options. Moreover, the tools we have for identifying possible and probable futures are still very

primitive. Yet some lines of development are more likely than others, and it is only by making explicit our assumptions about where we seem to be going that we can formulate sensible goals. Only in this way can we deduce the kinds of human abilities, skills and growth patterns that need to be encouraged.

Scenario in the Classroom

What applies to the educator and the institution applies even more strongly to the learner. Just as all social groups and institutions have, in effect, collectively shared images of the future, each individual also has, in his or her cranium a set of assumptions, an architecture of premises, about events to come. The child, almost from birth, begins to build up a set of expectations from its daily experience. Later these expectations become more complexly organized, and they begin to encompass more and distant reaches of future time. Each person's private image of the future shapes his or her decision-making in crucial ways.

Students today receive a vast amount of undigested information and misinformation from newspapers, records, TV, movies, radio and other sources. As a result, they are aware of the rapidity with which the world is changing. But if many young people are prepared to contemplate the idea of radical change in the real world this does not mean that they have the slightest idea about the implications of high-speed change for their own lives.

Some time ago, I performed an unusual and confessedly non-scientific experiment with thirty-three high-school students, mainly fifteen and sixteen-year olds. I asked each of them to help formulate a collective image of the future by writing down on a slip of paper seven events he or she thought likely to occur in the future, and to then date these events. I avoided saying anything that would restrict the kind of events or their distance into the future. The class threw itself enthusiastically into the exercise, and in a few minutes I had collected from them 193 forecast events, each of them duly dated. The results indicated that these urban, middle-class, rather sophisticated teenagers had accomplished many notions about the world of tomorrow.

From their forecasts there emerged, for example, a terrifying future for the United States in which, presumably, they would live out at least a part of their lives. The class scenario begins peacefully enough with predictions that the Vietnam War would end and United States relations with China would improve, both in 1972. (The exercise was run a year earlier, in 1971). But soon events become more turbulent. New York City breaks away to become a state in 1973, and 1974 is a bad year characterized by race riots in June and a United States pullout from the United Nations. While both marijuana and prostitution are legalized, in-

ternal political events must be bleak because 1975 sees a political revolution in the United States, and gas masks are distributed presumably because of the pollution. By 1977 the space program has ended and United States citizens are under constant surveillance in streets and homes. Senator Kennedy emerges somehow as President in 1978 (a special election?) but a major financial crisis occurs, and the following year, 1979, we break off relations with Europe. We learn to cure cancer, but by then pollution has become irreversible and we are highly dependent upon the oceans for food. All this, however, is merely a prelude to a cataclysmic year, 1980. That year can be best described in a burst of screaming headlines:

AMERICAN REVOLUTION OVERTHROWS PRESENT GOVERNMENT
CULTURAL AND POLITICAL REVOLUTION BREAKS OUT IN U.S.
MAJOR RIVERS AND STREAMS DIE
NATURAL DISASTER WIPES OUT MANY PEOPLE
FAMILY SIZE LIMITED
MARS LANDING
COLONY PLANTED ON MARS
NUCLEAR WAR BREAKS OUT!

America's time of troubles is far from over. In 1981, Richard Nixon is assassinated, and while race relations take a turn for the better, and the renewed space program results in new missions to the planets, by 1983 we have a military dictatorship ruling the nation. Now the Soviet Union joins with the United States in a war against China (this is, after all, 1984 by now). Scientific progress continues and the rate of change accelerates further — indeed, embryos now take only six hours instead of nine months to gestate. But science is of no help when California, hit, one assumes, by an earthquake, slips into the Pacific Ocean in 1986. We are beginning to colonize the moon, while population on earth reaches a crisis point, and the dollar is now worth only 25 per cent of its 1971 value.

As the 1990's open, the Russo-Chinese War is still on, but things begin to improve. Peace among the great powers becomes more likely. Nuclear energy, especially in the form of fusion reactors, is widely in use, and a three-day work week is initiated. Our ecological problems are still extremely pressing, but solutions are at least in sight. In fact, 1995 looks like a good year. The government changes, the space effort expands once more, we finally develop a "more organized system" of education, and apparent-

ly, young people are making their political weight felt, for we elect a new President who is only twenty years old. (Scoffers might note that William Pitt became prime minister of Britain at twenty-four.) We are now also experiencing zero population growth.

I will not go on to describe their forecasts after 2000 A.D., but there is enough here presumably to suggest that at least this group of teenagers do not look forward to a stable world, or one progressing smoothly along well-worn grooves. They look forward to high turbulence for at least the next two decades.

Cultural Premises

The collective image of the future, whether expressed by a group of high-school students, a group of educational planners, or even the political leadership of the nation, can tell us a great deal about its creators and the culture in which they are embedded. For example, the events envisaged by my experimental group ranged themselves over an extremely long time span. The soonest any event was due to occur was "next Sunday." The latest was to happen in 31,971 A.D. — the year the sun would burn itself out. There were also two events listed as "never" likely to occur. One was "the end of human life." The other, a sardonic entry, no doubt, was "end of Vietnam These characteristics of the image of the future may seem inconsequential, but they betray telltale evidences of their cultural origins. For in many cultures the idea of the future, itself, is non-existent, the idea of infinity ("never") is lacking, and in others, including many Western cultures before Darwin, a 30,000-year time span is inconceivable.

Similarly, it is revealing, though not necessarily surprising, that certain points in time seem more dramatic or more "real" than others, or that forecast events seem to cluster, rather than distribute themselves evenly along a time scale. For these teenagers, 1980 looms as an important year, and so well publicized is the millennial turning point, 2000, that it magnetically attracts forecasts, even though, all things being equal, 1999 is just as likely or unlikely a time for events of significance to occur. This "lumpiness" or clustering of forecasts may reflect the influence of our decimal-based mathematical systems.

By listing every forecast made by the class in chronological sequence, one can analyze with students the contradictions in them and the assumptions that lead to these differing and sometimes contrary, forecasts. One can, in other words, examine the internal consistency and coherence of the imagery and the values or cultural assumptions that lead to differences between one student's scenario and another's. All this, of course, has nothing to do

with the validity of the actual forecasts. But with the collective image of the future in hand, one might compare students forecasts with those produced by experts in the various relevant fields — politics, technology, urban affairs, family life, international relations, etc.

More important, one might critically analyze the forecasts of the experts, probing for the hidden assumptions and methods of analysis used by them. In short, the image of the future provides not merely a set of interesting insights into the students' own views, but also a powerful learning tool. Yet even this gives only a hint of its educational importance.

The Impersonal Future

Perhaps the most striking fact about these forecasts has to do with the role of the student, his or her self-image as seen in relationship to the outside world. Indeed, in asking the students for their images of the future, I was less interested in the future, as such, or in their attitudes toward it, than I was in their attitudes toward change.

I was, therefore, fascinated and troubled to discover that for this class, while the future was clearly exciting as subject matter, it was distinctly impersonal. Thus, of the 193 responses, fully 177 referred to events that would occur "out there" somewhere in the world of the universe. Only sixteen events made any reference to "I" — the student making the forecast. Of the thirty-three students in the class who submitted usable responses, only six saw themselves as part of the picture.

One student, along with such forecasts as antigravity cars (1984) and destruction of the earth (2050-2100), scheduled his or her own life as follows:

Graduation	1976
Working	1977
Marriage	?
Success	1984
Death	2030-2040

Another forecast marriage in 1980 and concluded "I will be a great lawyer" by 1988. He, too (a boy, I would guess from his prediction that the football Giants would win the 1974 Super Bowl), slated himself to die in 2040. One respondent forsaw his or her own death by 1996 — i.e., at about age forty.

Death, despite cryogenics and research into aging, is still regarded as a high-certainty event, and every one of the six stu-

dents who made reference to their personal lives in any way included a forecast of his or her death-time. Indeed, one, whose forecasts included a new government for the United States in 5561 A.D., predicted his or her own death in 1971 — in other words, in the immediate future! (Because of the anonymity procedures followed, it was impossible for me to identify this student, but one wonders how deeply parents or teachers have explored his or her image of tomorrow.)

Having tried a similar experiment with another much smaller group earlier, I was not surprised by the lopsided emphasis on the impersonal or nonpersonal in thinking about the future. In general, at least for the teenagers I have experimented with, the future is something that happens to somebody else.

On one occasion, in fact, I asked respondents to draw up two lists. First, I asked in a general way for a list of future events. When not a single personal reference turned up, I asked for a separate list of events that would happen to them personally. It was then easy to compare each personal future with the larger, public or social future in which it would unfold. The results were dramatic. One could not help but be struck by the disconnectedness between the two sets of forecasts. One fifteen-year-old girl, for example, after picturing a U.S.-U.S.S.R. alliance against China, a cancer cure, test-tube babies, an accidental nuclear explosion, the spread of anarchism over large parts of the world, and robot computers holding political office in the United States, offered the following personal forecast:

Moving into my own apartment
Interior designing school
Driver's license
Getting a dog
Marriage
Having children
Death

The world in upheaval would leave her untouched.

I must emphasize that the teenagers making these forecasts were incontestably bright, lively, and probably more sophisticated than their counterparts in smaller cities. Yet no matter how turbulent a world they pictured, no matter how many new technologies might appear or what political revolutions might take place, the way of life foreseen for themselves as individuals seldom differed from the way of life possible in the present and actually lived by many today. It is as though they believed that everything happening outside one's life simply by-passes the individual. The respondents, in short, made no provision for

change in themselves, no provision for adaptation to a world exploding with change.

I pursue this not because I think these experiments are anything more than suggestive; I would expect different groups to formulate quite different images of tomorrow and to reflect different degrees of connectedness with the racing pulse of change. Rather, I raise it because I believe that the schools and universities, with their heavy emphasis on the past, not only implicitly convey a false message from the future — the idea that it will resemble the present — but also that they create millions of candidates for future image and his or her "self" not as subject to change, growth or adaptation, but as something static.

THE FUTURE SCANNING TALENT

It is perfectly astonishing, once we stop to consider it, that we are able, out of the stuff of everyday experience, to conjure up dreams, visions, forecasts and prophecies of events yet to come. Scientists marvel at the body's machinery for sensing the environment and for converting its impressions into concepts, ideas, symbols and logic. Yet our talent for projecting images of the future is even more remarkable. In fact, though educators have scarcely noticed it, this "future-scanning" talent is the basis for learning itself.

If we could not form anticipatory mental pictures of the future, if we could not match these against emergent realities and then correct them, we could not — except in the narrowest sense — learn at all.

All of us project an ever-changing image of the future on the screen of consciousness. Our heads teem with assumptions about the future. These assumptions can be very short-term and practical. I may do no more than assume, for example that the postman will arrive in the morning or even that the cup of tea will still be there an instant from now, when my fingers close around it. On the other hand, the assumptions may be very long-range and impersonal. I may envision a world racial conflict in 1985, the emergence of Japan as the world's chief industrial power by 1990, or a meeting with extraterrestrials in the year 2000. The assumptions may be correct or incorrect, consistent or inconsistent, slowly changing or turning over rapidly. But whatever the case, taken together, they constitute my image of the future.

The invisible architecture of assumptions shapes my personality and lends consistency to my behavior. These assumptions, in fact, make it possible for the individual to survive in varied and

fast-changing environments. For it is precisely this ability to visualize futures, to generate and discard thousands upon thousands of assumptions about events that have not yet — and may never — become reality, that makes man the most adaptive of animals. It is a prime task of education to enhance this ability, to help make the individual more sensitively responsive to change. We must, therefore, redefine learning, itself. Put simply, a significant part of education must be seen as the process by which we enlarge, enrich, and improve the individual's image of the future.

Action and Imagery

Education, however, is not just something that happens in the head. It involves our muscles, our senses, our hormonal defenses, our total biochemistry. Nor does it occur solely within the individual. Education springs from the interplay between the individual and a changing environment. The movement to heighten future-consciousness in education, therefore, must be seen as one step toward a deep restructuring of the links between schools, colleges, universities and the communities that surround them.

The ultimate purpose of futurism in education is not to create elegantly complex, well-ordered, accurate images of the future, but to help learners cope with real-life crises, opportunities and perils. It is to strengthen the individual's practical ability to anticipate and adapt to change, whether through invention, informed acquiescence, or through intelligent resistance.

To function well in a fast-shifting environment, the learner must have the opportunity to do more than receive and store data; she or he must have the opportunity to make change or to fail in the attempt. This implies a basic modification of the relationship between educational theory and practice.

High-speed change means that the reality described by the teacher in the classroom is, even as the lesson proceeds, undergoing transformation. Generalizations uttered by the textbook or the teacher may be accurate at the beginning of a lesson, but incorrect or irrelevant by the end. Insights, highly useful at one time, became invalid under the new conditions. The instinctive recognition of this by young people has been one of the key factors behind the collapse of teacher authority.

In the past, one assumed that one's elders "knew" how things were. Yet if the reality is changing, then their knowledge of it is not necessarily trustworthy any longer, and, significantly, they too, must become learners.

When we introduce change and, therefore, higher levels of novelty into the environment, we create a totally new relationship between the limited reality of the classroom and the larger reality

of life. Abstractions are symbolic reflections of aspects of reality. As the rate of change alters technological, social and moral realities, we are compelled to do more than revise our abstractions; we are also forced to test them more frequently against the realities they are supposed to represent or explain.

Those who conduct opinion surveys know that the more variation there is in a population to be sampled, the larger the sample required to get an information-rich result. The more rapid the pace of change, the more novelty-filled our environment, the more often it becomes necessary to "sample reality" — to check our abstractions.

Thus learning under conditions of high novelty requires us to move back and forth between theory and practice, between classroom and community, faster and more frequently than ever before. Failure to measure our abstractions often against reality increases the likelihood that they will be false. But the university and the lower schools, as organized today, are designed to construct or transmit abstractions, not to test them.

This is why we need to accelerate the trend in many colleges and Universities to offer credit for action-learning done off-campus through participation in real work, in business, in community political organizing, in pollution-control projects, in other activities. Many of these efforts today are badly organized, ill-thought-through, and regarded by the university as basically insignificant — concessions to the restlessness of students who no longer want to remain cooped up in the classroom. I would argue that such efforts not only must be continued, but must be radically expanded, must be linked more imaginatively to the formal learning process, must be extended downward to younger and younger students in the secondary schools and even, through adaptation of the idea, to primary-school children. Indeed, for older students, this action-learning ought to become the dominant form of learning with classroom learning seen as a support rather than as the central element in education. Such experiments as the University Without Walls are primitive prototypes of what is possible.

Students learn best when they are highly motivated to do so, and despite a great deal of mythology to the contrary, this motivation rarely comes from "inspired teachers" or "well-designed texts" alone. So long as students are cut off from the productive work of the surrounding society and kept in an interminably prolonged adolescence, many — if not most — are demotivated. Teachers, parents and other adults may shower them with flowery rhetoric about how today's youth will be the leaders and decision-makers of tomorrow. But the rhetoric is contradicted by

a reality that actively deprives the young of participation either in significant community decision-making or in socially approved productive work. Beneath the rhetoric lies a contempt summarized in the twin terms "parasites" and "investments." Conservatives tend to look upon students as parasites, eating up community resources without contributing anything productive in return. Both notions are insulting.

The secret message communicated to most young people today by the society around them is that they are not needed, that the society will run itself quite nicely until they — at some distant point in the future — take over the reins. Yet the fact is that the society is not running itself nicely, and, indeed, there may be little of value left for them to take over in the future, unless we reconceptualize the role of youth in the social order. Not because young people will necessarily tear down the social order, but because the rest of us need all the energy, brains, imagination and talent that young people can bring to bear on our difficulties. For the society to attempt to solve its desparate problems without the full participation of even very young people is imbecile. My father worked at twelve or thirteen. Most children in the past — and most children of the less affluent nations today — were and are needed for their productive contribution. It is a dangerous myth of the twentieth-century rich that our children are not needed, that they can be kept in artificial environments called schools and universities, incubating until they are twenty- one or even thirty, before being expected to participate in the everyday affairs of the society.

In the United States we herd 8,000,000 university students and some 51,000,000 younger children into educational institutions, assuring them all the while that it is for their own future benefit. It is all done with the best of intentions. It keeps them out of the labor force and, for a while, off the streets.

This policy, however, is based on a perilously faulty image of the future. By maintaining the false distinction between work and learning, and between school and community, we not only divorce theory from practice and deprive ourselves of enormous energies that might be channeled into socially useful action, we also infantalize the young and rob them of the motiviation to learn.

On the other hand, by linking learning to action — whether that takes the form of constructing buildings on campus, or measuring traffic flow at an intersection and designing an overpass, or campaigning for environmental legislation, or interning at city hall, or helping to police a high-crime area, or serving as sanitation and health aides, or building a stage set, or doing research for a trade

union, or working out a marketing problem for a corporation — we change the source of motivation.

The motive to learn is no longer the fear of a teacher's power to grade or the displeasure of the parent, but the desire to do something useful, productive and respected — to change the community, to make a dent, if even a small one, on reality. This desire to leave a dent, to make an impact, today fuels a wide range of antisocial activity from spray-painting graffiti on a public wall or vandalizing a school building to committing murder. It is not unrelated to the fact that most crime is the work of the young.

Only by recognizing the urgency of this desire to make a mark (and thereby to clarify or establish one's own identity) and by reconceptualizing the role of youth with respect to work and social needs can the education system become effective.

Today, unfortunately, most action-learning programs scarcely begin to take advantage of their full potentials. For example, most are seen as forms of independent study. For many students, they might be far more effective as group ventures. The organization of groups of students (self-organization would be better) into problem-solving or work teams makes it possible to design additional learning — learning about organization and group dynamics — into the situation. By consciously including people of varied ages in such teams, it becomes possible to provide "generational bridges" — a way of breaking down some of the trained incapacity of different age groups to talk to one another.

Through focusing on some sharply defined external objective or desired change, the group develops a degree of shared intimacy and attacks the prevailing sense of loneliness and isolation felt by so many students even on small campuses. Most important, however, the motivation for learning changes. The group itself generates internal social reinforcements for learning, and the nature of the problem being attacked defines the nature of the learning required, so that the definition of relevance is created by the real situation rather than by the say-so of a teacher.

Members of a small group working to bring about some change in the ecological condition of their community, for example, will find they must learn something about science, economics, sociology and politics, as well as the communicative skills required to define the difficulties, outline alternative solutions, and persuade others.

In the meantime, decision-making, so crucial to coping with change, becomes, itself, a subject of the learning process. Most students in most schools and universities seldom participate in group decision-making. While they may be asked to make decisions about themselves — such as which courses to take (and

even this is restricted at the lower levels) — they are seldom called upon to make personal decisions that affect the work or performance of others. The decisions they are characteristically called upon to make have little or no impact on anyone's life but their own. In this sense, they "don't count." They are isolates. Attempting to solve real-life problems, action-learning done in the context of a goal-sharing group, trains the participants in decisional skills and begins to develop an understanding that their decisions do count — that personal decisions can have important consequences.

It is precisely at this point that action learning converges with future-consciousness. For, when we speak of an image of the future, we are speaking of the ramified consequences of present-day decisions, whether public or personal. Action-learning, particularly when carried out by groups, is a useful tool for demonstrating the necessity for a future-orientation — the need to study alternatives, to develop long-range plans, to think in terms of contingencies — and especially to think through the consequences, including second- and third-order consequences, of action.

This emphasis on the future can, furthermore, be applied not merely to group issues, but to the development of generalized, tentative life-plans for the individual participants as well — plans which the learner is, of course, free to change at will, but which, by their very existence, help orient the individual in the midst of hurricaning change. In this way, the future becomes intensely personal, instead of remote.

In turn, the development of group or personal plans, however tentative, immediately forces the question of values into the foreground. For plans have to do with our images of preferred futures, as distinct from those that are merely possible or probable. No problem in educaton has been more disgracefully neglected in recent years. The attempt to avoid ancient orthodoxies having led to the myth of a value-free education, we now find millions of young people moving through the educational sausage-grinder who have never once been encouraged to question their own personal values or to make them explicit. In the face of a rapidly shifting, choice-filled environment, one which demands decision after adaptive decision from the individual, the neglect of value questions is crippling.

Action-learning creates opportunities for students to move from the field back to the classroom or lounge or living room not merely for analytic discussion of their strategies for change, but for probing exploration of the personal and public values that underlie their successes and failures. This process of value clarification is a vital part of any education designed to help people cope with "overchoice."

In short, the combination of action-learning with academic work, and both of these with a future orientation, creates a powerfully motivating and powerfully personal learning situation. It helps close the gap between change occurring "out there" and change occurring within the individual, so that learners no longer regard the world as divorced from themselves, and themselves as immune to (and perhaps incapable of) change. In a turbulent, high-change environment, it is only through the development of a "psychology of the future" that education can come to terms with learning.

WILLARD WIRTZ

The Secretary of Labor in the Cabinets of President Kennedy and President Johnson earned his degrees from Beloit College (A.B.) and Harvard University (LL.B). He was a teacher of law at the University of Iowa and Northwestern University.

He has been a labor arbitrator and practicing lawyer in the Chicago firm of Stevenson, Refkind, and Wirtz. Currently, he is President of the Manpower Institute; Chairman of the Board of Curriculum Development Associates, Inc.; a Trustee of Amhurst College; and a member of the Washington, D.C. law firm of Wirtz and Gentry.

He has been recognized with numerous honorary degress from colleges and universities and is the author of the book *Labor and the Public Interest* and most recently, *The Boundless Resource – A Prospectus for an Education/Work Policy*.

Patterns of work, education, and leisure developed in the past are little applicable in a technological changing society — yet, we find little change in the organization and structure of education nor in the work patterns of indivdiuals. The pattern of the young learn, the middle-aged earn and the old yearn, are still ill suited to tomorrow's world.

Mr. Wirtz points out the immediate problems occurring before the year 2000 which must be dealt with — unemployment and underemployment, especially for the young, the changing nature of the role of women in the work force and the need for continuing education and experimental learning for all citizens as well as for youth. The need for basic tool learning skills and increased flexibility in the separate but important kingdoms of education and work — how can these be put together since they indicate a new dependency on each other not previously understood?

MANPOWER AND HUMAN RESOURCE NEEDS

by Willard Wirtz
President, The Manpower Institute

I've enjoyed getting ready for this morning, and I mean that in more than the usual sense. I have been hearing for a number of years various references to the futuristic aspects of education. There is a considerable amount of data and responsible conjecture about the future but until now, I have only known that it was out there someplace. This was an occasion which gave me an opportunity to look into it.

I salute the wisdom of the decision to organize this conference around a look into the future, and I welcome this opportunity to explore some of the literature and data with you.

I've come up with four pieces of equipment (suggestions) that anybody who is about to take a safari into the future should have; anybody at least, from our background.

The *first* is a ladder to get out of the rut we are in, even if we do not realize it, — especially those of us who are consigned by circumstance to a public responsibility. Any who is in public office of any kind is so pressed with the demands and dictates of the immediate that it is very hard to persuade oneself that all this future stuff has anything in it. I recommend the ladder, which I've used, to get out of a rut in connection with this presentation.

Secondly, I would pack two or three re-usable grains of salt. A lot of what I run into seems to require the use of a few grains of salt; particularly the statistics, not because they are wrong, most of them turn out to be right, but because they are so confounded selective. I run into all kinds of data to do with the future, namely demography.

I realize that these people all know what is going to happen to the population in the next fifteen to twenty years. That is predictable, at least if we are looking at the work force as I am. Most are already born, and whether you want to or not, there is not much you can do about it. Starting from what is known about these demographic statistics, I find them terribly overbalanced on the side of the demographic force because there is nothing else sure on which to rely.

Thirdly, I recommend taking a strong diuretic or a cure for diarrhea because of the pessimism that gives me a feeling that I have to do something to neutralize it. There are several possibilities why the people who look at the future turn up so pessimistic. One of these is that they are right. Every time you look ahead, the only wise reading of the evidence is that things are going to hell

and very rapidly. I have to dismiss that.

Another possibility is that if one looks at the future particularly, the inclination is to rely on Murphy's law — anything that can go wrong, will. Not knowing whether one is going to go one way or the other, one just assumes that everything does go wrong.

Another is the public as an audience has an intense appetite for the apocalyptic. If one comes up with a dire prediction of something or other, it is listened to. If one comes up with a suggestion that things are alright, that isn't really news, and it does not receive the same attention.

I don't have that pessimistic feeling. I look to the future with a good deal of optimism or at least reasonable confidence. If there isn't any reason for it, I will go on faith. I have yet to be persuaded that the only things that are true are those that can be proven. I do not know where one gets support for that proposition. If one refuses to think that the whole human program is laid out on comic-tragic lines, it is only wise to make the best of it. I find, in what lies ahead, a good deal of reason for optimism.

A *fourth* piece of equipment is a long piece of string to find one's way back. It is fun to go browsing into the future, but unless those of us, at least in your positions and what has been in a sense mine, take that string and follow it back, climb that ladder again back into the rut and decide what can be done next, we really haven't accomplished anything.

Armed with this equipment, I plan to make this a brief exploration, and not so brief either. But first, there are two or three preliminaries.

My title is "Manpower and Human Resource Needs." There are two or three things concerning that title I wish to mention. First, whose needs are we talking about? That title sounds a little as though we are talking just about the system's needs. If you know one of the organizers of this conference as well as I do, you would know that when Grant Venn sends me a title "Manpower and Human Resource Needs," it is either redundent, or it is a suggestion that I pay attention to the individual's needs as well as the system's needs — or so I interpret it, and would like to revise the subject to the use of the human resource in the future and to tie that in with what the educational implications might be.

I also note that the assignment today is significantly narrower than the assignments for the five days of the next week. If there is anything which differentiates this problem of manpower and human resource needs from the five you are talking about during this week, it is a narrow and specific application that is obviously affected by those five other areas.

I have one other revision in the title. You have taken the year 2000. I looked at the data for the year 2000, and found that there

weren't any that were worth reporting to you. There was, however, relatively good data for 1985, and so with your permission, or if need be without, I will revise this subject to be "Manpower and Human Resource Needs in the Year 1985."

There is another reason for taking 1985. It isn't that it is just one year away from George Orwell's 1984, but rather that when one thinks about it, those who are entering your jurisdiction right now, will in 1985, be coming to the border between education and work which presents us with so many problems.

I find it easier to think in terms of what we might do about those who are going into the pipeline than I do about those who are already in the pipeline. So we shall look into 1985.

One other thing I am going to state in the beginning concerns three conclusions I have come to. Having come to these conclusions, they inevitably affect the selection of detail and data which I will be presenting.

The *first* has to do with the point I have already mentioned. There is a lamentable and unnecessary dirth of data about the question of the future of work and life experience and what bears on the educational function.

You would think that there would be all kinds of literature aimed at this point. I had, at one point, twenty books on my desk which is unusual for me.

Someone ought to concentrate on the question of what there is in the evidence before us that can be brought to bear on the subject of the future of work life and experience and the relationship to education.

My *second* conclusion is that the present state of knowledge, as far as the future in this area is concerned is not sufficiently clear to recommend any specific program or clear policies, but that it does indicate strongly the necessity for new processes. Particularly processes that bring together the administrative leadership of the educational and the employment community as a two-dimensional process and which includes representatives of the community as the third dimension of the same process.

Thirdly, I suggest only one of which might be called policy conclusions. It is that we should break down the three time traps in which we have presently divided life. Youth for learning, middle-age for earning and old-age for yearning.

When I have tried to tie education in with work, I can only conclude as a collaborative process on the one hand and on the other, an anachronism which says that kids or the people are in education until about the ages of eighteen to twenty-three, then work, then retire. Until we break down those time traps, I don't think we are going to get very far with bringing the two life experiences together.

So stating the affirmative of the suggestion that we must look forward to the establishment of a lifetime continuum of interchange between education and work experience, is where we will come out.

Turning to the data, I would like to present it in two packages. One is the data that is a matter of record which I think should be brought to your attention. I think it is relatively specific, relatively unsatisfying, and yet illuminating. This is the data describing the work situation of the future, based largely on the Bureau of Labor Statistics studies.

These data are called the total civilian non-institutional labor force. I am going to go through it rapidly, just to suggest the context, then a more deliberate consideration of three or four other forces which seem to me to bear on the situation.

If you want to know the future of Manpower needs or the resource needs, the statisticians would answer you precisely that today there are 92-92½ million people in the civilian-non-institutional work force. By 1985, that number will go up to 108 million — so what?

The total labor force figure is broken down into several differentiations. The first of those is sex. Perhaps it's important, although I don't see anything particularly spectacular about it. Today men are 62% of the work force, women 38%. By 1985, the figures will be 61% and 39%. The women will go up just a little as far as the total labor force is concerned. Similarly, as far as race is concerned, blacks and other minority groups today are 11½% of the work force.

I find nothing in either of those projections which amounts to much that is significant as far as education is concerned.

We come next to a breakdown on the basis of age. An extraordinary amount of the futuristic projection in this field of manpower needs and their relationship to education is based on the change in the age composition of the work force. I simply report to you, and then pass on because I don't find it significant either that the median age of the work force has been going down rapidly — not too rapidly, but significantly. In 1960, age 40 was the median age of the work force. It is presently 36.8. The drop will continue, but it has slowed down. The median age of the work force in 1985 will be 35.8.

The other subject in this area to which I think inordinate attention has been paid is this matter of the baby boom or the baby bust which has been moving through the education system and through the work force.

You know the phenomenon. Between 1932 and 1946, there were 40 million babies born. Between 1947 and 1962, there were 60 million babies born. Between 1962 and 1976, there were only 45

million babies born.

There has been a spectacular development, the root of all this is the post-war baby boom — an extraordinary drop, I guess a derailment of the "Streetcar Named Desire" or something of that sort. It has gone down so rapidly that the policy makers have not been able to keep up with it. The fertility rate has dropped in a period of about ten or twelve years from 3 children per woman, per family, to 2.

It has happened so rapidly that in the last four years when the Census Bureau came out with a series "A" which anticipated a 3.2 child birth rate, they have had to go through four or five series. We now have series A, B, C, D, E, and F, because the rate kept dropping every year.

The current figures now assume a 1.8 fertility rate where only four years ago, they were projecting in terms of at least a possibility of 3.2. This is spectacular and of extraordinary broad significance.

It does obviously effect education in one real way, in fact in at least two. One is that it has an obvious impact on the number of schools and classrooms that are needed. Second, it does affect very strongly the number of teachers that will be needed. You are familiar with the figure that we are training in this decade four million teachers for two million jobs. You know the effects of this, and when I try to find a broader implication of a change in working conditions and a change in the meaning of manpower needs and the uses of human resources, I don't find much significance. When one looks at it from another standpoint, that bulge and subsequent burst, or whatever you want to call it, represents serious deviations of the norm.

I come next to the breakdown on the basis of occupation. Educators have done an increasing amount of thinking in terms of these changing projections about the manpower needs in the various occupations.

Again, I can only remind you that there will be a marked increase in the number of white collar workers who are needed by 1985. There will be a stable situation as far as blue collar workers are concerned. The number of service workers and farm workers will decline.

Of those various figures, the only one I need to mention is that white collar workers are presently 48% of the work force. They will be, 11 years from now, probably 53% of the work force. But reach for the salt, because those figures don't mean much either when you say white collar workers that includes professional and technical workers which will go up sharply from 11% to 17%. Similarly, clerical workers will go up at 14% and 19%, but the

percentage of managers and administrators will go down quite sharply.

I have two suggestions to make. My first suggestion pertains to the extent one can rely on those projections of occupational needs in terms of current job descriptions. One must be careful to rely only on the very fine print because the summaries of them are quite misleading. My second suggestion is don't rely on those projections at all. I think the job needs and the content of the jobs is changing so fast that the reliance on these projections in terms of traditional job occupations is just almost worthless.

I'll return later with some other comments about the changing nature of work.

Now finally, those projections about the future of the work force indicate one other significant point. One has to decide what is going to happen as far as unemployment and employment is concerned. When one looks at all those projections, they wreck our whole game, because they are assuming that 4% is going to be the unemployment rate in 1985.

The unemployment figure has fluctuated in the last 13 years from 3.5% to 6.5%, so to take any particular figure of 4% is pretty questionable. I think if you are going to take one figure, that one is too low. I don't see much in the present prospect that suggest the present unemployment figure of 5.2% is going to be brought down in the next 11 years. I wish that I could find different evidence, but I think 4% is too low.

The rest of the difficulty is that 4% is an averaging of unaveragables. It averages in the adult unemployment rate of about 2.5% and a youth unemployment rate of over 15%, but it totally disregards that the black unemployment rate for teenage blacks and other minority groups is 25%. I don't think it is a very good figure. It begs the question of the dwindling natural resources or something else which would have an adverse affect on the unemployment figure.

This is the picture that I gave to you as quickly as I could with a feeling that I was under an obligation to present what evidence there is.

I would like to take the rest of the time to set up something that interests me a great deal more — a freer flight into the futurology. I will try to indicate several things in which there is at least some firm basis in present evidence for predicting or guessing about what will happen.

I am going to present four of these forces in a preliminary fashion with a suggestion that these four, rather than what I have just covered, will be the appropriate basis for our discussion this morning. I shall not try to exhaust the point, but will simply suggest these four developments as a basis for our subsequent discussions.

Now I mention the *first* one a little differently. I recognize the title of this conference is "Man, Education, and Society." I also recognize the implications of the seating of the head table last night. I am aware of the tight lines that the Chiefs draw as far as squaws are concerned. My respect for this body makes me not want to offend you in any way.

There are several elements contributing to this change, some of them obvious. Some others not so obvious. Such things, for example, as the very rapid development of day care programs. That is one of the most popular political issues today. There is bound to be a broad extension of the day care provision, whether for better or worse, I am not totally sure about it myself. It is going to mean that the number of women coming into the labor force is going to be much larger. There is a strong movement toward the provision of part-time work of one kind or another. Women will be insisting on it.

There is also today an extraordinary situation as sex stereotyping of work is concerned. It isn't realized that the 35-36% of women who participate, almost all are squeezed into four or five job classifications. They are going to break out of their restrictive work roles.

I mention only one other point as a basis for this feeling about the importance of this development and the future is concerned. In this country, there are 51% of the women not of the work force but of the electorate. Any minimizing of the importance of this change in the work force and the distribution of jobs would seem to be a great mistake.

Now if we are talking of higher education, I would be more inclined to spend some time talking about the implications of this development as far as education is concerned. As nearly as I can evaluate, it has less to do with respect to elementary and secondary education because, by and large, there has been a considerable equality of treatment as far as men and women are concerned. But it is creating a real difference when it comes to giving guidance and counseling to high school sophomore or junior girl. "Sister, if you will just stick to your class and do a reasonably good job, you can have almost any job you want." That will be the true advice as far as 1985 is concerned.

There are differences between this and the other major social advances of the last 10, 12 or 15 years with respect to racial equality.

I don't try to distinguish my feeling about the importance in terms of justice, humanity and equality as far as sex and race discrimination are concerned but as far as impact on the work force is concerned.

The effect of women's declaration of independence on the

achievement of equality is four or five times as great as that of the race simply because there is four or five times more women. In terms of magnitude, it is going to be very, very important. There is not an educational achievement lag as far as women are concerned. They are in a position politically, as well as equitably, on every basis to say right now; "I want the job and unless you have a better reason for giving it to a man, than that he is a man, give it to me, or I am going to see a lawyer." We are very close to that point.

The impact of this on the work force is one I put at the top in so far as the use of human resources and manpower needs in the next eleven years.

The *second* has to do with youth employment. I am less sure of this, but the evidence is now emerging pretty rapidly.

I think that by 1985, there will be very little work being done in what we think of as ladder jobs by anyone under age 20, or anyone without at least two or three years of college. Let me say it again. If work which is done by boys and girls under 20 is separated into two categories, one will be the ladder jobs, then entry jobs into something that comes above it. The other is the so called "dead end" work. I am suggesting that by 1985, there will be very few under 20, or very few without at least two or three years of college, who will be doing any of the ladder jobs. There is developing a strong practice of just not hiring boys under 20, this is not true of girls, for any promotable jobs.

The implications of this are deep and quite real for education if one feels as I do, that one of the great needs for the improvement of elementary or secondary education is the further development of these work-experience, work-study programs. I think that these programs should be developed around the kinds of jobs which are going to be available to youth. I think that there will be plenty of worker shift and other kinds of jobs for the development of work-experience programs. We have to start talking to the small local employer instead of General Motors, because for General Motors it is a headache. For other small employers, it is a real service and a very important piece of business. Yet, you will realize that almost all of the work-experience, work-study conversations so far have been between the educators and the big employers. I am suggesting that it is a mistake and a waste of time.

My second suggestion concerns the major force working for the use of human resources and manpower needs. It has a very important chemistry as far as youth employment is concerned which means that the work being done in the future will be almost entirely of the non-promotable type.

Girls are being brought into entry level jobs leading to promo-

tions. There is much less serious unemployment problems as far as young girls are concerned than young boys. When one stops to think why this is true, it is because the work that most women do is the type that can be done by an 18 or 19 year old girl. In other words, women find their place faster than men in this world and that is the reason why girls are being hired today for promotable jobs and boys are not. That will change.

The *third* point to which I would refer is of an entirely different nature. By 1985, there will be simply extraordinary change as far as the educational attainment level of the work force.

I have tried to find a single figure which characterizes the situation — I can't. I haven't given many figures, but there are eleven million college graduates today in the labor force, about one person out of every eight and a half. This thing is changing so rapidly that in a bare eleven years, that figure will go up to 20 million which means that one out of every five in the work force will have a college degree. One will realize that as far as entrance into the work force is concerned it is going to become critical, predominately because of the inflation of college graduates. The same thing is happening at the bottom of the educational scale.

Today, there are eleven and one-half million in the work force with eight years of education or less, eleven and one-half million — one out of eight. There will be eight million by 1985, that is one out of thirteen.

Now the question that brings us to that which I note here is "whether the needs of the labor market are going to satisfy the decision for the educational attainment level?"

The Bureau of Labor Statistics came out in December with this statement: "In the 1970's, the anticipated supply of college graduates is increasing faster than the demand for them. The surplus may amount to about 140,000 a year during the 1980 to 1985 period, or more than 10% of the projected supply."

If this is true, it is a development of major significance as far as education and work both are concerned. My strong suggestion is to reach for those two grains of salt that were put into your napsack.

Exactly the same prediction was made in 1950 about the next 20 years. As a matter of fact, the next 20 years between 1950 and 1970 the percentage of college graduates went up far faster than it is going up now. We were able to absorb it. I don't see how the BLS can doubt that the suggestion of this kind without a very careful evaluation of what the changing skill requirements and the educational requirements for a highly technological economy will be. There is remarkably little data about that available. I don't see how one can come to this conclusion without making a very clear, considered judgment as to whether an economy characterized by

a dwindling of natural resource supplies will not tend to turn to further development of human resources. I think we should.

I suggest that we come back in our discussion to this question of whether the obvious increase of the educational attainment level of the work force is going to be met by a similar development as far as the requirements for the work force are concerned.

May I suggest only one other thing. In thinking about it, don't think in terms of the poor college graduate. On the basis of past experience, if he or she is trying for a job and finds it filled and takes the next position that is lower — that boy or girl's education is still as good to him as before. I don't think this is the real problem.

Think of the impact it will have on those who do not have a college education and those who do not have a high school education. That is where the real rub will come as far as this whole thing is concerned.

As nearly as I can weigh the evidence, it suggests that there would be more reason to press for a fully accelerated development of the educational experience as possible. Maybe some humanitarianism is mixed up in that. I don't think so. I think that it is good economics.

My *fourth* point has to do with the composition and structure, not of particular jobs, but of employees' working lives today.

Let me suggest two elements in the career pattern of the individual by 1985 which seems to me a great deal more significant. One is the average member of the work force by 1985 will, during the course of his or her career, have at least three different jobs. Not one, three, so why talk about the relationship with one particular job with the kind of education. The important thing as far as education is concerned, is that the individual is going to have three different jobs. That is the least important of the two developments. The more important of the two developments, and interesting, is that by 1985, an individual in the work force will look forward to a prospect in which less than half of that individual's life is going to be take up by a combination of: job time, commuting time, and sleeping. Slightly over half is going to be available for whatever else that individual wants to do.

Let me go through that again. In the year 1900, a boy reaching the age of 15 left school went into a job and with a life expectancy of 45 years on the job at age 60, he knew that every one of those 45 years were going to be dominated by that job.

I am suggesting how recently it was that the job and family meaning were all tied up together. In 1900, at age 15, a boy went into a job and that was going to be it for the rest of his life. I did some arithmetic in terms of hours comparing 1900 with 1985. That boy at 15 faced the prospect that 33% of the rest of his life was

going to be spent sleeping, 36% would be spent working, leaving 31% for other activities. What the important thing is, was that those other activities had to be done before 7 o'clock in the morning, between noon and 1 o'clock, and after 6 o'clock at night and on Sundays, period. In other words, *there was 31% of your life left with no way to use it*. The jobs which that individual took at the end of his education dominated the rest of his life experience.

Contrasting that with today, leaving at age 20, the individual starts with a premium of an additional five years education. If one starts at the age of 20, the prospect is now fifty years. Of that fifty year period, instead of the 31% that one had in 1900 that was totally useable, one now has 50% of all his time spent sleeping and working; close to 51% of the time after the performance of one's regular job. It breaks down this way. Of all the time one has after leaving college, 33% of it will be spent sleeping, only 14% working at the job, the first job one takes. I have added 2.3% for commuting time of an hour and a half per day. That still leaves one with over 60% of one's time to do something else, all of it in useful pieces.

After spending 51% of one's time sleeping, working, and commuting, one still has time for two more careers. This gets complicated, but the implications are fantastic. The consequences are many. One is the increase in life expectancy, another is earlier retirement. Included is shorter work years, shorter work weeks, and shorter work days.

I think that by 1985 almost all of the work is going to be arranged at the workers convenience. Consistent with the demands of the establishment, work is going to be arranged so that the person can do one or two other things. Number one, people will stop doing career work at the age of fifty to fifty-five.

The implications for education is obvious. First, what are we preparing people for in terms of human resources? Career 1a or 1b or 1c or career 2? We cannot talk of specific jobs and ignore the impact of the change in the work life pattern.

Limiting the topic to concrete developments, as far as long term implications are concerned to the relationship of education through the use of human resources is this change in the life work pattern which has total significance. This total suggests, among other things, inevitable development of a continuing opportunity for educational experience.

Next, I come with a start to a figure which is probably quite familiar to you. There are over 51 million adults in this country today with less than a high school education. How many of them would take advantage of an arrangement where they could come back and pick up a high school education. There are some figures on that, but they aren't very good. We've come to the conclusion

that some place between 8 and 9 million, which would be about 18 or 19 percent, would plan to come back.

All the opportunities for second career development or improved use of retirement show up so manifestly here that they hardly need to be developed.

To summarize, I find the largest significant development in the next eleven years will be the emergence of flexitime, the reduction of the work life, work year and work week.

This summary has left out a number of pretty important things. I simply mention them as obvious. I have skipped over the changing nature of work. The additional information about what the technological society would demand is very incomplete. I have left out totally the emerging evidence about changing attitudes toward work which I expect also affects the relationship with work to education or the other way around. I also have said nothing at all about the effects of technology on this. In all three cases, the excuse is time, but the real reason is that I can't find anything real sensible to tell. There has been nothing except speculation. I am, therefore, suggesting these three things.

First is the necessity for developing further information about an obviously important operative issue. *Second* is the suggestion that it is becoming increasingly apparent that we have to substitute a concept of continuing interchange of education and work for present sequential arrangement. *Third*, I would strongly advise our consideration of ways and means of developing a process for collaborative effort between the administrators of the educational system, the work system, and of the community.

F. CHAMPION WARD

F. Champion Ward served the Ford Foundation as Educational Consultant in India from February 1954 through August 1956, while on leave from the University of Chicago, and again as an educational consultant in India from June 1957 until October 1958. He then returned to New York to become Director of the Foundation's Middle East and African Overseas Development program, a position he held until March 1963, when he was appointed Deputy Vice President for International Programs. In October 1966, he was appointed Vice President for Education and Research. In January 1971, he became Advisor on Education in the International Division.

Mr. Ward was associated with the University of Chicago from 1945-1958. He joined the staff of the College in 1954 as an Assistant Professor of Philosophy, became Associate Professor in 1947, and full Professor in 1950. He was appointed Associate Dean of the College in 1946, and served as Dean from 1947 to 1954. In 1955, he was named William Rainey Harper Professor of Humanities.

Mr. Ward received his B.S. degree in 1932 (History of Art) from Oberlin College and his M.A. degree in 1935 (Philosophy), also from Oberlin. He holds a Ph.D. degree from Yale University (Philosophy), where he was a Sterling Fellow during 1937-38.

Mr. Ward's paper "Dangerously Provincial" states the problems of our schools regarding international education — we are dangerously provincial. Many of the problems facing the young of our nation are problems that affect the human species and the solutions must be made in terms of the peoples of the planet earth. Energy use, food production, resource development and distribution, population control and continuous learning are all problems which will require solutions far beyond the boundaries of one nation let alone one state or school district.

Individual freedom and choice, in the future, may be more related to the people of the world than to any other thing.

DANGEROUSLY PROVINCIAL

Frederick Champion Ward

Advisor on International Education
The Ford Foundation, New York

Grant Venn has assured me that you have all been sent copies of *Learning to Be*, the so-called "Faure Report." But neither of us assumes that you know that it exists, that it was produced for UNESCO as an international study of the worldwide state of education, and perhaps, that I signed it, as one of the seven (rather surprised) "sages" from the ends of the earth who composed the "International Commission on the Development of Education." Since we completed our report two years ago, I have taken part or will take part in discussions of the report in Texas and three other countries (Australia, Canada and Jamaica). I was very glad to accept Dr. Venn's invitation to take part in this national seminar, although I am somewhat intimidated by the formidable display of power and expertise represented by this group. It is always dangerous to try to be a prophet in one's own country, a role I have not even attempted for some years.

First, a word about the Faure Report. It is true that it was an international report on education, but it was not a report on international education. Although we were to inquire into the condition of education everywhere, it remains one of the salient facts about education that it is primarily a national, not an international affair. Everywhere in the world, education is designed, attended, and funded almost entirely by nationals or subnational resources, and unless one is more confident than I am that the present array of nation-states will soon give way to a world state, one must assume that the improvement of international education will continue to be the work of educators like yourselves, working within national and subnational frameworks. A few Typhoid Mary's from foundations and international agencies may carry news from nation to nation, and some visiting to and fro of students, teachers and consultants will and should occur. But for the middle-distance future at any rate, knowledge of other lands and peoples will be acquired by the rising generation everywhere, principally in national schools in their own countries.

The Faure Report acknowledges this fact, but it also says that "at present, national curricula in all parts of the world remain, with rare exception, dangerously provincial."[1] Assuming that our own "national curriculum," taken as the sum of fifty state systems, is not yet one of the "rare exceptions," I would like to

[1]*Learning To Be*, Harrap, London, 1972, p. 240.

discuss both the ends and the possible means of an improved attention to international education in American schools. I would like to suggest how our provincialism as national educators might be reduced.

But why is it "dangerous" to be provincial in education? Many societies, from Sparta to the Soviet Union, have thought it dangerous not to be provincial, fearing that the fine edge of patriotic conviction would be lost in the face of ways of life and systems of values not one's own. One can even find this fear of a rootless cosmopolitanism in some statements of the case *for* studying other societies, as in the following recommendation of the Century Council of Texas A. & M., a body of "one hundred outstanding citizens of the state of Texas" which reported to the Board of Directors of the College twelve years ago. Part of the "five-fold mission" of the School of Arts and Sciences, said the Council, is "to familiarize each A. & M. student with his Texas and American heritage, and with those forces within and without our society which pose threats to his God-given freedoms, and to his fundamental dignity as a human being."[2]

In this preparation for internationl education, the student is to study the world beyond the boundaries of his own nation only in order to know his enemies and thus be alert to their designs on his freedom and dignity. His freedom and dignity "as a human being" derived entirely from his God, his State, and his Country. What is outside the latter can threaten his values but cannot contribute to them or to the heritage of his children. A decade and several wars later, to this essentially defensive view of the purpose of international education, the Faure Report supports the following proposition: "One mission of education is to help men see foreigners not as abstractions but as concrete human beings, with their own reasons, sufferings and joys, and to discern a common humanity among the various nations."[3] Provincialism, then, is to see foreigners as abstractions, as allies or enemies, kooks, slopes, and dinks, pagans or infidels. For our own country, the danger of such provincialism has been vividly illustrated by our recent and prolonged embroilment in the complicated affairs of Southeast Asia. It is, I believe, significant that a survey of American specialized knowledge of other parts of the world, made in the mid-sixties, showed that one of the two areas in Asia of which we were most ignorant was Vietnam. The other was Korea. It is doubtful if intervention would have seemed neces-

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[2]*Excellence*, Report of the Century Council to the Board of Directors, September, 1962, p. 37.
[3]op. cit., p. 153.

sary to our policy-makers if they had been more confident that they knew what would happen or not happen if we did not intervene. And one wonders, if we had known more about the relations among and within the nations of Southeast Asia, between Catholics and Buddhists in South Vietnam, between all Vietnamese and the Chinese, between Thais and Cambodians, etc., if we had known in depth this arena of complicated, interacting forces and attitudes, if we would have accepted as a ruling metaphor the image of identical dominoes toppling each other over on a single flat surface.

At any rate, it is I believe, a national and international necessity to seek forms of education which will enable our young people to see "the various nations" as made up of "concrete human beings" and also to "discern a common humanity" among them. Finding the right balance between the particular and the universal in this undertaking is very difficult. The current burgeoning of ethnic studies within our own country illustrates the problem. The American people seem to be uneasily discontented with Ellis Island and the melting pot. Groups which had suppressed their heritage to achieve respectability in the majority culture are now asserting their separate identities with great insistence. Understandable and valuable as this development may be, if it is taken to its extreme, Americans could come to see themselves as composing a kind of anthropological museum, rather than a single society with a common citizenship. In the terms of the Faure Report, we would see each other as "concrete human beings," rather than as "abstraction," but would we also recognize "our common humanity?"

Looking for an education about the world outside our borders that would be most appropriate for the rising generation of Americans, my own suggestions would be that a portion of the effort be devoted to conveying a sense of the real nature of cultures different from our own and a portion be devoted to "discerning a common humanity among the nations."

In connection with the first objective, I am not informed in detail on what is now being done in American schools, although I am convinced that, as against the effort in other nations, ours is considerably advanced. (But not advanced enough, because an ignorant American is more dangerous to the world than an uninformed Swede). I therefore put forward my suggestions with considerable diffidence.

That being said, however, I would suggest that depth of effect be combined with practicality in the use of limited resources through studying at least one other culture over a long enough period of time to get some sense of its inner logic as an alternative way of facing the human condition. The first "other culture"

encountered by anyone has, I think, more effect upon him or her than any subsequent further variety of experience. However, to insure this full effect, a certain amount of depth needs to be achieved so that the history, language, arts, economic and social organization, and geopolitical situation of the second culture begin to form a concrete whole in the student's mind, giving him or her some sense of what it is to an Indian or Japanese or Nigerian, rather than an American. I mention these "non-Western" examples deliberately, because I believe that what are sometimes called the more "remote" cultures provide a more vivid conceptual and perceptual contrast for the learner.

I call this approach practical because, given limited teaching and other resources, I would think that an investment by a school system in the specialized training needed to present one other culture in some depth would be less than the almost impossible requirements involved in presenting a large array of such options in a single system.

I spoke of the need to grasp another culture as a concrete whole, and this brings me to a dimension of learning I find greatly stressed by both students and younger teachers at the present time, somewhat in contrast to the elder generation. This is the need to supplement academic understanding of another culture with direct experience of at least some of its elements. The latter requirement presents a difficult pedagogical problem but perhaps not an insoluble one if one bears in mind two resources. The first is greater mobility of communications across cultures at the present time, including, for example, Indian music and African art. To these might well be added a much wider use of our school system of students from these other cultures who are in the United States by the thousands at the present time and who might serve as cultural resources in school programs. The other resource is the conception of life-long learning, on which the Faure Report puts special stress. If we assume that the last the student will ever know of the culture to which he was introduced in school is what he was taught about it as a student, then we have an almost hopeless task in trying to make that knowledge sufficiently concrete. But I would hope that the introduction of another culture in the school years would lay the ground for life-long interest, perhaps including a visit to the country or region in question. We now have a generation of young people for whom the world is their oyster, and what the school can do now is not to substitute for their direct contacts with a foreign culture, but to see to it that their later travels do not, as Santayana once put it, "rattle in an empty head."

But how to "discern a common humanity among the various

nations? If all that the school did was to show them how different a second culture is from their own, American students might come to see the world as an irreconcilable zoo. Here I would suggest two other curricular approaches. One is to see to it that major works from different cultures of the world are examined in courses previously confined to works belonging to the Western tradition. Difficult as this may be for many teachers, I think they will find their students receptive and less inclined than their teachers to feel that what is Western is natural and what is non-Western is exotic.

The second device for discerning a common humanity is to stress the problems which face, not individual nations, but the human species. Thanks to a large and growing doomsday literature, we are becoming familiar with these problems and I will do little more than cite them here. Nuclear armaments, overpopulation, energy and food shortages, political dependency, "alienation," environmental pollution — these problems of the species becloud the human prospect and present challenges of a complexity and scale never faced before. Paradoxically, if nation-states are to lead the long life apparently before them, they will succeed in doing so only in so far as they educate their citizens to see beyond national boundaries and national definitions of human needs.

This prospect of a rapidly changing, dangerous and yet in many ways exhilarating future, led the members of the UNESCO Commission to identify as a universal requirement for education everywhere, the preparation of every citizen of every society to keep learning throughout his life, to live with ambiguity and complexity and to see his own salvation as not separable from that of peoples and nations once well beyond the ken and concern of his parents. In connection with the study of problems of the species, our own schools will in many cases get much help and stimulus from the growing prominence of these problems in the media and in national and international discussion, debate and deliberation.

In addition to more international education, I believe that there should be more internationalism *in* education as a professional enterprise. By this I mean that education in any one country stands to gain through an accelerated and expanded circulation of the results of educational experience in other countries. Since the second world war, as you know, there has been a considerable amount of technical assistance to education in the developing countries. For the first twenty years, the exporters prevailed over the importers. But I think that educators in all countries would do well to become selective importers of what appears to be valid and relevant in the technique and conduct of education elsewhere. We all know that our own system of education bears the mark of importation, from Germany at the two ends of the educational ladder, the kindergarten and the graduate school, and from Eng-

land in the case of the liberal arts college. We have made our own adaptations of these models, but at least it was not necessary for us to invent them for the second time.

A watershed in my own thinking about education was a fairly extended period of residence in India as a consultant to the Ministry of Education there. The value of such an experience is the kind that I recommended earlier in urging that all students immerse themselves in a culture different from their own. It is the ability to distinguish the familiar from the inevitable, the form from the substance. You learn that there may be more than one way to achieve a given end in education, more than one way to relate examinations to courses, more than one way to relate teacher training colleges to schools, etc.

This experience of a second educational system becomes very liberating in subsequent reflection on one's own familiar system, whether or not any of those contrasting arrangements and methods are adopted.

But I think that the current scene in education could take us further and enable educators in all nations to benefit from experiences now scattered over a very wide range of countries. In fact, a chapter of the Faure Report was devoted in large part to citing examples of new and promising educational efforts in a large number of countries, from Japan to England and from Poland to Peru. Experiments in "education without walls" are now going on in England; advanced thinking and experimentation in what is called "recurrent education" are being carried on in Sweden; the most sweeping uses of educational television are in El Salvador, the Ivory Coast, and Niger; bilingual education is a common theme in Algeria, Nigeria, and in Canada; experiments in "social service" by university students are going on in Yugoslavia, Iran, and Ethiopia; "Sesame Street" is being adapted for use in many other societies; the encouragement of women to become scientists and doctors is unusually advanced in the U.S.S.R., and so forth. What we prescribe, therefore, as broadening for our students and their classroom teachers would also, I think, be broadening for the leaders and managers of national systems. I have just attended a meeting in Geneva of seven agencies which are supporting an "international educational reporting service," to be run by UNESCO's International Bureau of Education. This service is designed to accelerate and improve communication concerning innovations and improvements in one country which may be of interest outside that country's borders. I hope that hard-pressed national and subnational leaders and managers like yourselves will find this service useful if you share my view that not only the content but, in some degree, the development of education should become international.

ALAN K. CAMPBELL

Alan K. Campbell is Dean of the Maxwell Graduate School at Syracuse University. He is a graduate of Whitman College (A.B.) Wayne University (M.P.A.) and Harvard University (Ph.D.). He has served as: Professor of Political Science and Public Administration at the Maxwell Graduate School; Director, Metropolitan Studies Program, Maxwell Graduate School; Deputy Comptroller, State of New York; member of the faculty at the Salzburg Seminar, Salzburg Austria; and professor and chairman Political Science Department, Hofstra College, Hempstead, New York.

His professional affiliations and activities include the Committee on Economic Development, the National Academy of Public Administration, the American Society of Public Administration, the National Association of Schools of Public Affairs and Administration, the National Municipal League and numerous others.

There are probably no two issues that constantly face the fifty states and the state's Chief School Officer more than does the questions of finance and the changing political support climate for public education. A recent poll of the Chiefs as to issues they face, listed finance and governance as the number one critical issue.*

Dr. Alan K. Campbell in his speech discusses the history and reviews the trends as well as extrapolates regarding the future in his presentation regarding local, state, and federal financing of public education.

*1975 *CSSO INSTITUTE CRITICAL ISSUES*, a report to the United States Commissioner of Education, prepared by Dr. Forbes Bottomly, Georgia State University, Atlanta, Ga., 1976.

THE POLITICS AND ECONOMICS OF THE FUTURE FINANCING OF PUBLIC EDUCATION

Alan K. Campbell
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Introduction and Conclusions

My assignment today, as I understand it, is to make some guesses about the future ability of public education (primarily elementary and secondary) to attract resources. Although the accuracy record of such predictions does not justify much confidence, the exercise undertaken to reach them may provide some useful information. Carefully done, such an analysis may increase understanding of the current situation and the political, economic and social forces which created it. Sensible guesses based on whether those forces will be operative in the future, and, more importantly, how emerging conditions may alter them to produce a "different" future will provide a framework for isolating and discussing the factors which may determine the future.

This task requires reporting first on measures of how well education has done, then a comparison of education's performance to that of other public functions, and finally, an analysis of the values, economic conditions and political alignments which were associated with these outcomes. Using this information, a look into the future will be attempted. Already emerging patterns of behavior will be relied upon to help substantiate the guesses made.

Beginning at the end, this analysis produces the following generalizations about the past and future:

1. By any measure used, education has been remarkably successful since 1950 in increasing its share of the country's resources, a success only partly explained by growing school enrollments.
2. This record is partially explained by the belief of parents in the importance of education to their children's long-run well-being.
3. The substantial increase in total resources for education plus civil rights, racial and poverty concerns caused a shift in the concern of students of education finance away from the adequacy of total education resources to equity in their allocation.
4. Substantial economic growth in the post World War II period made the allocation of increased resources to education and other public functions relatively painless for the middle

and upper income segments of American society.

5. Research in the 1950's stressed the great contribution education made to the economy's productivity and to the relation of total life earnings to the amount of education received.
6. Research during the late 60's and early 70's found little relationship between expenditures for education and student achievement, thereby reducing public support for increased educational expenditures.
7. Declining school enrollments and growing public support for other public functions; services for the elderly, protection of the environment, national health insurance and even mass transit are already weakening education's competitive position.
8. The economic malaise which currently afflicts the country and the long-term possibility of a decline in economic growth will impact education more than most other functions of government.
9. The extent that resources for education will be increased, more than political analysis, suggests that it will result from judicial rather than legislative actions.
10. As among levels of governments, education will possess least political strength at the federal and local levels and most at the state.

The following analysis provides varying degrees of support for these propositions, most for the description of the current situation and least for those which are dependent on predicting the country's economy future.

Education: A Story of Growth

By all financial and fiscal measures, education has done well since World War II. Whether measured as a proportion of gross national product, of personal income or of all public expenditures, education has grown proportionately more than the total economy, more than the total public sector and more than personal income.

Table I

EDUCATION EXPENDITURES AS A PROPORTION OF GROSS NATIONAL PRODUCT: 1950-1973

	All Expenditures for Education	Public Expenditures for Education	Public Expenditures for Elementary & Secondary
1950	3.4%	2.5%	2.0%
1960	5.1%	3.9%	3.1%
1970	7.5%	5.8%	5.2%
1971	7.9%	6.0%	4.3%
1972	8.0%	6.0%	4.7%
1973	(est.)7.8%	6.4%	4.5%

As a proportion of gross national product, total expenditures for education increased from 3.4 percent in 1950 to 7.8 percent in 1973, thus more than doubling its share of the nation's total production. It is interesting to note, however, that the peak was reached in 1972 when it stood at 8 percent. The decline began earlier for public, elementary and secondary education, which reached a peak of 5.2 percent in 1970.

While education was more than doubling its share of gross national product, the total public sector was growing more rapidly than total economic growth, but not as rapidly as education. From 1946 to 1971, government expenditures grew from 21.8 percent to 32.6 percent of GNP, while public education expenditures increased from 2.5 percent to 6.0 percent, a 53 percent increase for the total public sector, but a 140 percent increase for education.

Table II

GOVERNMENT EXPENDITURES AS A PERCENT OF GROSS NATIONAL PRODUCT

	Total	Defense	Non-Defense	Education
1950	21.3%	5.0%	16.3%	2.5%
1960	27.0%	8.9%	18.1%	3.9%
1970	32.2%	7.7%	24.5%	5.8%
1971	32.6%	6.8%	25.8%	6.0%

The same pattern of an increasing share for education can be shown by relating it to per capita income. On the average during the sixties, an increase of 1.0 percent in per capita income was associated with a 1.25 percent increase in per pupil outlays for educations.

For the decade 1962-63 to 1972-73, total expenditures for public schools increased from 15.8 to 43.5 billion dollars. In constant dollars (1972-73), the increase was from 22.2 to 43.5 billion —

nearly doubling. For that same period, average daily attendance increased from 35,882,000 to 42,400,000 — an increase of eighteen percent. Per pupil in average daily attendance costs increased from $439 to $1,026 and in constant dollars, the increase was from $618 to $1,026, a 66 percent increase.

Relative Shares by Level of Government

Since the great bulk of public revenues for education are raised from the state and local parts of the governmental system, it is not surprising that the proportion of total state-local expenditures used for education increased substantially during the past quarter century. The federal government played an insignificant role in financing elementary and secondary education until the mid-sixties with the passage of the Elementary and Secondary Education Act. Even with the passage of this legislation, the federal role reached a peak in 1972-73 when federal expenditures equaled only 7.7 percent of total elementary and secondary education expenditures. The state role climbed to nearly 40 percent by 1950, dropped to approximately 35 in 1960, and then began another climb reaching 41 in 1972. The local proportion was 57.3 percent in 1950 and had declined by 6.0 percent to 51.2 percent in 1972.

Table III

PROPORTION OF REVENUE FOR ELEMENTARY AND SECONDARY EDUCATION BY GOVERNMENT SOURCES

	Local	State	Federal
1950	57.3%	39.8%	2.9%
1960	59.2%	35.6%	4.9%
1965	57.4%	37.8%	4.5%
1970	54.1%	37.9%	7.6%
1972	51.2%	41.0%	7.7%

Overall the significance of these relative shares is their fairly small change. The increase in the federal share, small as it is, undoubtedly aided education in maintaining its growth rate and may have delayed the downturn in education's proportion of the Gross National Product. It does not account, however, for education's proportionate growth in resource use over the past few decades.

Accounting for the Increase

Since neither enrollment increases, nor price level changes, nor shifts in fiscal responsibility from one to another level of government provides sufficient explanation for education's fiscal performance, the explanation must be sought elsewhere. The first step is to determine the purposes for which the increased money was used. A recent Brookings' study tries to do exactly that.[1]

It attributes about one-quarter of the increase to growth in school enrollment and the remainder to increases in expenditures per pupil. Of this increase, two-thirds is accounted for by an increase in the amount spent for teachers and other instructional personnel. These increases permitted a drop in pupils per teacher from 26 to 22 (not necessarily representing a decline in class size) and the number of pupils per "other instructional personnel" from 325 to 160.

About 80 percent of the cost increase per pupil for instructional personnel resulted from salary and benefit improvements. Average annual salaries increased by 90 percent for teachers over the twelve year period 1958-59 to 1970-71, and by 100 percent for other instructional personnel. For this same period the average U.S. worker's earnings increased by 74 percent.

[1]Reisechauer, Robert D., and Robert W. Hartman, with the assistance of Daniel J. Sullivan, *Reforming School Finance*, The Brookings Institute, Washington, D.C., 1973, pp. 17-39.

Table IV

PUBLIC SCHOOL EXPENDITURES PER PUPIL, BY PURPOSE 1970-71 SCHOOL YEAR, AND INCREASE OVER 1957-59 AVERAGE

Purpose	1970-71 Amount Dollars	School Year Percentage of Total	Percentage Increase Over 1957-59	Percentage Contribution To Increase
Administrative and miscellaneous services	63	7	236	8
Salaries & fringe benefits of instructional personnel	554	64	162	64
Other instructional service	38	4	209	5
Plant operation & maintenance	90	10	129	10
Transportation	32	4	157	4
Capital outlays department service	90	10	124	9
ALL PURPOSES	897	100	159	100

Source: *Reforming School Finance* by Robert D. Reischauer and Robert W. Hartman, page 18.

Why this greater than average increase for teachers? Some have suggested that it represents a "catching up" of teachers' pay with salaries in other fields requiring a similar amount of education, others attribute it to increasing unionization and militancy, while still others argue that it is a product of a teacher shortage — a shortage which probably existed until about 1968.

The Brookings' study suggests that unionization and collective bargaining may have boosted teacher compensation nationally by only five percent over what it otherwise would have been.[2] Obviously, the impact was greater in some districts than others. The inadequacy of supply explanation will soon be tested since that inadequacy for most fields is disappearing.

Perhaps more important than all of these measurable causes for the increase was the public's willingness to pay more for education. The parents of the population boom of the fifties and early sixties were children of the depression, tremendously concerned for the economic security of their children. Many, probably most, believed the surest guarantee of that security was a good educa-

[2]Ibid., p. 20

tion. Many had little or no college training themselves and were determined their children would not suffer that disadvantage. A college education required a good elementary and secondary education.

To acquire such an education caused many to move to the suburbs, even though their jobs remained in the city, for it was believed that those new school buildings with their campus-like surroundings were the right setting for the right kind of education. To oppose school budgets or to vote "no" on bond referenda, was seen by many as a vote against one's children — a point of view not discouraged by superintendents, principals, teachers and school boards.

One measure of this attitude is the approval rate for school bond issues. Over 70 percent of such issues were approved in the early and mid-sixties, then a drop off began with the proportion approved dropping to less than half in the early seventies, recovering to just over half in 1972-73.

The increase in the rejection rate of bond issues was followed by the downturn in 1971 of the proportion of gross national product devoted to elementary and secondary education. In part, these reversals of past behavior are related to the first stages of an enrollment decline as the declining birth rates of the late sixties began to be felt by the schools.

Table V

PERCENT OF SCHOOL BOND ISSUES AND VALUE APPROVED
1962-63 to 1972-73

	Percent of Referendum Approval	Percent of Value Approved
1962-63	72.4	69.6
1963-64	72.5	71.1
1964-65	74.7	79.4
1965-66	72.5	74.5
1966-67	66.6	69.2
1967-68	67.6	62.5
1968-69	56.8	43.6
1969-70	53.2	49.5
1970-71	46.7	41.4
1972-73	56.5	56.6

Enrollment Decline Begins

The decline in the birth rate in the United States over the past few years is a much noted and discussed phenomenon. While the "whys" of the decline are debated, the decrease continues and one

of its most immediate effects is obviously fewer school children. How such an enrollment decline will affect education resources is not self-evident. A plausible case could be made that the decline in resources measured in real terms will be less than the enrollment decline. The slowness of public policy responses to changing conditions, built-in overhead costs, bureaucratic intransigence, and the unionization of teachers all support such an interpretation. In contrast, if the decline in enrollment is accompanied by a decline in the political strength of education just the opposite outcome, a decline in resources greater than the enrollment decrease, will result.

Before speculating about those possible political implications, it may be useful to get some feel for the numbers. The decline in the annual increase in population began in 1960, the decline slowed from 1968-1970, but resumed after 1970. The Census Bureau predicts future population on the basis of a variety of assumptions using different average number of child births for a woman upon completion of her childbearing years. Until recently, they used four such series (B, C, D and E) with rates of 3.1, 2.8, 2.5 and 2.1. The last figure, 2.1, is exactly replacive and therefore represents an eventual "zero population growth." Even this figure, however, is higher than the current birth rate and the Census Bureau has established a new series (F) which uses 1.8 births per woman. Even this series produces greater population growth than a straight line projection of the current birth rate. Peak population would be about 270 million if the F series assumption is used, while the peak will be only 226 million contrasted to today's 213 million if the current birth rate continues.

The long-run implications of this slowdown in population growth are but dimly perceived and extend, of course, to many aspects of American life other than education. An increase in the proportion of the population which is dependent, a shift in goods and services produced, a possible slowdown in economic growth, are but a few of the possible outcomes.

Perhaps, however, the education community will be affected first and most visibly. The enrollment decline for elementary education has already begun, will soon shift to the high schools and then to the colleges and universities. The decline may be a bit tempered by a gradual shift to private school pupils into public schools but that impact in national terms will be small, even though it will be substantial in a few school districts.

Examining population decline by age, the five to thirteen age group began its decline in 1972, dropping from 35,852,000 to 35,114,000; and by 1983 (using the Census Bureau Series E projection) will be 31,549,000 — a decline of over four million. For the fourteen to seventeen age group, the decline begins in 1975 after

peaking in 1974 at 16,813,000 and declining (under the series E assumptions) to 13,996,000 in 1983, a decline of nearly 3 million, or 17 percent.

Table VI

POPULATION PROJECTIONS FOR U.S. 1970 to 1983
(Census Bureau Series E and F)

	Ages 5 to 13		Ages 14 to 17
	E	F	E
	(000)	(000)	(000)
1970	36,453		15,978
1975	33,095		16,797
1980	30,804	30,191	15,362
1983	31,549	29,981	13,996

Translating these population figures into enrollment is complicated only by the movement of pupils from private to public schools and by the retention rate of the schools. A continuing movement of private schools and a gradual increase in the retention rate, and on the basis of the Series E projections, total enrollment will decline for elementary and secondary schools from the high in 1971 of 46,081,000 to 40,800,000 in 1982. Using Series F the decline will be 39,700,000, a fourteen percent drop.

Table VII

PROJECTED PUBLIC SCHOOL ENROLLMENT K-12
1970 to 1982 (Census Bureau Series E and F)[3]

	Series E	Series F
	(000)	(000)
1970	45,909	45,909
1975	45,500	44,500
1980	41,400	40,700
1982	40,800	39,700

Projecting Costs

Projecting enrollments is easy compared to guessing their impact on school expenditures, and particularly this is true at a time of great economic uncertainty. Others, however, have tried to

[3]Frankel, Martin M. and J. Fred Bearner, *Projections of Educational Statistics to 1982-83;* 1973 Edition, USOE,1974, pp. 153-158.

make such projections and their guesses are worth examining.

Total public expenditures for elementary and secondary education are predicted to be 64.1 billion dollars (in constant dollars) in 1982-83. This contrasts with expenditures of 51.9 billion in 1972-73 — an increase of 23 percent, while the increase for the previous decade was 78 percent.[4] Since enrollment during this period will increase). It assumes an increase of 23 percent in teacher salaries decline, real expenditures per pupil will increase by a percentage greater than for total growth (1,026 to 1,445 dollars, or a 40 percent from 10,600 to 13,000 dollars (again in constant 1972-73 dollars).

These projections assume that education expenditures as measured by per pupil expenditures will increase in the future about as they have in the past. Is this assumption of continued prosperity for education a fair one?

Projections of future state, local and federal revenues would suggest it is. Using assumptions for education expenditures not drastically different from those of the Department of HEW, the Tax Foundation, taking increases for all public functions into account, 5.5 billion dollars.[5] Federal revenue projections are also optimisitic in full employment terms with the American Enterprise Institute predicting a full employment surplus of 57.3 billion in 1980.[6]

Are there other reasons to assume that education will be in a position over the next decade to continue to grow more rapidly than the country's total economic growth? The enrollment projections would suggest not. The demands, judicial and political, for greater equity in financing education could exert considerable upward pressure on educational expenditures. As state courts require greater equality in such expenditures, a leveling up may be required. To project what this might cost is not easy, but David Ott of the American Enterprise Association[7] has tried. If every state increased its per pupil expenditure to 90 percent of the highest district per pupil costs in the state, the cost to state and local

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[4]Ibid

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[5]Tax Foundation: *The Financial Outlook for State and Local Government to 1980* — Reseach publication (new series) No. 28, New York, New York, 1973.

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[6]Ott, David J., et al., *Public Claims in U.S. Output*, American Enterprise Institute for Public Policy Research, Washington, D.C., 1973, pp. 11-29.

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[7]Ibid., p. 113-152.

governments in 1969-70 would have been seven billion dollars, or about 29 percent of the current education expenditures by state and local governments for that year. This figure would increase to 13.2 billion by 1981 — considerably more than the total state-local budget surplus of 5.5 billion predicted for that year, but if federal surplus projections are realistic, federal aid might fill the gap.[8]

The Role of Economic Growth

All of these projections are based on assumptions drawn from past behavior. Perhaps no aspect of this is more important than the assumption of continued economic growth. Economic growth is particularly important when guesses are being made about the future of public programs.

To extract resources from the economy for any public purpose is likely to be easier when an economy is growing than when it is stagnant. This generalization applies to all public sector activities, but with special force to education, since the average taxpayer plays a larger role in determining local budgets for education than for other public services. In addition, expenditures for education are probably more controllable than expenditures with built-in commitments such as interest on debt, income maintenance, and other entitlement programs.

The American economy at the moment is not growing. Further, it is characterized by high levels of inflation and unemployment. These characteristics of the current economy are much commented upon in both academic and popular journals. Much is made of the fact that modern economics does not contain any very satisfactory explanation for these conditions. Traditional monetary and fiscal tools are difficult to apply because the combined phenonena of unemployment and inflation suggest exactly opposite applications. The current result is a monetary policy designed to fight inflation while fiscal policy, although uncertain in its impact, is generally believed to be having an expansionist influence.

Economists and other students of the economy differ as to whether the current conditions represent a long-term behavioral pattern or a short-term one which will correct itself. The short-term champions put great emphasis on the particular events of the past few years. These include the bad whether of last year which caused a shortage in agricultural production, the Middle East situation which led to both higher oil prices and a supply shortage, a supply shortage of other basic commodities, and a catching up of the demand created by very large scale military expenditures made over the past couple of decades. Jesse Burkhead explains this

[8]Ibid.

situation as ". . . the possibility advanced by critics of the military-industrial complex that the worldwide increases in military expenditures of the last twenty-five years have finally caught up with us. Military outlays do, of course, add to income but not to products that can be consumed by households, nor do they add very much to long-run increases in productivity. Thus the worldwide growth of the military as a proportion of total activity could help to explain inflation . . ."[9]

Whether, in fact, these phenomena are short-run, is debatable. There are those who argue that the shortage of commodities is not short term but rather a product of the world's consumption beginning to exhaust such commodities. Further, there is no evidence that the rate of expenditures for military purposes is about to decline nor that the additional demand for non-military goods and services produced by those expenditures will be offset by appropriate fiscal policy.

Quite apart from these debatable short-term influences are some characteristics of contemporary economies which suggest there are long-term forces at play which will contribute to continuing inflation and, more importantly, to a slowdown in economic growth. The first of these, discussed long before the current problems of the economy, is the structural shift in developed economies from employment in high productivity sectors (such as public employment and services). If economies do continue their much greater growth in provisions of services than in goods production, and if productivity increases are more difficult to accomplish in this sector, the result is inevitably a slower growing economy. Further, if this slower increase in service productivity is accompanied by wage increases comparable to the goods producing sector, the result will be permanent price inflation.

Another long-range concern is the impact of higher levels of economic activity, particularly industrial activity, on the environment. Only in recent years has its deleterious effect been generally recognized. To the extent that these impacts are offset by measures to protect the environment, the inevitable result will be slower growth in the economy — slower, at least, by the measures which have been traditionally used to measure it.

Environmental deterioration has led to even more dire predictions than simply a slow down in economic growth, some arguing that the climate will be sufficiently affected to make human life on earth undesirable if not impossible. Some scholars as a result have

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[9]Burkhead, Jesse, "Economics and Public Policy." *Maxwell News and Notes*, Fall 1974, p. 19. Much of the economic analysis used here is drawn from this article.

been led, perhaps most notably Robert Heilbroner, to argue that democratic decision making must be abandoned.[10]

Another characteristic of the economy leading to higher unemployment, is the relationship of labor supply to labor demand. As an economy becomes more sophisticated, there is a substantial increase in demand for skilled labor with a lessening need for the unskilled. The result is a slackening in demand for unskilled labor combined with an apparent inability of the education system and manpower training programs to provide the necessary skills, thereby driving up wage rates for the skilled but creating a higher level of unemployment for the unskilled. In the terminology of the economist, the Phillips curve,[11] a curve which attempts to show the trade off between inflation and unemployment, has shifted to the right, thereby requiring a much higher level of unemployment if inflation is to be controlled. An unemployment level of four percent, for example, is inevitably inflationary because of the stress this puts on the labor market for skilled labor without simultaneously supplying sufficient opportunities for unskilled labor.

This phenomenon is not unrelated to the explanation by Galbraith for the simultaneous existence of inflation and unemployment. He has argued that it is the coexistence of oligopoly price fixing and trade union behavior which has driven up the price of labor and the price of goods and services without simultaneously increasing employment opportunities.[12]

Whether the current situation will right itself in a few years with upward growth resuming is not known. Nevertheless it would be foolhardy to suggest that there will be any sudden turn around. Further, the long-run significance of a shift to a service economy and the impact of environmental controls on production seem likely to have a continuing and depressing impact on economic growth even if their contribution to inflation and/employment are controlled.

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[10]Heilbroner, Robert L., *An Inquiry Into the Human Prospect*, Norton Press, New York, 1974.

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[11]For a description of the Phillips curve concept see — Phillips, A.W., "The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862-1957," *Economica*, 1958, pp. 252-299.

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[12]Gailbraith, John K., *Economics and the Public Purpose*, Houghton, Mufflin. Boxton, 1973, see pp. 186-197.

Education's Political Strength

Assuming a slowdown in economic growth, the competition for resources among public activities will become keener. In a situation of slow economic growth and substantial increase in resources cannot come entirely from more successfully competing for a larger share of the growth increment, but must come from redistribution of already allocated resources. If some gain, others must lose.

The possibility of such a redistribution depends on the relative political strength of education. Past performance suggests that it has had a comparative advantage. Are there reasons to believe this advantage is being lost?

Among the reasons suggesting that it might be is the changing age composition of the population. As more and more people become senior citizens, the demand for increasing resource for the elderly is bound to become greater. There is, in fact, great concern today about the adequacy of the current social security system to respond to these increased demands. In 1955, seven workers paid social security taxes for each person collecting benefits; today it is three to every one, and within the next couple of decades it will be only two to every one. The maximum monthly benefit in 1955 was $98.50, today it is $304.90, and by the year 2000, at current rates of increase it will be $1,376.50. It seems inevitable that this situation will require either a change in how social security is financed, or a substantial increase in payroll taxes are levied.

This changing age composition of the population will not only reflect itself in the actions of Congress regarding social security, but in many other areas as well. Further, in many school districts, as the aged portion of the population increases, the responsiveness of the local constituency to education needs is likely to become less and less favorable.

There is also evidence that environmental issues possess greater political strength, particularly at the federal level, than does education. There has been a very sharp increase in expenditures for environment in the past few years, and, on the whole, there appears to be a very substantial middle class constituency supportive of increasing these expenditures. Whether shortages of energy will cause some slackening in this support is uncertein, but the evidence to date is that concern for the environment remains strong and politically healthy.

The provision of health services has also recently reached the stage of serious Congressional consideration and it appears likely that a major national health program will be adopted by the current Congress. The resources required for this activity, even if substantial amounts are simply a transfer from the private to the public

sector, will undoubtedly dampen the willingness of Congress to provide funds for other domestic activities.

Mass transit, too, has recently gained in political strength and is likely to remain strong, particularly if energy remains a serious problem; price increases being as important as supply shortages.

These competing functions; aid for the elderly, health services, environmental control and mass transit, are likely to possess their greatest strength at the federal level of government and the interest groups most involved tend to be more oriented to the federal government than to state and local governments.

Comparing 1972 federal obligations for education to 1975, education would have needed an increase in federal obligations of 1,710 million dollars to hold its 1972 level. In fact, education received only 283 million additional dollars, thereby losing in real terms 11.9 percent of its 1972 level. Of dometic programs, only community development and manpower did worse, while income maintenance and transit, to name two, did sustantially better.

School Politics at the Local Level

Of importance to understanding the relative strength of education at the local level, is the political culture in which it is conducted. Every activity of government — police, fire, sanitation, health, etc. operates in its own political environment. But perhaps more than any other function, education has carved out for itself a special place in the American governmental system. An image of uniqueness is perpetuated — unique because public education is said to play a fundamental role in a democratic society, and unique because education deals with children. Widespread public acceptance of these ideas has helped education to become and to remain the only public function possessing its own local governmental system, not combined with other activities and administered by general government as are other public functions. Related to this special status is the companion concept that education should be free of politics.

These "no politics" and independence characteristics do not mean politics are absent, but rather that they are of a special kind. In fact, it may well be argued that "no politics" is a tactic used by school people to obtain greater resources. Yet it is quite possible that as the public becomes increasingly concerned about the level of taxes, and as the age composition of the population changes, education's high visibility will make it more vulnerable to taxpayer resistance than those functions included in the general government system. The more frequent defeats of both school budgets and bond issues tends to support this possibility, but perhaps more important will be a growing caution on the part of school officials in

the size and number of budget and bond issues they place before the electorate.

Just as votes on school budgets and bond issues spell a decline in public support for education so do public opinion polls. The evidence of both the ballot box and the pollster is that greater support for education spending is associated with relative high socio-economic status voters. The decline, therefore, shown by Gallup polls from 1969 to 1972 in the support by the elderly and by parents who do not have children in the school, both segments of the population constituting a larger and larger proportion of the total, and education's growing political weakness becomes comprehensive.[13]

This weakness will affect education's ability to extract resources from all levels of government, but because of its independent governmental systems at the local level and because of a lack of a supporting political structure due to its "no politics" characteristics, it is likely to have its greatest impact on the local level. Weak at the federal level because of competition from other functions and at the local level because of declining public support, the one remaining hope is state government.

State Government and Education

The dominant issue in state education's politics in recent years, primarily but not entirely court inspired, is equity in the distribution of educational resources rather than the adequacy of total resources. The U.S. Supreme Court's determination by a 5 to 4 decision that the federal Constitution is not violated by the district to district disparities in support has made the issue primarily a state one. A number of state courts have determined that state constitutions do not permit such disparities and in others, legislative support for at least lessening the disparities is fairly strong.

Several states have already revised their formulas for state support of education while others have such changes under active consideration. Improved foundation formulas, power equalizing devices and state assumption of the full cost of education are alternatives being considered.

Since reallocating resources is politically more difficult than distributing new monies, it is generally assumed that a more equal expenditure pattern will be accomplished by increasing expendi-

[13]Piele, Philip K. and John Stuart Hall, *Budges, Bonds, and Ballots: Voting Behavior in School Financial Elections*, Lexington Books, Lexington, Mass., 1973 — See appendix for summary of Gallup Polls.

tures in low spending districts rather than by transferring funds from high to low spending districts. Thus far, the addition of new resources has been the route taken, but the weakening political support for this method is illustrated by the current situation in New Jersey. That state is under state court order to lessen the disparities in educational expenditures. The legislature has been unable to agree on the necessary new state taxes to accomplish that, and the governor has requested the court to impose its own solution by redirecting current state aid by court order from wealthier to poorer school districts. If the districts losing aid desire to maintain current expenditure, increased local taxes would be necessary.

The political difficulty states are having in redesigning their aid systems is but further evidence of education's political weakness. That weakness results, in part, from the same forces which affect it at the local and federal levels but probably with less force at the state level.

Competitive demands of other governmental functions are probably not as keen at the state as at the federal level. In part, because the federal level is becoming the chief funder of income maintenance programs and will probably be the chief support of any national health program. Although environmental programs will compete with education for state resources, it is likely that the multi-jurisdictional characteristics of many environmental problems will necessitate federal action.

Education's chief state competitors are likely to be programs associated with urban difficulties. These include housing, transit, social services apart from income maintenance, and support for traditional municipal functions fire, police, and sanitation. Within this group, education will possess a greater competitive strength than it does with the activities more predominantly federal.

The political culture of state education's decision making will play a role in education's ability to attract resources from that level of government. The pattern of local education politics is partially replicated at the state level: separation from general government is supported in most states with some kind of lay board between the governor and the state education legislative committees normally give lip service to the rhetoric of keeping education out of politics.

Although the legal and traditional role of the governor in education varies from state to state, gubernatorial controls over education budgets, appointments and policies are generally weak. A survey of the chairmen of state legislative education committees shows that in their opinion the most influential individual in the state with regard to changes in the state school programs is more

often the chief state school officer than the governor.[14]

The relative independence of state education administrators was recently illustrated by a study of who decides how federal aid is distributed in five states: California, Massachusetts, New York, Texas and Virginia. It was found that decisions were made almost exclusively by state education department officials. No doubt the state political process, both legislative and executive, is more intimately involved in the distribution of state funds, but the federal aid example is an indication of the substantial independence of many state education departments.[15]

Still, despite this relative independence, state education departments are not strong administrative units. Recent infusions of federal aid, particularly that money specifically designated for strengthening such departments, have helped, but most state education departments have a long way to go before they will be equal to most other state departments. The basic constituency of the departments includes organizations of school board members, school administrators, teachers and educationally interested lay groups, primarily parent organizations. When these groups present a common front, they are able to have vast influence on state education policy making and probably can make a substantial contribution to increasing resources for education.

For many years these groups, as well as state legislators, had a rural orientation to which state departments of education responded. A relatively harmonious set of relationships emerged at the state level resulting in some very important innovations in the education system. State aid to rural districts increased steadily, school district consolidations were promoted, and curriculum changes were made. All changes were designed in the belief they would provide better educational services.

Now this confluence of forces is disintegrating in many states; reapportioned state legislatures and top education officials are beginning to concern themselves with urban, as well as, rural education. Teacher groups find it increasingly difficult to make common cause with other educators, particularly school adminis-

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[14]Campbell, Alan K. and Dennis A. Gilbert, "The Governance and Political Implications of Educational Finance" in John Pincus (ed.) *School Finance in Transition*, Ballinger Publishing Company, Cambridge, Mass., 1974, pp. 199-222.

[15]Berke, Joel S. and Michael W. Kirst, *Federal Aid to Education – Who Benefits? Who Governs?* D.C. Heath, Lexington, Mass., 1972.

trators and school board organizations. These changes point toward increased conflict and, therefore, a more overtly political climate for education policy making and administration.

This fragmentation of education interest groups appears to be affecting the behavior of state legislatures. For example, a study in New York found that in the area of education, legislators were far more apt to vote in the interest of their particular district than follow the dictates of statewide education and non-education groups from their own district had far more important influence on them than formal statewide interest groups. The legislators also indicated that the variety of interest groups provided them with many sources of information, eliminating heavy reliance on formal education groups. As legislators broaden their sources of information and rely less on formal organizations of educators, the influence of education professions is bound to decline and the relative powers of the legislature increase.

In summary, states appear to be at a point of transition in their education policy making. The dominance of education interest groups — primarily professional educator groups and lay groups dominated by these professionals — is declining. No single interest or cluster of interest has yet replaced them and the result to date is increased fragmentation.

As the various forces sort themselves out, the single most important development may be the growth in teacher unionization. No longer willing to trust their welfare to other educational professionals, teachers unions are increasingly willing and able to go their own way, weakening the overall position of such education professionals.

Some students of education politics argue that it is the power of unionization which will serve to provide education with the political muscle needed to attract increasing educational resources. Although the evidence is not definitive on this point and economists argue among themselves about the relation between unionization and wage levels, particularly when unions are not in control of entry to their field and teacher's unions are not, the performance of teacher pay over the past two decades indicates inadequacy of supply plays a more significant role in determining pay than unionization. Comparing average annual increases in teachers' pay to pay for all workers and to the earning of other public sector employees shows that teachers did their best from 1955 to 1960 when their annual increase was 132.6 percent of all workers while the comparable percentage of all public workers (including teachers) was 109.3. From 1970 to 1973, teachers' average annual pay increase was only 90.5 percent of the increase for

all workers.[16]

Significantly, teacher pay increases declined relative to that of other public workers at the time teaching unionization was growing. Other factors obviously played a role in this behavior pattern, perhaps even the increasing unionization of other public employees, but it does suggest there is no automatic relationship between pay increases and the degree of unionization.

Nevertheless, the increased unionization of teachers will give them a place at the bargaining table and, more important, a more decisive role in education politics. This increased political role will probably be felt more keenly by state politicians. The fairly even spread of teachers relative to population across a state can give them the determining vote in closely fought races. This potential is enhanced by the decline in the significance of party labels to voting behavior. Although Congressional candidates will also respond to the organized voice of teachers, the greater competition from other groups at the federal level is likely to make teachers' influence less in Washington than in state capitals.

Table VIII

AVERAGE ANNUAL INCREASE IN EARNINGS FOR GOVERNMENT WORKERS AS A PERCENTAGE OF THE INCREASE FOR ALL WORKERS
1955-1973

	1955-60	1960-65	1965-70	1970-73
All government	109.3	107.9	119.0	123.8
Federal civilian	118.6	139.5	115.5	115.9
State & local Govt.	114.0	115.8	117.2	101.6
Public Education	132.6	110.5	117.2	90.5
Non-school	97.7	121.1	117.2	114.3

By level of government therefore, it seems likely that despite its weaknesses, education's greatest opportunity exists at the state level. Nonetheless, even at this level, the struggle for resources with other functions of government is likely to be intense.

Less for Education

The generalizations drawn from the analysis have been stated. Sufficient here to add that despite an inevitable time lag in adjusting resources to declining enrollments, the resource adjustment is

[16]Advisory Commission on Intergovernmental Relations, "Trends in Fiscal Federalism" (a staff complication — Mimeo), October 29, 1974.

likely to exceed the drop in enrollment. The short term response of school districts to this decline indicates, according to the New York State Department of Education an inability:

> . . . to adjust their expenditures proportionately to the decline in pupils and, therefore, on a per pupil basis their expenditures per pupil increased more drastically than do those in districts with increasing enrollment. Part of the reason for this, of course, is that basic costs such as operation and maintenance of the plant do not change materially with changes in pupil enrollment. More important, it is difficult to reduce the professional staff because normally the decrease in pupils would be spread across the complete grade spectrum of the school district, thus eliminating the possibility of removing a teacher when a reduction of 25 pupils in enrollment occurs.[17]

It is argued here that this kind of response will be very short term and that the past increases in education resources will become a thing of the past and education's share of the nation's total resources will decline more than enrollment declines. Only by convincing the public that education can and is making a substantial contribution to the solution of the nation's problems will educators be able to alter that outcome. Today, a large part of the public agrees instead with a conclusion drawn from a survey of the educational research of the past decade that, "there seems to be opportunities for significant redirections and in some cases reductions in education expenditures without deterioration in educational outcomes."[18]

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[17]New York State Education Department, "1974-75 Cooperative Studies in Education Finance: Study No. 3: Declining Enrollments" (Mimeo) November, 1974.

[18]Averch, Harvey A., et al, *How Effective is Schooling?* Done for the President's Commission on School Finance by the Rand Institute, Santa Monica, California, 1972. p. XIII.

FORBES BOTTOMLY

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He is active in numerous organizations including AASA, Thrust Magazine, Phi Delta Kappa, Phi Kappa Phi, the National Conference of Christians and Jews and is a Member of the Board of Trustees and Executive Board of the Pacific Science Center. He has written numerous articles on urban planning, citizen involvement and educational change.

Dr. Bottomly in his speech to the CSSO Institute *The Shape of Democracy: The Citizen Role*, indicated that the problems of today can only be solved by democratic action. He indicated a high optimism for the future, but reminded the Chiefs that answers more often than not fall into the realm of human values and political choices rather than the continued application of technology.

The future is now — what we decide today will determine the quality of life in the year 2000. The hard choices that must be made must come from citizen understanding of the consequences of action taken by society.

THE SHAPE OF DEMOCRACY — THE CITIZEN ROLE

Forbes Bottomly
Director, Greater Boston Educational Planning Project

In the last century, Alexis de Tocqueville predicted that democracy and democratic governments were inevitable and would spread throughout the world. The inspiration for his optimism sprang from his enthusiasm for the ingenuity and enterprise of the American people as they attacked the apparently limitless resources of the continent. One can only conjecture as to what Tocqueville's prophesy would be had he been on the scene a hundred and forty years later, observing the problems of democracy and listening to the widespread expressions of despair at the institution. Of course, in his day there was hardly a glimmer of the spectacular and unprecendented developments which loomed in the century ahead or of the degree to which those developments would shake to the bedrock not only democracy but every other institution as well.

I suspect that he would still be hopeful. A tempered hopefulness, perhaps. But would he not find the problems today altogether as exciting as the problems of the frontier: are the risks not greater, in fact more decisive in the element of man's survival?

I would wager that he would say that the way things are today could be handled only by strengthening of democratic action.

Today, there are more and brighter lanterns for lighting the way. The study of the future has become a respectable science, with business and government analyzing optional futures worked out by teams of futurists. Computers hum as increasingly large amounts of data are compiled and new techniques for peering into the glass darkly are perfected. As a science, futurism is rather new There have always been the Nostradamus types, and more recently the projectors of population and devisers of actuarial tables. Then, during the fifties, everybody who was somebody began looking into the future.

Walter D. Cocking was one of those. The Office of Education asked him to make some comments about education in the year 2000. He hired me to develop a bibliography and write a summary. I scanned about 500 pieces of literature, read thoroughly 50 and finally gave him my report in 1961. I found that by the time you study and write about the future, it has come and gone leaving your conclusions as devastated history. But shooting at the year 2000 at my age is safe enough!

In those days of the late fifties and early sixties, the vast majority of the authors were optimistic. They foresaw technological and scientific solutions for every problem. They spoke in heady terms of a utopia with leisure, recreation, health and freedom for all Americans. There were, of course, a few gloomy ones. The environmentalists — the Osborns, the Carsons, the de Castros, the Conants, and the Harrison Browns were warning of impending disasters if we didn't mend our ways.

We didn't, of course. So now the new futurists use expressions of hope with restraint, if at all, often are morose, don't mind laying on us admonishments which are dead serious and as sternly put as those of the biblical prophets. Along with their qualified analyses and optional judgments about future trends, they nearly always admit that they do not have the answers. *Answers more often than not fall into the realm of human values and political choices rather than from merely more application of technology.* Many of the problems such as social tensions, nuclear arms race, unemployment and numerous urban conditions have no technological solutions. Solutions will require, they say, major changes in the social economic and political structures of our society. And when asked from whence the impetus for the changes will come — they reply, from education, of course. Where else? Good old education.

WHO GETS WHAT'S LEFT?

A democracy rocked with election frauds, foul air, impure water, archaic prison systems, racial tensions, education crises, rampant inflation, choked-up courts, widespread distrust of leadership, and a dozen other symptoms of basic disability is still alive and, if a bit groggy at times, stays in the ring swinging. Its most crucial rounds are just ahead.

Will citizens of a democracy be able to decide on how to allocate fuel when there isn't enough to go around? Who will get the gasoline? What will it be used for? Who will make the decisions? There is yet to be formulated an intelligible national policy on energy or on food.

Last fall, I attended one of the many energy conferences held by Massachusetts Commissioner of Education, Greg Anrig. The crisis was particularly acute in New England. There was a clamor to close the schools in order to conserve fuel, a view which might have prevailed had not the commissioner moved strongly to gather public opinion to give schools a high priority. All of us, perhaps, recall the anger, the heated emotions, the actual fights pitting citizen against citizen at the gasoline lineups. I saw fenders dented by line crashers. I watched a fist fight which reminded me of a "Western" with antagonists flailing not under the horses hooves,

but entangled in the gas pump hose. And I felt among my fellow citizens a smoldering resentment against the oil companies, the government and the drivers of huge gas-swilling cars.

Who will get the gas next year. The year after. Whose homes and offices will be heated in the winter and air-conditioned in the summer. Who will get the food as prices go up, up, up. Will citizens have anything to say except "Give me my share." Or will the decisions be made by office holders who are in office by the grace of contributions made by the oil and food industries. How can a citizen understand and respond intelligently to these and other rhetorical questions of survival?

A couple of weeks ago, I sat on the stoop of the ancient brownstone apartment building where I live in Boston. Much to the consternation of my neighbors, several young persons and I argued these questions until three o'clock in the morning. One young woman said, "Wow! It just hit me. The *future* is *now*. This very minute. What we do now. Today. This will decide the quality of life in the year 2000!" This triggered a young man with a squeaky voice, which drew a curse from a window high above, to respond, "Hey man, that's neat. And *the whole world* is here! What *we* do here in *Boston*, or what *someone* does in . . . in *Afghanistan* or . . . *Oklahoma* affects the quality of life *everywhere*."

Those youngsters had intellectually grasped the time-space relationships which are basic ingredients of sound public policy making. In their top-of-the-head, tentative way they had focused on factors which futurists find so simple yet so very complex. It is a relationship which the immediate, short-term stuff of politics has thus far negelected to the point of precipitating one crisis after another and until the need for global, long-term planning and policy formulation has become urgent, perhaps vital. And it is a relationship which we citizens are coming to understand as we seek signficant information in answer to those questions.

WILL DEMOCRACY SURVIVE?

Perhaps a more appropriate question is: *can* democracy survive? A democracy requires disagreement and debate among citizens regarding public policy with ultimate agreement coming on fundamental values and methods to be used to carry out the policies. It requires that citizens be informed in such a manner that they can make choices between clearly differentiated values; choices among optional methods and then to have some reasonable understanding of the consequences of making their choices.

A value choice between one's own life or death would not be difficult to make, for most of us. But the retiring president of

General Foods recently stated that we would be making choices regarding the starving of tens of millions of people in the world. With the present inflation here in America, we are already making decisions between malnutrition for the children of the poor or more services for the rich. But do we know the consequences of such a choice? One consequence may be that the Chief State School Officers will see large number of mentally retarded children coming out of the poorer sections of the state requiring increased special education services and remedial help. Because we know that there is a relationship between the incidence of mental retardation and malnutrition.

But we are often floundering in a sea of information. There is too much that is irrelevant. Too much that is distractive, distorted, discriminatory, top-of-the-head, out of context or mutilated beyond redemptive qualities. It is bewildering to many citizens, confusing and often aimed at waking people up rather than bringing rational thought. As a reasonably well-read citizen, I find it an overwhelming job to try to sort into major contexts, the mountains of information printed at me and talked at me each day.

The regular channels of public information, the newspaper, television and radio pervade our lives. They are presently the major source of information about the affairs of the world, the nation and community. Because they are protected by freedom of the press, they have a weighty responsibility to provide a citizenry with unbiased information. Citizens have a right to criticize when the media are too event orientated and neglect to place events into the major issues of which they are a part. They should criticize when the media uses headlines to mislead or let reporters rearrange stories in order to be more appealing, if less factual, or when important stories are buried or not printed. Major issues of life or death importance may never get to a citizen because of the perversity of the media. If the media spent as much time or space to giving people straight news placed in context as they do telling us what advertisers want us to know, than trying to convince the politicians that's what the people want, we would have a more fair information base.

In his hard-hitting book, *Don't Blame the People*, teacher Robert Cirino documents how major newspapers and the networks of the country neglected for years to report in depth the cigarette cancer and heart hazards, the auto safety problems, the hunger incidences, the growing pollution dangers. A citizen may ask: does freedom of the press give the right to downplay, hide or simply ignore information which affects our health, even our lives? We might wonder how many tens of thousands of lives might have been saved from lung cancer and disease if the media had hammered home the important reports since 1938 proving relationships

between smoking and those diseases, instead of running beautiful ads for the tobacco industry.

There can be little sensible debate over ideas or thoughtful choice between alternatives unless citizens have information which is usable, timely, and relevant, and unless the press and the networks address themselves to the work of providing the information required. It has been my experience that my fellow citizens want good information, want the truth, the facts, the content and when they have these, they tend to do what's right for themselves and for their children. It has not been my experience that my fellow citizens must have tricky headlines, lurid or jazzed up stories, emotionally impacted scenes for a steady diet. If democracy is to survive, the media will have to find ways of reporting in depth the information regarding the major issues confronting us today. Otherwise concerned citizens may be forced to find redundant means of finding the information they need. This may be through peoples papers, underground press or radio, truth channels, media cooperatives, and by heavier reliance upon public broadcasting.

It is when voters are unable to unravel the real issues, or think the issues are not important, or cannot see where there is a choice, or if there is a choice that their vote will make no difference that they become apathetic or feel alienated. Some of these will cop out: say "What's the use. I'll get mine while I can and let the next generation take care of itself." Others turn away from the world's problems seeking peace and solace in religion, a few search for some guru's knowledge and find the light by putting the fingers under the eyeballs, find the nectar by rolling the tongue back into the throat, and get hyperventilated each morning by chanting SO HUNG.

But there are individuals and groups at work to preserve and strengthen democracy and will undoubtedly have a major impact upon the shape of democracy in the future. The League of Women Voters for years has been getting information to people. Common Cause, under John Gardner's leadership has become an aggressive third force in American life with the purpose of upholding the public interest against the special interests. With some success it has organized citizens, assisted them to speak out in behalf of legislation which is designed to solve problems and confront issues. The Common Cause effort is aimed at making democracy work by cleaning from its machinery the clogs which have accumulated to slow it down, such as congressional seniority and the archaic election laws. Ralph Nader's group moving on a number of fronts has brought to our attention issues of health, safety, life and death. Citizen registration groups have made major gains in voter registration of the poor and excluded. O.E.O. citizen participation programs have heightened the sophistication of groups of many

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kinds. There are hundreds of groups at work to organize and involve citizens in the significant work of a democracy.

The futurists too are becoming increasingly important in providing information for citizen consideration. Because of the complexity of some of the trends under study, they have developed models which are both simple and profound. They can be understood by the average citizen, even though the data bases and the interrelationship of the support information are exceedingly complex. While such models are not perfect, are oversimplified and tentative, they may provide rather clear-cut value choices on the part of us who must make choices if democracy is to prevail. Nearly everyone uses models of one kind or another in solving problems which fall on the time-space frame. My young friends on the brownstone stage suddenly realized this and with shouts of delight, as if they had discovered gold, they immediately began to formulate models for the salvation of mankind.

One of the most powerful futuristic efforts in model development and one which has profound implications for value judgments about the future, is that undertaken by the Club of Rome Team headed by Dr. D. Meadows of M.I.T. and published in *The Limits of Growth*. While emphasizing the models are not predictions, that there are gaps in the data gathered and that much work remains to be done, the investigators have nevertheless analyzed the present world system by computer. This system, within which modern democracies have evolved into the one we have followed for several hundred years. It is based upon a psychology of pushing back the limits to growth, rather than trying to live within them. It is perhaps this psychology which led de Tocqueville to make such auspicious observations about democracy.

Since the apparent limits in the past have responded to scientific and technological and organizational pressures, there has been little urgency for changing the system. Now, however, we are near the end of irreplaceable resources and are beginning to face up to the harsh realities of a finite world. The Meadow's team finds that within this finite world, population, industrial capital and pollution are growing at an exponential rate. These are interrelated with resource usage in that "population cannot grow without food. food production is increased by growth of capital, more capital requires more resources, discarded resources become pollution, pollution interferes with the growth of both population and food." In making a computer run to determine the possible consequences of continuing the system as it is the team found that the behavior mode of the system is clearly that of overshooting the limits, then collapsing into a dismal existence within one hundred years.

In this run, the collapse occurs because of nonrenewable

resources depletion. The industrial capital stock grows to a level that requires an enormous input of resources. In the very process of that growth, it depletes a large fraction of the reserves available. As resource prices rise and mines are depleted, more and more capital must be used for obtaining resources, leaving less to be invested for future growth. Finally, investments cannot keep up with depreciation, and the industrial base collapses, taking with it the service and agricultural systems, which have become dependent on industrial inputs (such as fertilizers, pesticides, hospital laboratories, computers and especially energy for mechanization). For a short time, the situation is especially serious because population, with delays inherent in the age structure and the process of social adjustment, keep rising. Population finally decreases when the death rate is driven up by lack of food and health services.

The team concludes, however, after making a number of computer runs that "it is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential." *But if the choice is to be for stability, the sooner we get to work to attain it, the greater will be the chances for success. By taking no action or by putting off action, we have taken the equivalent of strong action. Letting things ride is a value choice in itself because the exponential rate of growth removes options and reduces the trade-offs which we presently have.* The systems model provides us with a simplified tool to access possible value trade-offs. The most basic of these is perhaps, should we trade part of today for an extended tomorrow — that is, should we reduce our growth now in order that our children and theirs may be sustained at a reasonable living standard for an indefinite future?

The answer to the question — can democracy survive — is yes. The conditions are that its citizens have relevant information about the crucial problems and that this information be faithfully reduced to usable models. Then citizens may make value judgments about the future. There is considerable evidence that increasing numbers of citizens are demanding better information, organizing to make the democratic machinery work and confronting some of the toughest problems facing the nation, the world and the future.

WHAT WILL BE THE CITIZEN ROLE?

There is an old aphorism that says people do not change unless

they have to. I've seen segregationists become integrationists when conditions threw them together with persons of another race. You have all seen school board candidates change their views when confronted with the realities of board decision making. We citizens too will change when our self interest requires it. And our self interest will require it very soon.

By and large our American democracy has been dominated by an elite. It is after all a republic, as the Birchers are fond of reminding us, and the founding fathers labored long over establishing a balance between the power of the people and the power of the elite. Over the years the elite has worked to establish itself not only in government but as an economic elite as well. The role of the elite has been challenged often, but seldom with success, the Jacksonian period being one. The McGovern campaign was a futile assault by a plebian army against the bastion of the establishment.

Elitism comes from our Judeo-Christian respect for authority. To its defenders elitism is derived from natural superiority as proven in the arena of political and economic competition. To a large degree the past elite has been educated either highly or in elite institutions. And we find among the educated elite a greater regard for the clash of ideas and the freedom of expression on issues than is found in the population as a whole.

A good deal of our literature, our advertising, our news media is devoted to enhancing the image of the elite. We have been conditioned to hold it in respect and awe, and were asked to trust the elite because after all its members were more enlightened, had more information, understood complicated budgets, knew the mysteries of national security, and secrets of international intrigue and, besides, had enough implied power to intimidate us. Anyway, we had always folkliked our paternalistic leaders whether they were tight-fisted conservatives or condescending liberals, and comforted ourselves by pretending that they were persons of some integrity as well as ability. Elitism worked well during the period of unlimited growth. Members of the elite were basically humanitarian.

The historic trust of the elite is now badly shaken. We have been lied to, spied on, manipulated, had our election processes assaulted, watched a seniority-tethered congress unable to move on issues of vital national interest, and have witnessed the arrogance of the major American oil companies who placed loyalty to their international combines above that of their nation or fellow citizens. We find it difficult to rally around the president or for that matter any other elite figure. We have found that their wisdom has not been far-reaching and we can no longer depend upon them to make decisions for us. Unfortunately the disenchantment extends to nearly all public officials and to members of the so-called estab-

lishment even though they are persons of integrity. In my limited level I was a target of this mistrust recently. Mrs. Berg, an unusually strong community leader in Roxbury, Massachusetts, was negotiating a federal subcontract with my agency, the Metropolitan Planning Project. I said to her, "It's o.k. with us now, I'll send it to the project officer in Washington, D.C. for his approval."

"You send me to Washington with it," she insisted.

"Don't you trust me?" I asked.

"I trust no one except myself," she stated firmly, "I've been given the run around too many times." So she went to Washington where she personally walked the subcontract through the project officer, then boldly pounded upon the door of the contracts officer until he opened it and processed the contract, a procedure which ordinarily would have taken a month.

We are moving into a period of the decline of the elite, a period in which Tom Wicker has said people don't depend on leaders so much — they look instead to strong, authentic movements which have respect for the earth and the people.

We can expect to see a growing insistence by individual citizens that officials be open to them. We can also expect an increased number of social and political movements bringing change through pressures, confrontations and public conflict.

Does this mean that the swing away from the elite will place a greater reliance on majority rule? Perhaps, but the majority can be as oppressive as the elite. We have seen how open housing and other inclusionary efforts have been defeated at the polls. We have witnessed the exclusion of minorities from representation by majorities who have established at-large election procedures. One of the worst examples of this is the way the white Irish majority of Boston have excluded black or hispanic representation. What the majority doesn't seem to realize is that it is defeating its own long-range best interests. What the Boston Irish, Poles, Italian and other national and ethnic groups have in common with the blacks and Peurto Ricans is much more basically important than their differences. When they finally realize this and develop a political coalition to assert their common interests they will be a force to be reckoned with in Massachusetts.

It is probable that the democracy of the future will be built upon coalitions. Those of us that have had to pass tax overrides have engaged in this kind of politicking. Common Cause is formed for such an effort. And it seems to lend itself to the growing pluralistic consciousness of our society.

One can expect the gains made by minorities, women and students during the last ten years to continue and perhaps expand to other groups. There is a final recognition that the melting pot was just a romantic thought in American history and that the new

racial, ethnic and sexual self awareness has more realistic basis for defining citizen roles. Built upon the notion that ethnic pride will lead to greater self confidence, pluralism seeks to define and portray the variety of cultures the nation embraces. It is also predicated on the assumption that integration is relevant only as it leads to shared power and open opportunities. The major effort of a pluralistic approach according to State Representative Mel King of Massachusetts is to provide a separatist base for the development of strength, then to use that strength to confront on political and economic fields. The aim of the confrontations are to gain inclusion of minorities and to provide for needed changes in the system.

These actions are, of course, threatening to other groups, especially those that are average or below in socioeconomic status. This threat has already caused the organizing of Irish Power, Polish Power, Ukrainian Power, etc. for the definition and protection of their interests. Soon the leaders of these groups will come to realize that they are not enemies, but victims of the old game of divide and conquer. At that realization one can expect the formation of a new political power in America.

This power will rise out of economic considerations. As inflation eats away at the gains of the blue collar worker along with those of the minority groups, and as the young suburbanites find their mortgage in jeopardy and the youths who a few years ago were radicals and now face unemployment, as the old people see their lives savings gobbled up and retirement benefits disappearing, the seeds for a new political bloc are sown.

This potential may even go further. As one seeks a constituency for survival he would see the possibility of other groups joining those above. The League of Voters, Common Cause, the National Organization of Women, various minority groups, the O.E.O. groups, the Black Panther Party, Farm Workers Union, the various consumer, environmental and safety organizations would all find some common interest to be explored through coalitions and perhaps a fresh new thrust will appear in American politics. Political platforms would be developed on long-term models related to economic inequities, food, population and pollution. Short-term strategies would be formed for dealing with immediate issues of how to make democracy work.

The role of the citizen is prescribed by the requirements of survival. People change when they must. We will get involved ourselves, because the results are too important to be left to the elite. Also we shall forget our old antagonisms with our fellow citizens and join forces with them.

WHAT IMPLICATIONS FOR EDUCATION?

Curriculum

If one accepts that the major purpose of education is now survival, it may have the following impact on curriculum development.

1. All curricular studies and teaching strategies will be aimed at preparing learners to live with less, to be more spartan in the use of food and materials, to be more efficient in the use of energy.
2. All curricular studies will emphasize the need to reduce pollution, to recycle, to preserve and care for machinery and equipment.
3. All curricular studies will emphasize the basics of good health, good nutrition and environmental protection.
4. Curricular programs will be developed to help learners grasp the essence of model development and the use of models in making value choices and trade-offs regarding their own lives and the future of the system.
5. A greater emphasis will be placed on occupational education, especially as it relates to services, shifting away from vocations relating to production of goods.
6. Accountability and assessment practices will be based upon what citizens need, rather than being a part of the control system of the elite.

Administration

If one believes that one of the major services of administration is to provide leadership and guidance, the following may be worth considering:

1. Budgets will be proposed and defended which place priorities on programs of conservation, anti-pollution, population control, and spartanism.
2. School lands will be protected for agricultural purposes.
3. Rigorous guidelines for efficiency will be issued and enforced.
4. School planning will become part of comprehensive planning at all levels and system models will be used to weight value choices and trade-offs.
5. Spending on programs which do not aid in the struggle for survival will take lower precedent than those which do. Additional diversion of funds in higher education will be made in the search for answers to problems of population, food and pollution.
6. Provision will be made to convert schools which are no longer used or schools which are under used to community centers which will have as a function providing food for the very young and the elderly and be set up for soup lines

should inflation and unemployment drive the poor to seek help. Another need, should food inflation continue, is for school programs to be geared up to accept larger numbers of mentally retarded children.

7. There will be an increased insistence upon quality in work and durability in the products.

Community Relations

If one has hope that democracy will survive, education will need to assume a healthy relationship with the community.

1. School leaders will support the growth of pluralism by assisting minority and ethnic groups to organize, to gain sophistication in political activity, even if that activity is turned against the leaders. School leaders will also support the development of cultural identity and cross-cultural educational programs.
2. School leaders will promote affirmative action programs within the systems, but will also assure that on all committees and boards and task forces there is equity of representation of minority groups and women.
3. School leaders will join with and support the work of voter registration, Common Cause, consumer protection, environmental protection, population control, and improvement of citizen information.
4. School leaders will use their newsletters and reports to convey the truth, no matter how harsh, to the people rather than giving them the glossy pictures of everything-is-fine snow job.

SUMMARY

I share some of de Tocqueville's confidence in democracy. Citizens will respond because they have to. They have to because the realization is coming home that survival is at stake, not just the preservation of the good life of gadgets. Citizen groups are organizing to bring about reforms and make the machinery work. They have gained sophistication in politics and government and have acquired a healthy distrust of officialdom.

Nevertheless the world system, the national system and the local system have come to a point of crises. We are now forced to see ourselves in a time-space interrelationship which reveals the consequences of what we do *now* and *here* future and in the world. The future is now; the whole world re.

The requirements of exponential population gr .h are causing capital investment in technology to grow at exponential rates to extract food and resources from the earth. The end of irreplaceable resources and of land for food production is in sight. The application of technology has produced pollution at an exponential rate.

Futurists have calculated the limits to growth by applying systems models. They have calculated that there is a limit to the resources that the earth can give and there is a limit to the amount of pollution it can absorb. Their calculations point to a collapse of the system with tragic consequences within a hundred years if things are allowed to continue unabated. Their calculations, however, indicate alternatives which would bring balance, stability and enough for all to live at a reasonable standard. But they warn that time is running out and options are disappearing.

The symptoms are evident today and will continue to accelerate. The race for food to keep up with population increases has already brought a food shortage with prices going up at an alarming rate. This rise has caused starvation for some and for others a lower nutrition level, even forcing the poor and elderly to eating dog food.

This inflation and the knowledge of its consequences will galvanize citizens into actions. Coalitions of old enemies will form along commong interest goals of survival, and new political action will emerge to strengthen democracy. These new coalitions will wrest political control from the elite and with some elements of the elite joining the new action, needed changes in the system will begin to be made.

These new forces will require a communications system which will provide every citizen with models of future consequences of optional strategies. Citizens will use these models in developing political platforms and engaging in public debate about value trade-offs. The goal will be the possibility that our grandchildren will not only celebrate the nation's tricentennial as a democracy to vindicate de Tocqueville's confidence, but to do so at a reasonably high standard of living.

HAROLD G. SHANE

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He is Chairman of the Publications Committee, the Association for Supervision and Curriculum Development (NEA), member of the Standards Commission of the AACTE, the governing board of the National Association for Nursery Educators, the John Dewey Society, the National Society for the Study of Education and the Board of Directors and Executive committee of the ASCD.

In 1974, he received the Education Press Award as an outstanding contributor to educational journalism. His publications since 1970 include, *Guiding Human Development: The Counselor and Teacher in Elementary School;* "Future Planning as a Means of Shaping Educational Change," found in Robert McClure's text Curriculum: *Past, Present and in Perspective*. His writings are found with Robert H. Anderson's *As the Twig is Bent: Readings in Early Childhood Education*, and with James Walden and Ronald Green in *Interpreting Language Arts Research for Use in the Classroom*. He has also written articles in *Phi Delta Kappan's* March 1970 issue on "A Curriculum Continuum: Possible Trends in the 1970's."

Dr. Shane's presentation on "The Public and Private Life of the Individuall" lays out with great clarity many of the choices that each of us must make in the future but the essence is found in the fact that these decisions cannot be made uni-laterally — how one lives in private and the public role one may have in the future are more dependent on the decisions of the society than on the individual choices. Shane lists four areas that must be considered: sociofutures — population may not expand forever, technofutures — controlled growth and the wise use of technology, biofutures — the coming food crisis, human or psychefutures — personal "security" more dependent on group decisions and values.

What must we teach our children and youth today, so they may make the right decisions about the futures?

Dr. Shane clearly states the problem which is the first step to sound decisions.

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THE PUBLIC AND PRIVATE LIFE OF THE INDIVIDUAL

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Introduction

Many years ago the late Will Rogers said, "The schools ain't what they used to be and they probably never wuz!" As we look at the future life of the individual U.S. Citizen, we might very well paraphrase Will and say, "The *future* isn't what it used to be and it probably never was!"

In our own country at least, the 20th century began with a tidal wave of optimism with regard to humanity's prospects. The average citizen, while aware of the abundant social problems of the era, saw the individual human standing on the verge of a new and better way of life. It was felt that the findings of scientists such as Pasteur and the Curies in the 1900's would illumine the world with knowledge, and that technology would make it work better. Furthermore, in this quaintly well-intentioned Western world, it was firmly believed that increased investments in education would rapidly create a level of knowledge that would warm the planet with reason and good will.

Despite the first bloody World War and dozens of deadly smaller ones, faith in Victorian England's concepts of progress lingered on into the 1920's. This was replaced after the mid-1930's by the idea that "good" controlled social change pointed the way to freedom from fear, want, and injustice. Americans felt that reasoned social progress based on technology pointed the way to salvation-through-abundance for all. And for a time it seemed likely that the images of material progress and well-being would become a reality for all.

In the U.S. at least, by the late 1950's our wildest 1936 dreams of material gain were on the way to being realized. There were enough automobiles at that time, for instance, to move the entire population of the U.S. and its territories at the same moment with no more than four persons per vehicle. Speedboats and air conditioners were becoming commonplace and, except for persons in the culture of poverty, the country ate well and dressed comfortably at prices most could afford.

During the 1950's and on into the early 1960's there was great confidence in the future and in our prospects for abundance. Linear projections suggested that in a decade or two the 20-hour week and eight-month working year would become feasible for blue-collar North America. The four year B.A. degree was on the

way to becoming universalized and the "average" two-car garage, we assumed, would soon be crowded by an added snowmobile or speedboat plus a couple of mini-motorbikes for the children.

In the mythical world of the future, the private life of the individual was one of assured technological comfort in handsome suburbs or beautiful new high-rise buildings. His public life was seen as equally convenient: guaranteed rights to security, careful input from the media to inform him of the "public world" in which he worked, played and occasionally worshipped, and so on.

Unfortunately, we have learned since 1970 that the "true" world of tomorrow cannot be forecast with any reliability. We can explore its potentialities and probe its possible problems with our minds and with computers — but we can neither accurately nor safely foretell the future. *In retrospect, we have been quite blind to the simple point that the future is what we make it by what we do now.* There is no single, preordained future but only a broad, fan-shaped array of alternative futures. From among these potential tomorrows, however, we can endeavor to select and to create the best of the options open to us.

The last decade has been an interval in which Murphy's Law — "That which *can* go wrong *will* go wrong" — has been operating. It has been an interval of the most frustrating kind because it has taken so many dreams from us — and has done so just when our aspirations seem about within our grasp. Mere possession of what Stuart Chase once called "stuff" has alas, brought little if any inner peace or fulfillment. In fact, our possessions seem to own us more than we own them! As change occurred, it appeared that the "better" things got the worse they became. Power brought the U.S. no moral leadership role in the international community but only the heartbreak of the warfare in Southeast Asia. "Permissiveness" led to very little if any true freedom for either the old or the young.

To sum up: instead of leaving enduring, desirable footprints in the sands of time, we seemingly have left a social and technological wasteland in our footsteps — at least insofar as the "developed" areas of the planet are concerned.

As we think about the private and public life of the individual in the future, how do we approach our deliberations? How do we face and overcome the gloomy "human prospect" envisioned by scholars such as Robert Heilbronerand the resource depletion anticipated by the computerized analysis of Jay W. Forrester? It seems logical to consider four clusters of ideas:

1. With what premises shall we confront tomorrow?
2. What general understandings do we need to have so that we can think and plan more wisely?
3. What are the major problems that threaten us and what

social decisions do they require?

4. What kinds of changes may mediate the lives of individual Americans between 1975 and 1999?

It is to each of these points that I shall endeavor to address myself.

FIVE PREMISES ON WHICH TO BASE A STUDY OF THE INDIVIDUAL: 1975-1999

There seem to be five helfpul premises when we strive to think about the life of the individual in the next decade or two.

1. *Be ready to be surprised.* However well-reasoned and carefully projected our probings of the future may be, there inevitably is great room for error. In 1967, for instance, Herman Kahn and Anthony J. Wiener paid virtually no heed to the problems of biospheric pollution when they wrote *The Year 2,000: A Framework for Speculation*. Yet a mere two years later the threat of pollution provided the cover story of TIME magazine. The energy crisis that began in the autumn of 1973 was not clearly foreseen. Neither was the extreme danger of famine during 1975 in the world's hunger belt. A few writers pointed to the problems that were taking form, but, like Cassandra of ancient Troy, they were ignored or dismissed as "alarmist."

The changing attitudes of nations since 1972 or 1973 with respect to export-import policies is yet another example of a "surprise." Few of us anticipated that restrictions would by 1974 be placed on oil by the Arabs, on fertilizer by the Japanese, or on soybeans by the U.S.

One more example of the unexpected is the speed with which the U.S. reached zero population growth (ZPG) in 1973. Yes, we must expect the unexpected!

2. *Examine your assumptions regarding the role of education.* Since the future of the individual almost certainly will be closely associated with education, it is important to examine certain assumptions. During past decades we seem implicitly to have assumed that a universalized B.A. is desirable, the grade levels, diplomas, and compulsory education were not only "good" but essential, and that in academic fields such as mathematics or the language arts that a grasp of broad ideas and concepts was as important or more important than computational or usage skills. Assumptions like these and many others need carefully to be examined lest we find that we have accepted them with too little evaluation.

3. *Keep an open mind with respect to "alarming" ideas.* Especially during the mid-60's there was much concern about changing life styles that were symbolized by sexually explicit films and books, love beads, unusual male hair styles, the youth culture arguments over legalizing marijuana and abortion, rock festivals,

and so on. In terms of the point being made here, it is irrelevant to discuss the possible merits and demerits of the changes. The point is that a substantial number of persons — persons symbolized by but by no means limited to Archie Bunker — were more emotionally and intellectually discomfitted than need be by such phenomena as the long-haired male or the young (or not so young) female in abbreviated shorts or soaring miniskirts.

Glandular unreasoned reactions to certain forms of change are no basis for assessing or for attempting to redirect the private or public life of the individual.

4. *Seek security through "knowing."* In order to cope with and to help create desirable futures, it is important to develop a commitment to personal input from a variety of sources. Educational leadership requires more than listening to newscasts, casual conversation with one's colleagues, reading a few news magazines or an occasional book such as Toffler's *Future Shock* or Seilberman's *Crisis in the Classroom* after they have become conversation pieces. Rather, there is a need to invest in the development of your knowledge, say, of trans-disciplinary developments. What are some of the current ideas of psychiatrists regarding the causes of violent behavior? What factors seem to be creating danger of worldwide famine in a few months? What are the data suggesting that prenatal and postnatal malnutrition can cause permanent mental disabilities as well as physical deformities? What does such information suggest insofar as one's personal leadership activity is concerned?

5. *Be an optimist.* As the writer's grandmother used to say, "The worst things that ever happened to me were the ones that never took place." Educators are really no longer in business unless they genuinely believe that the light at the end of the tunnel is an exit to a better time not the headlight of a locomotive bearing down on them.

So much for our five premises. Let us turn next to four domains that have a bearing on the individual in American culture.

FOUR DOMAINS OF THE INDIVIDUAL'S PUBLIC AND PRIVATE LIFE

When discussing the future of private and public life, it is helfpul to develop and use some sort of domain or parameter. It is also necessary to indicate how these relate to the individual. Four relevant domains are considered here: (1) the realm of sociofutures, (2) of technofutures, (3) of biofutures, and (4) of human and psyche-futures.

1. *Sociofutures.* Dozens of futures for society, here defined as the "human community," can and have been identified. These include life styles, housing, schooling, demographic trends, child

rearing, and many many more. Because of the limits imposed by space, only one supremely important element will be considered. This is population.

The human community is seriously threated because of the extraordinary increase in the species since 1950. If we had used none of the earth's resource since 1950, on a per capita basis, they would nonetheless have diminished by 20% because in 1974, there are five mouths to feed for every four that existed 25 years ago. At present, the earth's population is increasing by 200,000 souls per day and in a nine-year interval (1985-1994) one billion people — the world's sixth billion — will be added even if ZPG were reached tomorrow on the entire planet.

The private and public lives of all of us patently will be influenced by this phenomenal growth in numbers. Just what forms this influence may assume are, of course, open to conjecture. Since ZPG has been achieved in the U.S., the population control problem will undoubtedly be international in its scope. Some indication of the intensity of the problem may be inferred from the fact that (on the basis of linear projections of current trends) the 2.5 billion humans in the Third World would total an impossible 40 billion by 2050 (cf. "biofutures" below).

2. *Technofutures.* In the realm of technological development there are three clear-cut alternative futures each of which will have an impact on the individual. One is to continue as we long have done, believing that an expanding "growth" economy (and concomitant resource exploitation) is not only essential to our prosperity but also is inherently good. Since the 1970 pattern of resource use for the individual should be one of conserving and based on a modest rate of consumption and a high level of satisfaction, a policy of continued unlimited plunder of unreplaceable resource supply makes no sense.

A second alternative, controlled evolution of "growth" is better than unlimited exploitation policies. As Walter Heller, Regents Professor of Economics of the University of Minnesota, has said, a successful economy depends on growth which will support the battle against air, water and noise pollution. Ergo, for the time being some form of "growth economy" may be imperative. Perhaps within ten years, however, thought must be given to a sophisticated devolution of technology.

The following model of changing growth patterns, while not to scale, suggests what may lie ahead of us. Note that unlimited growth becomes stabilized, then moves into an indeterminate period of dynamic contraction, and reachers a new stability hopefully in harmony with the biosphere, after 2020 A.D.

The initial stability (1980-1990) and the dynamic contraction (2000-2020) that seem likely to be needed to protect the planet

again have major implications for the individual. "Restraint legislation," democratically attained, seems almost inevitable. Such legislation presumably would influence the individual by limiting car size, mediating housing space and locations, such amenities as air conditioning and 78 degree winter thermostat settings, as well as freedom to travel, and less variety of foodstuffs available at the local market.

3. *Biofutures.* There are many possible biofutures ahead. They may be characterized by genetic surgery, memory pills, organ regeneration, the treatment of death as a disease, and so on. However, the real challenge, as Dennis Gabor (p. 170) put it is ". . . moving toward a mature society, stable in numbers and in material production, in ecological equilibrium with the resources of the earth."

Furthermore, the most portentous element in our biofutures is the likelihood (as Father Hesburgh, President of the University of Notre Dame said last spring) that the food crisis of 1975 ". . . will make the energy crisis look like a church-school picnic." At present, the Asian fertilizer shortage, exponential population growth, diminishing (and polluted) fish harvest, and wasteful uses of grain in the Western World seem likely to combine to create a famine that will involve a million or more deaths and leave perhaps 10 million persons impaired by severe malnutrition in a matter of six to twelve months.

Unquestionably, the private and public [illegible] individuals in the U.S. will be affected by the fact that only [illegible], Australia, and the U.S. have grain to export as of Augu[illegible]974. The life-style decisions involved in this critical situation seem obvious although the nature of the decision remains unclear. The U.S. may find itself obliged to eat less extravagantly, to return to the "string saving" era of our parent's and grandparent's day in order to help the millions in the hunger belts of Asia and Africa.

4. *Human or psychefutures.* At the core of this paper, with its focus on the individual, is the domain of human futures. Some aspects of our psychefutures — the possible fates of the "under-our-skins" world where we have our inner being — have been drawn out in our consideration of socio-, techno-, and biofutures, but more remains to be said.

Insofar as human futures are concerned the individual and his life style, both private and public, are tightly bound up in the dilemmas of a have and have-not world. Let me be explicit. With 5.6 per cent of the globe's population in our 50 states, we require something like 40 per cent of the world's annual output of raw materials (i.e., primary resources) in order to maintain the 1974 American way of life. At the same time we are becoming over-increasingly dependent on the other nations in the world. To

illustrate, let us consider the indispensable resource, oil. According to the National Petroleum Council, if present trends continue, *within ten years* the U.S. will need to import fifty seven per cent of our oil requirements. This is substantially more than the total oil imports (1974) of Western Europe and Japan that are supplied by the Middle East and Africa (Schurwacher, p. 111).

This is, of course, a linear projection of consumption and open to many influences that could change the situation

When confronting the have-not problem, it is important to keep in mind the extreme discrepancies that now exist between the world's rich and the world's poor. Some idea of the "income gap" is afforded when we realize that 1.8 billion people in the underdeveloped countries have a cash income of no more than $100 each or $400 for a family of four. The U.S. poverty level currently is defined at being $4560.00 for an urban family of four — over 1000% higher than the average world family income. There seems little doubt that the have and have-not gap that now exists will have an important impact on the individual human in America between 1975 and 1985. It also is likely to plague us increasingly for a long time to come.

Some of the broad outlines of the futures that may lurk ahead have been sketched. Let us look now at the decisions that they press upon us.

CONTEMPORARY PROBLEMS, SOCIAL DECISIONS AND INDIVIDUAL LIFE STYLES

The public and private life of the individual can be examined in some depth only when the examination is made in the context of the problems which are a part of the present and future. These problems by their very nature require that certain social decisions be made. The nature of these decisions, in turn, will have a great deal to do wtih the nature of the life styles which the future can support.

The problems listed below are drawn from the writer's monograph *The Educational Significance of the Future* a study funded by the USOE and published for general distribution by *Phi Delta Kappan* in November, 1973 (cf. bibliography).

Contemporary problems with a bearing on individual futures. Conversations with 82 professional futurists at such centres for policy research as RAND, the Hudson Institute, the Institute for the Future, and the Futures Group suggested what was very nearly a consensus as to ten major problems presently confronting and perplexing Americans. These include:

1. The *value* crisis: in what do we believe?
2. The *conceptual* crisis: how shall we define the "good life"?
3. The *equity* crisis: what is "fair" rather than merely "equal"

treatment?

4. The *credibility* crisis: Can we have confidence in our elected and appointed leaders? Can they be trusted or not to abuse the power of office?
5. The *institutional* crisis: Can schools, welfare agencies, distribution agencies, government, and comparable institutions continue to perform their functions?
6. The tacit *rejection of democracy*: do we seek equality, or do we want only "equality with the top 10%"?
7. The lack of *future-focused role* image for youth: can we help the young to develop a motivating, viable image of what they can become in the 1980's and thereafter?
8. *Faulty survival behavior patterns:* can we, for example, learn that large families no longer insure survival?
9. The *naive use of technology*: can we keep our machines from running us?
10. The *have and have-not problem*: one already mentioned above.

On the basis of these ten broad problems, what are some of the social decisions that are needed before the future of the individual American can become the subject of reasoned speculation?

Social decisions for the making. The social choices demanded of us can be expressed in many forms. For purposes of clarity, I have chosen to state them briefly and bluntly.

First, as stated earlier, we must determine what our policy shall be with respect to the role of technology. Will we use it naively for purposes of exploiting the remainder of our resources? Or will we move toward a stable state of affairs, in balance with the biosphere and with techno-skills used to heal rather than to cause wounds in Mother Earth?

Second, how shall we meet the needs of our human sub-sets? What provisions can society afford to make and not to make with respect to early childhood, the aged, the disadvantaged, the physically handicapped?

Third, what shall our transnational policies be in a world threatened by the spectre of widespread hunger and by numerous imbalances in goods and resources?

Fourth, and closely related to the first three questions, what if anything are we willing to relinquish, and to what order? What "restraint legislation" can and will American democracy tolerate in the interest of conserving and recycling resources? What "biospheric extravagances" such as large autos, snowmobiles, and extensive holiday travel will we limit in an effort to share the finite resources available to humankind?

A fifth social decision is related to the media. To what extent if any shall there be self-regulation to reduce, for instance, the 18,000

homicides that a child witnesses on TV by the time he reaches 14 years of age?

What shall be our policy regarding a sixth social choice: the degree to which behavior modification is encouraged or discouraged in children and adults who deviate from conventional patterns?

Seventh, what quality of life or QOL decisions should be encouraged by schooling by the media, and by other educative agencies: Shall the simple, low-consumption "Buddhist Right Livelihood" type of path be the subject of artful propaganda of the sort that now encourages us to live in what Toffler called a throw-away culture? And, closely meshed eighth choice, what concepts of "success" shall be most highly honored in the land? Currently our culture tends to urge everyone to strive to exceed the median in all possible ways with the result that half of our youth is doomed to frustration in at least some respects.

Ninth, how can we help, through social policy research and its applications, to begin to restore confidence and assurance in persons of all ages? Riots, inflation, assassinations, hijacking, have led to a malaise, to a lack of certainty which is psychologically corrosive. What tough decisions shall be made to help restore a sense of direction in a polycultural nation?

Tenth and last, what wise compromises with reality can be reached as new goals and new directions emerge? We have just so much time, money and energy to expand. How shall we distribute our chips in a game we dare not lose?

The individual's public and private worlds: 1975-1999. Events that have yet to occur obviously will be the *real* determinants of the lives of young and old in America during the next quarter century. At the same time, thoughtful writers such as Gabor, Medawar, Commoner, Boulding, Heilbroner, Bell, Salk, Roxzak, Toffler, Ward, et. al. (see bibliography), have provided us with abundant and generally well-documented views with respect to the probable shape of things to come. In effect, these scholars tell us, in general terms, what decisions we may need to reach with regard to the ten dilemmas inventoried above.

If the tentative conclusions of these future research specialists are valid, then the life of the individual in our culture is likely to be mediated in private and in public by such developments as these:

1. The continued emergence of new types of family structures and changing relationships between the sexes (facilitated by virtually foolproof birth control) but manifesting themselves in more conservative forms, i.e., an increase in the acceptance of new life styles, but a decrease in the acceptance of extreme innovations such as male/male marriage.

2. A growing role for women in all fields of work and, with increased equality, a decline in the so-called lib movement.
3. Increasing conservatism on the part of youth, partly reflected in less permissive child-rearing practices.
4. Of necessity, less status associated with material possessions as greater respect is shown the biosphere and as some redistribution of the world's goods occurs as a result of world community pressures on the West.
5. A continued decline in racism partly as a result of a cohesive trend in the U.S. as it is more and more confronted by demands from have-not nations; some increase in cross-ethnic marriages.
6. Greatly increased speculation with regard to what constitutes ethical and moral conduct; a concomitant decline in extreme student radicalism but increased liberal-humanist attitudes on the campus and somewhat thereafter among the non-college youth.
7. A top-off in per capita energy consumption as demand continues to exceed supply; initially government enforced, then on a voluntary basis.
8. Continued zero population growth becomes characteristic of all social classes and ethnic groups; stable population of approximately 275,000,000 with proportionately more old persons by 1999.
9. For at least a decade, increasing pressure to conserve foodstuffs in order to fight world malnutrition and hunger in developing countries until their own food production, distribution, and population dynamics are brought into balance.
10. Leisure time actively involving extensive travel and costly gear will decrease due to continued energy problems, higher costs, the need to work longer hours, and changing attitudes.
11. City expansion involving improved high-density housing will be accompanied by increased investments in public transportation and restrictions on automobile use.
12. Hard-core metropolitan poverty will remain a severe problem, partly due to the impact of inflation.
13. The media to which the individual is exposed will continue to pose problems but will gradually reflect more skill and imagination due to the improvisations of the 1980's in response to reduced TV advertising expenditures (reductions necessitated by relative loss of available revenue due to the trend toward a low-growth or stable economy).
14. Important changes in the nature of goods and materials as more synthetics replace some natural materials in home construction, clothing, etc.

15. Trends toward more intimate neighborhood life as larger shopping centers are supplemented by shops within walking distance of houses and apartments in high-density urban areas.
16. Inconclusive developments and diverse opinions in behavior modification postpones massive change.
17. Widespread use of improved data processing improves medical care, accounting, research, etc., but increases the potential for social controls by state and federal agencies.
18. Growing world interdependence with respect to food and mineral resources, and the expansion of transnational cooperations, promises to increase the variety and the flow of certain goods not readily available to the individual buyer of the 1970's.

While the small sample of possible developments that may occur merely hint at the changes that may take place in public and private life, they serve to stretch the imagination of persons in positions of educational responsibility as they plan today so that schools may better serve the world our young learners will inherit.

CHARLES J. RYAN

Charles J. Ryan is presently a consultant on Energy, Resources, Environment and Growth. He has served as Assistant Director for Policy Development for the National Commission on Materials Policy. He has also served as: A Senior Policy Analyst, in the Office of Policy Development for the Secretary in the Department of Commerce; a special Assistant to the Director of the Office of Economic Opportunity in Washington, D.C.; and Secretary General for the Atlantic Institute in Paris, France.

He is a former Fulbright Lecturer and French Government Scholar. As a graduate of Fordham University and New York University, he brings a variety of expertise to the energy and resources field. He helped draft and write a report on the national policy for the United States resources, i[illegible]d energy to the year 2000. He designed a number of sys[illegible]stigations for the Secretary of Commerce in "Nati[illegible]vity," "The Knowledge Industry," "Education and [illegible] Enterprise System," "Technological Unemployment," "Four Day — Forty Hour Week," and "Programming for the Enhancement of Industrial Technology."

In his speech on *Energy in Nature and Society*, Mr. Ryan pointed out the effects of a long history of increased energy consumption which changed the nature of work and the worker from that of a producer to that of a consumer. The traditional role of the home and the values of saving and conservation were changed by the increased use of energy. Our major gains in economic and labor advantage came from energy and resource inefficiency. With all this gain, there has been little change in income distribution and economic pattern; while everyone moved up through an increased GNP, it is time, he says, that we add a new factor in measuring our nation's progress — a factor of "quality of life."

Our traditional school curriculum, according to Ryan, has fostered values that are now in conflict with our finite energy and resources.

Our youth have been taught that:

1. more is better,
2. resources are limitless.
3. man is superior to nature.
4. man is the most adaptable form of life,
5. that waste is not bad if it is efficient.

Ryan's paper suggests new values that must be taught if man is to survive and implies that it is the role of education to bring about this change.

ENERGY IN NATURE AND SOCIETY

Charles Ryan

Consultant on Energy, Resources Environment and Growth, Washington, D.C.

The philosopher would speak of energy more in terms of a means rather than an end. Physics defines it as the ability to do work. The grammarian would describe energy by saying it is the verb in a sentence: the action, the connection between persons, places, things, ideas. It brings change. It provides the force for growth in a human body or in an economy, the destruction in a bomb, the mobility in transportation. In brief, it provides the power for everything visible and invisible that moves or lives.

The energy and material cycles form the physical base for life on the planet. The sun's rays, which are the prime source of power on earth, are captured by vegetation. Plant-eating animals get their energy from carbohydrates and proteins generated through photosynthesis, and flesh-eating animals in turn feed on plant-eating animals. Decomposing organisms feed on both plants and animals so that the material ingredients of life are returned to the soil and the cycle continues. Billions of years ago some plants and animals were trapped by geological pressures under the ground, storing the sun's energy for use today in the form of fossil fuels, notably natural gas, oil, and coal. In this way, the sun has provided most of the energy for use today either directly through plants and animals, wind and water power, or indirectly by solar energy trapped eons ago in the fossil fuels. In financial terms, the fossil fuels are like energy "capital." They are a single source, one time reserve of energy which once used is gone forever. Using them is like living off a capital inheritance. The sun's current rays, however, are like a daily cash flow. If all of it is used in a day, it does not diminish tomorrow's income. If not used, it is lost.

Man lived totally from the direct rays of the sun until about two hundred years ago. In earlier times, he gathered vegetation and hunted like his animal predecessors. Hunters band together in tribes for protection and aggression, forming an energy network which concentrated its force to subdue larger animals than individuals could attack. While this gave them larger amounts of food energy, it also made distribution of the bounty a more complex social function. Hunting societies were mobile, depleted local resources, aggressive in natures, and generally warlike. Their tradition and behavior is carried on today by their modern-day counterparts, the developers and exploiters of natural resources.

The social organization and value structure of hunter/gatherers was different from later peoples who found that there was greater

energy to be gained from growing selective plants and domesticating animals. Agriculture and herding transformed many hunters into settlers who used and reused the resources and processes of local environments and energy flows. Less land and virtually no mobility was needed to support local populations. Settlers became more established in terms of building structures and tools than hunters, and they were knowledgeable about the complexities of natural systems. The stationary life of farmers and herders developed a need for different types of skills, methods of protection and codes of behavior from the hunter. Settlers left a richer heritage in terms of science and art than the more simple folk cultures of the nomad.

In simple agricultural systems that depended on sunlight and plant production, land was an important resource and its use was a principal concern of the social systems. Because land ownership was generalized, energy control was spread throughout the population. The reward mechanisms of most societies were beneficial to those who controlled energy or whose work increased its supply. Because plants and animals in the food/energy chain need a certain amount of space to collect the dispersed rays of the sun, human settlements which tapped into this energy flow at various points were fairly spread out across the land. When communities formed, they remained small and evenly distributed with sizeable tracts of land between them.

Energy and economic self-sufficiency was a reality at the family or village level. Political and social institutions for all practical purposes did not extend beyond the farm community. Normally, all of the people within a self-contained energy, political, social unit knew or knew of one another. Rates of growth were low because energy increases were generally gained at the expenditure of human or animal muscle. Because food, wood, gravity and falling water in a solar society are both environmental resources and sources of energy, they are considered to be part of the same life support and energy giving system. Their inter-dependence is much less clearly understood in modern society. The interconnectedness of energy, resources, population and environment was recognized because an imbalance or surplus between them caused immediately perceivable effects like crop failure producing famine or an additional animal allowing more land to be put into production. Social mores and institutions were fashioned to maintain the equilibrium and stability of the natural and social systems.

The use of society's energy surplus (that which is left over after survival is assured) is generally determined by the group which embodies the dominant values of the times. In earlier societies, the church and the state exercised considerable influence over surplus energy. The building of cathedrals in the Middle Ages took the

energies of artists, craftsmen and peasants who hauled stones hundreds of miles to build edifices to the greater glory of God. The process often took hundreds of years, and once built they stood as examples to which energy surplus should be put. In later times, real palaces were symbols of the grandeur of the nation. In both cases, these efforts were interrupted by secular or religious wars which diverted the energy surplus into conquest or protection. As the surpluses grew, increasing shares were devoted to the production of goods and services and producing even greater surpluses. As energy was directed toward these purposes, trade and business expanded, and the producer/merchant played a larger role in the social matrix of determining how energy should be spent. By the time of the industrial revolution and the unprecedented energy surpluses delivered by fossil fuels, the possession of things in themselves and as a measure of status manifested a shift in social values from the time when surplus was used for the glory of God or the state.

When a society is presented with the option of moving from a low to a high, or from a high to a higher energy intensive system through technology or a new energy source, fundamental consequences effecting values and social structure accompany the change. Even though the consequences are hardly discernable at the time decision, their nature is known. Rejecting the increase preserves the values and stability of the current system at the sacrifice of the gains to be derived from the energy increase. Accepting the increase implies a willingness to see social relations and structure disrupted if necessary for the fruits of the new energy. But even when the latter position is taken, there is still a drive to keep the values, structure, production and consumption patterns of the former period. A society which constantly increases its energy intake lives in a constant state of conflict between old and new values and between groups to determine who will control the new surplus. Many current problems from Watergate to resource scarcity to dehumanization and alienation have been substantially influenced by the effects of perpetual energy increases since the founding of the nation.

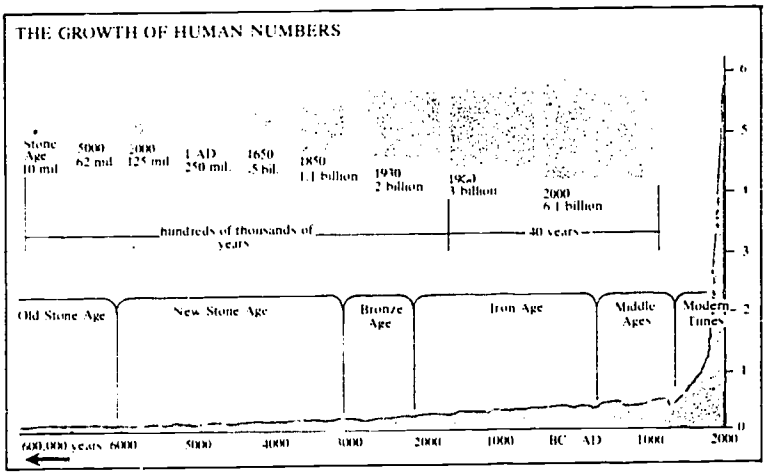
Today's simple assumption that energy supplies must be increased over the next quarter century because the nation needs it for expanding the economy and increasing per-capita income shrouds the more difficult and fundamental issue of what future increases will do to national life. Some indications of the answer are found by fossil fuels replacing solar energy.

While many political, economic and technological factors contributed to industrialization in the 19th century, the marriage of the steam engine with fossil fuels powered and sustained what turns out to be the foremost social revolution in the history of man.

Many of the pre-conditions for fossil fuels were understood and developed long before they were applied to the new fuel. For centuries, wind mills and water wheels provided the power for useful work through mechanization. Industrialization in England was first powered by water wheels. While the principle of combustion applied mainly to wood was known and used for hundreds of centuries for cooking and heating, it was not until the invention of the steam engine powered by coal that industrialization became the dominant force in world society. The sequential introduction of new fuels and energy technologies — petroleum, natural gas, internal combustion engine, electricity — constantly increased the energy intake and surpluses available to society.

For hundreds of millions of years, the course of human events and social development was geared to the slow process of learning how to tap into environmental energy flows without destroying the system that rendered it. Suddenly, in historial time perspective, the low level growth of the past turned upward in an almost vertical ascent, breaking with the experience of the past in almost every aspect and dimension of society. The charts below indicate the consistent pattern of exponential growth ever since in population, energy consumption, water use, urbanization, increases of speed, the producton of fossil fuels, carbon dixoide and books.

What the charts do not show, is how society was radically restructured in terms of human values, social relationships, patterns of production and consumption, and the roles of business and government. Many of the new values and social organization of the high energy intensive, fossil fuel society conflicted with millions of years of experience under a solar regime which had provided man with his measure for interpreting the fundamental meaning and significance of life.



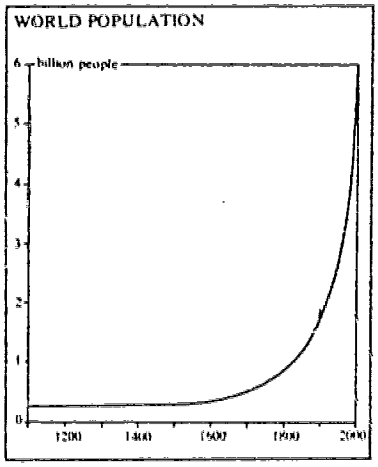
THE CHANGEOVER FROM A SOLAR TO A FOSSIL FUEL SOCIETY IN AMERICA

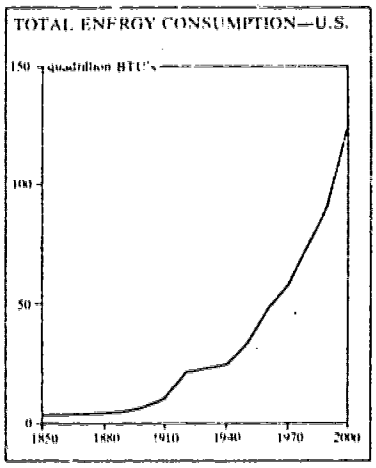
The Young Nation

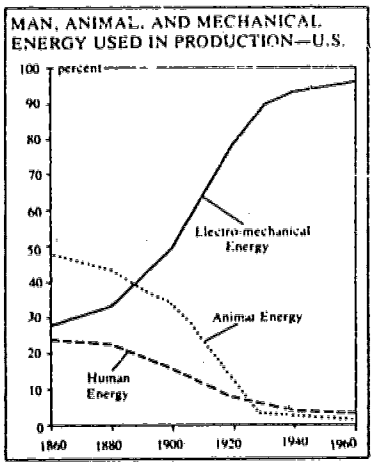
In early America under a solar energy system, the life of most of the population was spent on predominantly self-sufficient farms or in farm communities, first on the eastern seaboard, then, moving westward. Almost all goods and services were produced in the household or on the farm: food, shelter, most articles of clothing, building materials, furniture and entertainment. Some goods were provided locally by the village blacksmith, cooper, craftsmen and journeymen. Only a small percentage came from the outside world: spices, lace, china, books. Hard work, as a necessity of life, fostered social and moral attitudes that regarded waste as sinful. The durability and functional aspects of products mattered more than fashion. Pride, care and the satisfaction of doing a good job grew out of the nature of this type of system where the units of production and consumption were the same. If the producer was not the consumer, he was his close neighbor. The rewards and sanctions for good or bad work went far beyond those which are based on a price system. Material and energy thrift was an innate value instilled by life's experience in the frugal energy system.

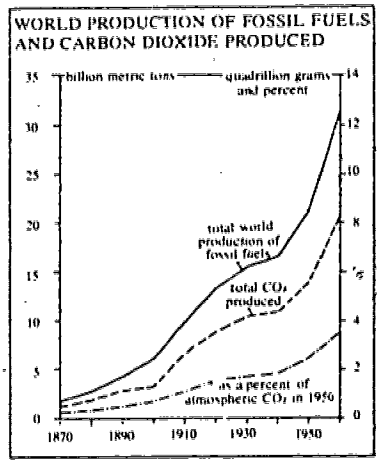
Depending mainly on their own resources and abilities, Americans developed a sturdy individualism much more in day-to-day living than in a philosophical sense. The farmer created in the new world the American version of one of the two major traditions of civilization, that of the settler, providing a stationary society that was family, church and local community oriented, with little or no dependence on outside resources, markets or political events.

The family lived, worked and learned together. While there was a degree of division of labor, a good part of farmwork was done in common with men, women and children sharing the effort and benefits of their labor. The relationship between parents and child was based on a lifetime interdependence which was reinforced by religious and social institutions. Children worked at an early age to contribute a measure of energy for the food which sustained them. The attention and care given to them was expected to be returned to the parents in their old age. The father who owned the land and controlled its energy flow could determine how and to what extent he would provide for each child's future through inheritance or opening new land. When land was scarce, his power of control over children was diminished. Because rates of growth were low, life's conditions changed little, and the experience of one generation was the same for two or three. The skills of farming and an understanding of nature were passed from grandfather to father to son with a continuity and validity. The similarity of life's experience and practical knowledge created a basis for harmony and

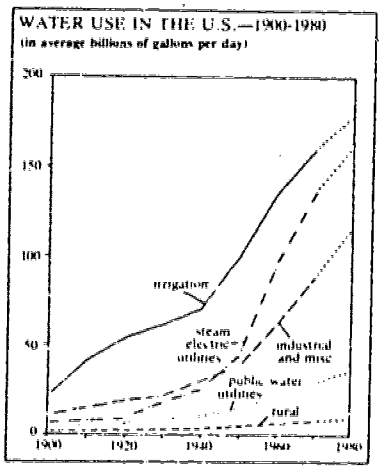

WORLD POPULATION
billion people
6
5
4
3
2
1
0
1200
1400
1600
1800
2000

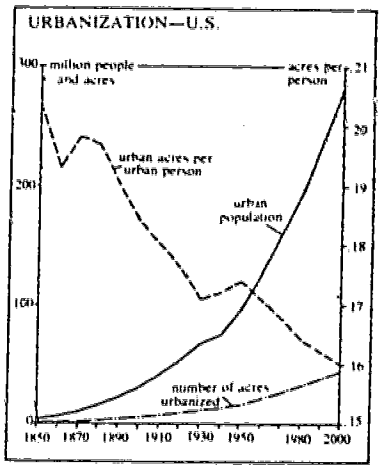

TOTAL ENERGY CONSUMPTION—U.S.
quadrillion BTU's
150
100
50
0
1850
1880
1910
1930
1970
2000

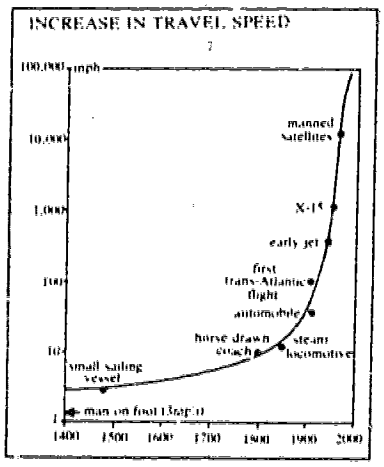

MAN, ANIMAL, AND MECHANICAL ENERGY USED IN PRODUCTION—U.S.
percent
100
90
80
70
60
50
40
30
20
10
0
Electro-mechanical Energy
Animal Energy
Human Energy
1860
1880
1900
1920
1940
1960

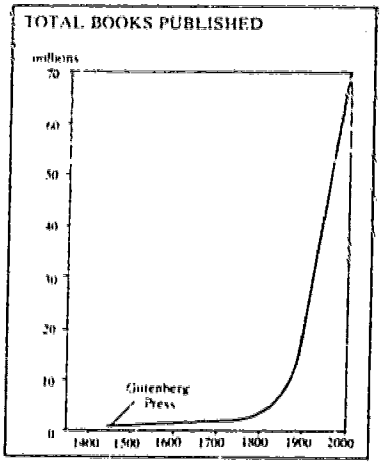

WORLD PRODUCTION OF FOSSIL FUELS AND CARBON DIOXIDE PRODUCED
billion metric tons
quadrillion grams and percent
35
30
25
20
15
10
5
0
14
12
10
8
6
4
2
0
total world production of fossil fuels
total CO2 produced
as a percent of atmospheric CO2 in 1950
1870
1890
1910
1930
1950

98


WATER USE IN THE U.S.—1900-1980
(in average billions of gallons per day)
200
150
100
50
0
1900
1920
1940
1960
1980
irrigation
steam electric utilities
industrial and misc
public water utilities
rural


URBANIZATION—U.S.
300
200
100
0
million people and acres
acres per person
21
20
19
18
17
16
15
urban acres per urban person
urban population
number of acres urbanized
1850
1870
1890
1910
1930
1950
1980
2000


INCREASE IN TRAVEL SPEED
100,000 mph
10,000
1,000
100
10
1
manned satellites
X-15
early jet
first trans-Atlantic flight
automobile
horse drawn coach
steam locomotive
small sailing vessel
man on foot (3 mph)
1400
1500
1600
1700
1800
1900
2000


TOTAL BOOKS PUBLISHED
millions
70
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1400
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1900
2000

understanding between generations. By today's standards, this type of life seems hum-drum and limited but has the benefit of freedom from the problems of a future-shocked society.

No continent ever was settled and exploited as quickly as North America. As the landscape seemed limitless and its resources apparently inexhaustible, little thought was given to the consequences of such rapid development. Profligate use of energy and resources was almost a natural reflex. The first great American fortunes were built on the near extinction of the beaver, antelope and bison. Carrying on the same hunter tradition, subsequent fortunes were made at the next highest level of natural resources: timber, the metals and the fossil fuels. Beginning with the big push westward in the mid-nineteenth century, a conflict in attitudes and lifestyles represented by the traditions of the settler, on the one hand, and the hunter/prospector, on the other, was evident at every level of national life: cowboy and farmer, homestead acts and mining laws, expansionists and conservations.

Just as dispersion characterizes the solar society, concentration is the hallmark of fossil fuel society. The difference grows out of the nature of the fuel source of the two systems. The need for high temperature energy concentrated on the boilers of steam engines and the ability of coal to deliver this type of power made a perfect match. All of the other elements of production gathered around this center creating a concentration of people, buildings, materials and pollution in growing cities. As industrial capacity grew to meet the demands of an expanding nation, and as money replaced barter as a medium of exchange, commerce flourished.

The Civil War brought with it a new dimension to the patterns of production and consumption by supplying materials to an army hundreds of miles away. The scale of industrial capacity in the North took a quantum jump because of the need to produce large quantities of heavy equipment for the war effort. The ability to supply customers at a great distance and to produce large capital goods set the stage for the next large scale projects: the opening of the West through the construction of the railroads, and the development of international trade through the building of the merchant marine. Only the largest firms could fill the demands of consumers scattered all across the nation and the sea. They had the advantage over small local firms because they could attract financial support, advertise and cater to a much larger market.

Energy and National Political Traditions

The struggle between Hamiltonianism and Jeffersonianism formed the political boundaries of 19th century America. The shift from a solar to a fossil fuel society had an effect on the political

direction of the nation. Solar energy supported the ideaology and social structure of Jefferson, and, fossil fuels, Hamilton. The Hamiltonian tradition believed in centralized government with emphasis on law and justice, the sanctity of contract and the development of military and naval forces to insure tranquility. It favored the executive and judicial branches as the main means of governance. In practice, it sponsored industrial development, economic growth, expanded export trade, and eventually participation in world diplomacy and power as a means of securing domestic peace.

Jeffersonianism was founded on the principle that the government which governs least governs best —ideally a self-regulating society. It favored decentralized government, with emphasis on a nation with adequate land, self-reliant citizens, local institutions, the minimum of military force required for national self defense, and a popular attitude of self-assertion to resist any threat of oppressive government. The legislative was its favored branch of government.

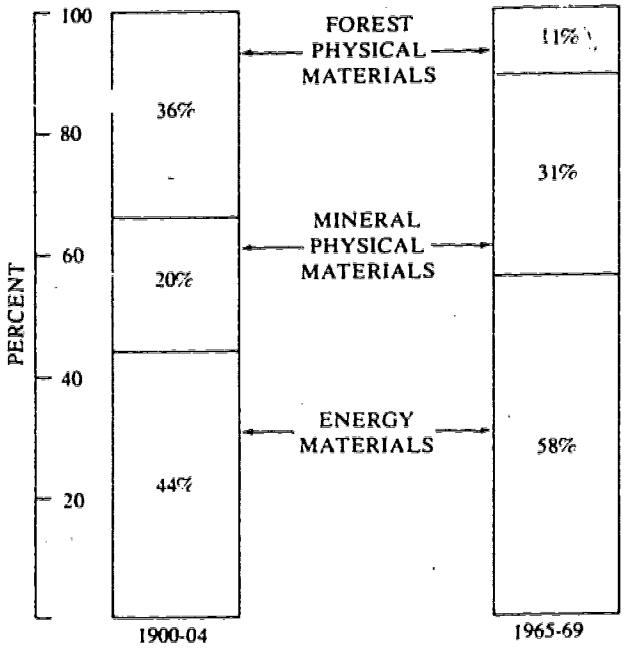
The influence of Jeffersonianism steadily declined in practice as the increasing use of fossil fuel energy developed a society which concentrated economic and political power in centralized institutions, and the control of energy became more and more centralized in big business and government. Once fossil fuels dominated national energy use, there never was a contest between Jeffersonianism and Hamiltonianism; the contest was between Jeffersonianism and the nature and structure of the fossil fuel society.

By the turn of the 19th Century, the frontier and self-sufficient farms — images of solar America — gave way to the city, the factory, the railroads and soon — highways — symbols of America moving into a century of every increasing fossil fuel development and energy consumption.

Increasing Consumption and Dependence

By the first quarter of the 20th Century, the United States was a developed nation and a world power. Its development and position were to a large measure due to energy production. In the first half of this century, the use and proliferation of the automobile, electricity and petroleum brought the country up the scale of energy intensiveness and dependence. As indicated in the following chart, during the period 1900-1904, energy fuels represented 44% of all raw materials (less agricultural products) passing through the economy. During the 1965-1969, the figure jumped to 58%. The trend of using more energy fuels than raw materials (copper, iron, aluminum, concrete, etc.) continues today at an increasing rate.

PHYSICAL STRUCTURE AND ENERGY RAW MATERIALS
RELATIVE PROPORTIONS CONSUMED
IN 1900-04 AND 1965-69



The table below points to the long term trend of energy consumption outpacing the growth of both population and the economy.

Percentage Increases of
Various U.S. Indices — 1900-1970

	%
Population	275
GNP	1100
Per Capita GNP	350
Energy Consumption	1400
Per Capita Energy Consumption	400

From 1900 to 1920 there was a tremendous surge in the use of energy because during these two decades, electric power began to be substituted for the direct use of fuels, and the automobile proliferated from 8,000 in 1900 to 8,123,000 by 1920. These types of systems and technological changes lock increasing energy consumption into the social fabric with little choice for the citizen than to go along with them.

Urbanization

Bigness brought with it the strange contradiction of concentration and sprawl. As cities grew, they lost their homogeneity, becoming zoned into districts according to function — factory, trade, financial, residential. With time, basic transportation and construction techniques based on fossil fuel energy changed the configuration of the city. The automobile facilitated the development of suburbs which moved whole classes of people out of the center city, making them dependent on cars for transportation back into the city to work. The elevator permitted the city to grow upward with skyscrapers and high rises, thereby crowding people and things into less space than before. The time and mobility gained by the use of fossil fuels began to diminish as factors of physical and social concentration increased. A horse and buggy took less time to travel the length of Manhattan Island a hundred years ago than it takes a 300 horsepower car to make the same trip today.

The family lost a degree of homogeneity when many of its functions were taken out of the home. Family members no longer worked and learned together, they only lived together. Factory and office work took men and women away from the house. The worker became an element of production in organizations that were much larger than farms and operated principally on time, precision and economic values. Children's education was moved from the home to a one room schoolhouse, then to a neighborhood and consolidated school. This process tended to isolate the housewife, even though she gained more energy and machines to do work. In the exchange, her immediate surroundings had less family and community contact.

The rhythms of life changed. The four seasons and the rising and setting of the sun had set the standard and time of human activities for millions of years. With the new imperatives of the city, factories and offices, the slow pace of solar rhythms were replaced with the faster beat of machines, and human activities became geared to the factory whistle, time clock and departure and arrival times for transportation. Gas, then electric light, heating then cooling facilities powered by fossil fuels standardized work and living conditions and protected or separated the individual from the discomfort or pleasures of the elements and the four seasons.

The new society perceived itself as being independent of nature because its energy source was not dependent on sunlight, land and vegetation. It overlooked the fact that the natural environment is a source of energy even though it does not enter into the economy. It is a sink for spent heat and material waste and the provider of oxygen, water and a whole range of life support elements and systems necessary for human survival with or without fossil fuels.

Because people were liberated from the frugality of natural energy flows, per capita income increased, and the basic necessities of food, clothing and shelter were better provided than ever before. Many social problems associated with solar society seemed to be on their way to rectification. With time, the social isolation of the farm disappeared into city crowds for those who left the farm. Then urban isolation became a phenomenon of city life as density and anonymity increased. The discomfort of long and painful physical labor under the solar regime was reduced while psychological disorders and strains in the social system increased.

A Changed Social Structure and Conflicts of Values

In the transformation from a low to a high energy intensive society, the individual, the family and local institutions lost much of their former significance while government and business gained in influence because they determined the use to which the new energy and surpluses would be put. The development of coal, oil and gas demanded the type of capital investment and technological know-how far beyond the capabilities of the former developers of energy, i.e., individuals and the family. As more fossil fuels entered the society, control of energy which was generalized throughout the population in solar time passed into the control of a small number of developers. As the new energy became more abundant and cheaper, it competed against the family as a producer of goods, making articles for household use cheaper than could be made at home. With time, goods made in large factories replaced those of local craftsmen and eventually of small producers. The effects of economies of scale which were beneficial to large producers were detrimental to the former pattern of domestic and local production.

With functions of production and consumption separated, the buyer had no idea of the conditions under which products were made. Unlike in village life, because social sanctions could not be put on the producer of bad goods, the government took on a number of roles unnecessary in the solar production/consumption mode. It set standards of quality, instituted and controlled contractual arrangements between producers, middlemen and buyers. It regulated transportation rates and heavily subsidized transportation itself. The government's role grew substantially in other areas which families and communities cared for in the former period: education, medical care, old age assistance, aid to the handicapped.

Because the city drew many people from rural districts, the interdependence between parents and children was broken with children moving away. The state eventually filled the void with social security payments.

As business and government grew, local communities and organizations could not match their power to effect regional development. The economic base of many communities today depends on decisions made in distant corporate headquarters or government agencies.

The point to note in these examples is how the increased use of energy increased the scale and restructured society, shifting power to the larger organizations away from smaller ones and individuals. The process also created conflicts between groups and between past and emerging values.

Conspicuous Consumption and the Virtue of Waste

As the share of work done by coal, oil and gas increased and the contribution of human muscle decreased, the importance of the citizen as a worker/producer decreased also. His functions of the consumer became the increasing focus of the economy and it became more important in determining his social status. The machines through which the new power flowed were guided by men on factory assembly lines whose loss of pride in workmanship created new human and social problems. The significance of dress as an indication of social class was destroyed by the mass production of clothing from "upper class" models. Fast changing fashionable clothing then distinguished the rich from those who could not afford to discard clothes until they were worn out. The principle of rapid obsolescence spread to automobiles, houses, furniture and most consumer products.

Thorstein Veblen coined the phrases "conspicuous consumption, leisure and waste" to explain how the middle class wished to emulate the rich. If not wealthy, they could at least show signs of consuming as much as the rich and take on the outward trappings of leisure and wastefulness for the sake of social standing. These attitudes and behavior were the opposite of the "waste not, want not" ethic fostered by the frugal solar society. As planned obsolescence and cheap energy and raw materials made it more economical to discard and buy anew rather than repair, the national solid waste problem was created and grew. The current movement toward recycling is not only a response to urban blight and materials shortages, it responds to a deep-seated repugnance of an economy that has made a virtue out of wastefulness. Tax laws amortizing buildings in a shorter period than their functional life leads to energy and construction materials waste by the process of tearing down and building anew for the sake of economic activity. The social costs of the destruction of neighborhoods is not part of the economic analysis.

The groups of producers, manufacturer, and government officials who most influence energy use do not feel responsibility for

excessive depletion of resources, environmental damage or social uprooting caused by these practices. The managers of the high energy intensive society fashioned a new ethic around the use of energy which was much more simplistic than the one of the solar society which paid careful attention to the use of resources, the protection of the environment and the perpetuation of social structure. Briefly stated, the new ethic said, "Energy is to be used for maximum economic gain." The rest was left to happenstance and caveat emptor.

Creating the Gap Between Demand and Need

The trauma of the depression forced new ways of thinking about the production and consumption patterns of the past. The two quotes below appeared in *Printers Ink* and *The New York Times*, respectively in the early thirties. They predicted the patterns of the future.

"Any plan which increases consumption is justifiable . . . People are persuaded to abandon the old and buy the new to be up-to-date. Does there seem to be a sad waste in the process? Not at all. Wearing things out does not produce prosperity, but buying things does."

"An economic age 150 years old has come to an end. The consequences of industrial evolution have made necessary a new philosophy, a new business point of view, and practically a new social system. Production can and will develop, but its power of development will from now on be dependent upon the growth of consumer demands as these are stimulated by new techniques, finance, by new methods, and increased by a more effective distribution of purchasing power."

As these new techniques and methods worked their way into the structure of the economy, orienting it more toward consumption by stimulating demand, the gap between "demand" and "need" widened as did the gap between efficiency and waste.

It was through the process of stimulating demand and the effect that this process had on the social structure that the consumer/citizen became more and more an instrument of the energy and economic systems. With time, demand at one level of consumption became need at the next highest level. For example, air conditioning, which was once a luxury, through advertising and other new methods, became a need. Today, often it is a no-choice condition in buying a new house or in working in a centrally air conditioned building because it is built into the structure. The particular type of economic and technological changes which have had substantial social impact in the last fifty years and which were motivated to stimulate economic growth have brought along with them the no-choice alternatives of greater energy use.

Energy and Social Costs of Economic and Technological Expansion

Since World War II, most of the large scale substitutions which have been economically profitable have also brought with them large scale energy inefficiency and pollution. They have made the country more dependent, in some cases irreversibly dependent, on growing quantities of fossil fuels. The post-war goal to increase labor productivity was achieved by a more skilled labor force and the introduction of production technologies that allowed a worker to produce more per day, or that did the work of a number of workers. The change decreased labor input while it increased wages and profits. It met with some opposition because it also increased unemployment. The counter argument was that because it also increased economic activity, it created more jobs somewhere else in the economy through the growth process.

It was not until the environmental crisis in the sixties and the current energy crisis that it was noted that the process also increased energy use and pollution per unit of goods produced. What was gained in economic and labor advantage was paid for by energy and environmental resource inefficiency. Those manufacturing sectors which are particularly inefficient in the use of electricity — chemicals, petroleum refining, paper and pulp and primary metals — have grown more rapidly than more energy efficient industrial sectors. Electricity productivity in U.S. manufacturing has decreased from $.70 per kilowatt hour in 1947 to $.45 per kilowatt hour in 1967 (in 1958 dollars). Labor productivity has increased in U.S. manufacturing from about $4.00 per man hour in 1947 to about $8.00 per man hour in 1967.

The same post-war period saw a marked trend in the substitution of synthetic products like plastics, synthetic fibers and detergents, for natural products like wood, cotton and soap. This trend is very noticeable, in furniture, house and office articles and clothing. While the raw materials and energy for natural resources — water, carbon dioxide and solar energy — the raw materials and energy for synthetic products are non-renewable resources like oil and natural gas. Because of the structure of the economy, production of synthetic products is more profitable than natural ones. This would not be the case if the cost of pollution were added to the market price and if energy costs were allowed to find their free market level. As it is, many natural products have been driven off the market because of the values operating in the economy.

Changing Values: Growth and Energy Use

The lines of confrontation are becoming increasingly clear between a new set of economic and social values, and traditional

institutions and economic patterns.

Energy use and policy is at the heart of the conflict. In the mid-1960's the religious belief in growth as the ultimate good and solver of all social problems began to give way under assessments of the consequences of growth and its impact on the quality of American life. The very growth that had enhanced the wealth and power of the country in the past threatened to paralyze it in the future.

Congested highways, dilapidated center cities, the confused pace of life, difficulties in delivering education, and insufficient medical services are today social and political concerns. The belief that the growth would ultimately solve the major social problems of poverty and unemployment is challenged by no change in the distribution of income over the past fifty years, and by the fact that other industrialized non-communist nations with slower growth rates have had extended periods of full employment.

The conviction that growth solves distribution problems is giving way to the belief that it increases them. More recently, quantity increases in per capita income provided by undisciplined growth are eaten away by long term, rampant inflation as a result of the same growth and the way the economy operates. There are signs that the economic philosophy of the future will discard increased consumption as an article of faith and emphasize instead efficiency, conservation of resources and conscious efforts to improve the quality of life. Recent work done to formulate social indicators to determine national well-being in addition to the economic indicators of GVP bears this out.

The shift in focus from "standard of living" to "quality of life" is a sign that the public is demanding more sophistication in the management of national affairs. After assessing the costs and benefits of 200 years of growth without a governor, the country is opting for stability. The goal of maximum economic growth no longer has the public support it once had. In everyday life, the desire for stability is an attempt to fill the void left by the costs of undisciplined growth.

Because they have become aware of the long term social costs of unmanaged growth, many towns and countries throughout the country have put a moritorium on sewer and water systems, and are limiting building permits in an effort to stabilize and create a more desirable quality of life. Land use planning is becoming an increasingly important function of local government. These trends at the local level portend national policy in the future.

As growth brings diminishing social returns, many feel it is now time to turn the energies of the country to maturation, a process that is evidenced in all human, biological and social systems.

With time, social and psychological needs are added to the basic needs of food, clothing and shelter in order to achieve stability and growth in a larger sense. A biological system that has reached a state of stable maturation uses less energy in that state than it did in the growth mode.

The greater energy efficiency comes from more efficient organization. In the conduct of national affairs, economic efficiencies have been gained at the expense of resource, energy and environmental values. Striking a balance between the four is the means of creating a better quality of life as the nation enters its third century.

Implications for School Curriculums

What will energy and resource availability be in the next century? There are two basic scenarios. The first says that there will be more than today based on the development of atomic energy. The second, based on the fact that fossil fuels cannot last forever and they are becoming scarcer, says that there will be less than today. The problem with the first scenario is that even if large scale use of atomic energy is technically and economically feasible in itself, the environmental and social costs will be very high, perhaps, prohibitively high. Life will be more complicated and complex than it is today. The resulting environmental damage may seriously endanger the life support systems of the biosphere. The problems of transportation of nuclear fuels and disposal wastes alone make it a high risk system to any society which depends on it. The continued increase of psychological stress and social erosion will further test man's ability to adapt to increasing rates of future shock.

The problem with the second scenario is that it provides no answers as to what will happen to society as we know it if energy decreases after the past century of exponential growth. In addition, there seems to be no way the expanding world population can reach the levels of American per-capita consumption of energy with the remaining fossil fuels. To a certain degree, what makes these questions imponderable is the way we have used and thought about energy since the introduction of fossil fuels. If the same attitudes and assumptions prevail into the next century, life, or at least human existence in society, will come to an end in the next century or so. And this is where education and school curriculums come in.

What attitudes and assumptions prevail in our society that were not part of human existence before the advent of fossil fuels?

1. "More is better." This has lead us to a religious belief in growth as "good" that can have no ill effects. It has had the consequence of accelerated resource depletion and has in-

duced us to ignore some of the tough questions of social management like poverty, distribution of income and quality of urban and rural life because we have believed that somehow economic and energy growth would solve these problems in the process. In reality, it has increased them.

2. "Resources are limitless." The energy of fossil fuels increased the amount of resources available to man. The continued application of energy and technology constantly expanded resource reserves beyond the amount of former periods. The behavior of the resource development system has been and still is that there are no upper limits in this finite world that technology cannot stretch further.
3. "Man is superior to nature." The idea of conquest of nature was foreign to solar man. His efforts were to better understand nature, to gain more from it, but not to conquer it.
4. "Man is the most adaptable of the species." While this may be true, when it became a tenet of social management, it justified change in the social order for economic gain and resulted in future shock, dehumanization and alienation.
5. "That something is there and you know how to use it justifies its use." Energy and resources were generally not used in solar societies outside of the value structure of local religious and social institutions. When the dominant use of fossil fuel energy was determined by the producers of energy, manufacturers and big government, its use tended to optimize their interests in expansion and return of benefits. The upshot was: the use of energy and resources did not have to have a moral or ethical justification.
6. "Waste may be wrong, but it is, according to the case, convenient, time saving, clean, money making, etc."

When all of the above are woven together into patterns of decision making, they create a world in disequilibrium because they go counter to some fundamental physical and biological realities. Then the belief that more is better is combined with the assumption that resources are limitless, there is not reason to have a higher justification for using or wasting something because use is good per se and there's plenty more where that came from. This is especially true when man is thought to be the superior of the species with resources put on earth at his disposal. The attitude of man's adaptability is the security valve in this system of thinking. He is supposed to change at faster rates as the false assumptions meet with greater resistance from the laws of nature and a finite resource base.

The reason these assumptions came into being and did not prove

inoperable is because we have been living off energy capital, that one shot source of power stored in fossil fuels eons ago. When that source runs out, these assumptions will no longer be workable unless another source capable of providing the same amount of energy is found. Society has grown approximately four to five times larger (population and energy consumption indices) in the last century. If we have to revert back to pre-fossil fuel levels of energy availability, society as we know it today will break down.

Because they have become operating values in our society for a number of generations, we hand these assumptions to our children in various ways, by our behavior, through advertising and television, and through school curriculums. They should be replaced with the following set of principles which reflect the physical and biological order of the world:

1. GROWTH AND EQUILIBRIUM

The process of growth in living organisms — a micro-organism, and animal, a forest, human society — develops through stages; growth, transition to maturation, and decline to death. Our society operates as if the growth period can be extended ad infinitum by a manipulation of economic factors which will defy the past experience of all societies which went before. It is well to remember that stable equilibrium is not a concept which grows out of the discipline of economics. The danger of stimulating a society to grow beyond its resource and/or its social and environmental base carrying capacity is the risk of breakdown. There are many ways that the complete cycle of growth can be communicated to children from kindergarten right on to college.

2. FITNESS

Certain categories of resources are finite as opposed to naturally renewable like wood and water under most circumstances. Energy fuels are lost to man's use once burned even though they heat the atmosphere. This concept too can be gradually introduced with increasing sophistication in the higher grades, beginning first with cookies in a jar. This fundamental starting point can then be expanded to demonstrate the closely related concepts of depletion, rates of use and limiting factors. Quoting from *Limits to Growth*, "A French riddle for children illustrates another aspect of exponential growth — the apparent suddenness with which it approaches a fixed limit. Suppose you own a pond on which a water lily is growing. The lily plant doubles in size each day. If the lily were allowed to grown unchecked, it would completely cover the pond in 30 days, choking off the other forms of

life in the water. For a long time the lily plant seems small, and so you decide not to worry about cutting it back until it covers half the pond. On what day will that be? On the twenty-ninth day, of course. You have one day to save the pond.

3. SYSTEMS

Much of our education is spent in learning of facts, usually quantifiable. This tends to give us a still life snapshot of reality. However, existence is more like a motion picture, and while facts are important, the processes and dynamics of facts in motion are even more important because they more closely reflect reality. Practically everything we learn belongs to a system if it is so presented to us: our bodies, our home, the cities, and town we live, ultimately the universe itself. The possibilities for curriculum changes in this area are infinite.

4. INTERCONNECTEDNESS

The line of examples which I have just given from our bodies to the universe are not only systems in themselves with subsystems, they are all interconnected even though their effect/affect relationships are not always known. It is not necessary or even possible to communicate the details of the interconnectedness of the world we live in; however, communicating the principle is necessary. A cartoon depicts two people standing in a street looking at a dead dog. One says to the other, "This is the dog that bit the cat that bit the rat that ate the malt that came from the grain that Jack sprayed." That process is no different in principle from the connection which this paper has tried to show between energy and social structure. Exposing the student to the interconnectedness of the systems which he lives and plays also has the benefit of stimulating the child's natural curiosity. When certain linkages are made, a new awareness is formed and if that awareness finds a moral or ethical base, behavior changes. For example, ten years ago few people realized that they were increasing air and water pollution in their cities at the power plant site because they used an air-conditioner. Ten years from now, their children may use less if they understand the connection and if their feelings about nature and the environment are part of their rationale for behavior.

5. CONSERVATION

Conservation is not just turning off the lights in an unused room, or using less, it is a way of life which grows out of systems in equilibrium. Conservation implies the use and reuse of materials which are made from renewable resources as opposed to synthetic

(plastics, dacron) which are made from the non-renewable resources of natural gas and oil. The fundamental base for conservation is resource and environmental efficiency. For the moment, at least, its practice is expensive because the economy has been structured in such a way as to minimize the value of these elementals. However, the value of conservation will return with the increasing scarcity of energy, resources and environmental amenities.

6. NATURE

The growth of population, industrial and agricultural output, and pollution, which depends upon world wide flows of capital, resources and technology are bringing us up against the carrying capacity of the global ecosystem. If the practices of the fossil fuel society continue, future generations will be faced with the choice of survival or the respect for nature and her laws, in the same way that past civilizations were faced with the same choices but at the local level. The energy of fossil fuels allowed society to forget for one hundred years that all nations reside within the processes of nature upon which they depend. The environmental crisis is just the first communication from nature that it is time to change the habits and behavior of the last century's energy spending spree. While it is impossible to assign greater importance to any one of the six points made here, respect for nature as a necessity — not just for the sake of preserving a nice thing with trees and flowers out there in the country — may be the most difficult. However, only new found respect for Nature with a capital N, i.e., man in society in the biosphere can establish the philosophical, moral and emotional context which will change human and social behavior to bring stability rather than breakdown in the next century or so. The lack of such a context has brought us to where we are today.

Taken separately, each of these six points has a contribution to make to the process of making educatonal curriculums more relevant. Taken together, they begin to form an educational philosophy for dealing with the future. The moral underpinning of this philosophy is best stated by Aldo Leopold, "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise."

DR. GRANT VENN

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He is a native of the state of Washington where he received his degrees at Washington State University. He has served as Superintendent of Schools in the states of Washington, New York and West Virginia. In addition, he has been President of Western State College in Colorado, Executive Director of the AASA National Academy for School Executives and was U.S. Associate Commissioner of Education for nearly five years from 1966 to 1971.

He has written in the fields of Vocational Education, Administration and Career Education. His two best known efforts are *Man, Education and Work*, 1963 and *Man, Education and Manpower*, 1971.

He also served as Director of Field Training for the Peace Corps in 1962-63.

MAN EDUCATION AND SOCIETY THE YEAR 2000

Grant Venn
Callaway Professor Education
Georgia State University

SUMMARY

Man Education and Society: The Year 2000 was selected as the topic of the 1974 Institute because of the great concern for the necessity to prepare every child for an adult role in an unknown future. At the time the reader sees this, nearly every person that will be governing our society in the year 2000 will have been born and all the youth will be in school or about to enter. Those who have to make the decisions are here — their education is not a hypothetical proposition — they are present on this earth.

It is also very true that never before has any society found itself in the position where every citizen must be educated — in our present technological world, one cannot function unless one has a basic education as well as specific skills needed in a technical society.

We have reached a point where society either educates everyone or supports them.

Technological change has, suddenly and dramatically, thrown up a challenge to our nation's political, economic, social, and education institutions. If it is to be solved, it is going to demand a massive response on the part of American education. Technology has, in effect, created a new relationship between man, his education and his society. Such a relationship has held for some persons in the past; technology has placed us in the position where perhaps it now holds for all men throughout the world.

Two words describe the times in which our basic social institutions were designed: *stability* and *scarcity*. The design of the home, the church and the school were reflected in these two encompassing conditions of life. In effect, the basic social institutions which prepared the young for the future, were designed as "maintainers" of society — that is, to teach our young the "right" things they would need for the future, since it was essentially like the past. The other overriding condition, scarcity, tended to cause men to reach constantly for "more" in terms of material goods; such as food, shelter and warmth. The man who could gain the most "things" was considered most successful!

Suddenly, the conditions of the environment have become "change" and "abundance" in this nation. The home, the church, and the school cannot be effective maintainers since the future cannot be predicted. The production of "more" may be our

greatest mistake, the long-held values of "more is better", "you can succeed if you try hard enough" — in effect, many of the long-held answers don't fit the future!

The problem we face cannot be solved alone, either as individuals or as single states or nations.

What is "right" and what is "wrong"?

While it becomes obvious that all the "right" answers of the past do not fit the future, our present lack of any planning may be leading us into directions that may prove fatal.

The seven topics presented and discussed during this 1974 CSSO Institute were an attempt to raise some of the "right questions" if not the right answers.

The editor in preparing the final report of the Institute tried several approaches and finally settled on an analysis and review of the total institute as a single package. As one listened to the speeches and discussions, there were overriding issues and questions that came through all the individual topics. These issues spoke to the questions of what is the role of education and what are some of the specific changes that must be started soon if we are to give our young a chance to find the answers they need.

The essence of the Institute seems to be that certain consistent questions rose to the surface and certain consistent approaches were recommended as new approaches with little assurance that they would deliver guaranteed results.

The clearest overall approach to finding better ways seemed to be a new role for the state departments of education.

A NEW ROLE FOR STATE DEPARTMENTS OF EDUCATION

No one during the Institute suggested that state education departments could find the answer and give them to others to carry out, but it was equally clear that no one felt that state departments of education could play the passive role of simple supervision and administration of an established educational program and organization.

From the question of finances to the question of values that should be taught in the schools, the consensus was that leadership and priority changing by state departments was the most important step to be taken.

After all the questions had been asked and all the dialogue ended, it appeared that the most difficult matter would be one of instituting new approaches to education; even if evidence were available to forsee which of the new directions were correct.

The long held concept of local control of education at the individual school district level and the general belief that the federal government would be unable, either through finances or regulations, to change education, left the members of the institute

with clear recognition that they were in the position to make the greatest difference.

While the discussions brought out the need for research, for higher education change, for participation by the community and for greater political involvement by political bodies — the present political, economic and social conditions point clearly to action at the state level.

It may be that the action of the 60's and early 70's at the federal level raised greater expectations than could be accomplished — the present situation certainly and clearly points to a new direction for the states.

What should the states be doing, where do they begin and how should it be done to develop an education approach that will meet the needs of the future?

This report will not answer these questions, but the speeches and discussions did consistently lay out some issues that need consideration and some basic premises that must be looked at in every state of the nation as state departments of education assume the leadership role they cannot avoid.

The balance of the editor's section of this report will attempt to summarize the basic premises that came through all presentations and discussions and finally indicate some of the conditions that must be created in order for a new approach to the education of our young for the year 2000.

Basic Premises Emerging from the 1974 CSSO Institute

The following premises are not intended as a complete nor inviolate interpretation of the speeches and discussions but rather, an attempt to summarize the main threads that seemed to be in the total fabric of the Institute. Hopefully, it will serve to encourage the reader to carefully read the major speeches.

Premise One

Schools and curriculums have been built on the past experience of society as the best formulator of education for the future.

Toffler's belief that the schools have been a "maintaining" institution for a static predictable society was not agreed to by all, but there was agreement that the education for the future had to end its reliance on the past as predictor of the future.

The traditional cluster of knowledge, skills, values, and concepts will not help our young face the future in their private life, the international situation, their citizen role, their work role, nor in the area of energy, national resources or growth.

The continued expansion pattern of the present technological society, based on past needs and values, as it is; cannot perpetuate itself forever.

Lastly, in terms of designing schools and curriculums, neither

researchers or state departments of education can set relevant educational goals by reviewing what has been.

Premise Two

The future will be pluralistic and changing – tomorrow will not be like today.

How then do we know what to teach our young and how to re-educate our adults? The answer, if there is one to this question, assumes a knowable future; this appears to be false at the beginning. An attempt to find answers with old processes seems to be unproductive.

During the discussions following every topic, there seemed to be an attempt to say "you are an expert, tell us the answer," and each expert said in effect, "we don't know any answer" other than we must teach our young to look to the future and continue to learn new ways and new things.

Premise Three

Education cannot be completed during the childhood and youth of the individual.

The patterns of formal education have been set by economic and cultural needs of the past. Financing of education has been based on the premise that when you are young you learn. Values, knowledge, and concepts are presented as if they would last forever. Without exception, there was agreement that this approach to formal education is unacceptable for today and tomorrow.

Premise Four

Knowledge is not enough – the use of knowledge and its effect on the future must be understood.

It is unlikely that anyone could prescribe what knowledge would be needed in the future, but it seems certain that new knowledge, technology, public policy and individual actions must consider the effect of future conditions created by the use of that knowledge.

Premise Five

The future is more dependent on the values man holds and the political decisions made than it is on the continued extension of technology.

The euphoria, created in our society by the application of knowledge and technology to the old problems of food, shelter and warmth led us to believe that simply doing more and better, what we were already doing, would continue to solve our problems, has turned to a sour depression.

We spend more on education — yet we have massive unemployment! Our young do not hold our old values the way they

should. We have more of what we need; but crime, pollution and welfare all increase.

We have come to realize that we must decide what we value most and that we must make some hard value judgments as a society aware of the fact that there is an environment that is finite and destructable — man is not isolated from nor can he isolate himself from the earth — nor can man live alone!

Premise Six

Energy and resources in the world are finite; increased use of energy cannot be a permanent solution to our problem.

Our energy shortage, more than anything else, caused us as a nation to realize that we live in a world where we cannot disassociate ourselves from that world nor the actions of man in that world. Even if the energy problem was solved, the finiteness of air, water, soil and other necessities for life would still require overall understanding and decisions related to our dependency on all parts of the world.

Premise Seven

Education must help every person develop minimum tool learning skills.

The concept is not new, yet it is now a goal which everyone must achieve if one is to solve the problems he faces individually and that man faces as a whole. While learning the basic tool skills was desirable in the past because it enhanced one's opportunities to get more, it now becomes an essential so each person may contribute to society and so group decisions may be reached that will help achieve a viable future.

Premise Eight

Individuals need more learning about social process with a greater emphasis on participation in group decision making.

Again we come face to face with the fact that many problems of the future must be solved based on values and priorities set by groups. Many of these values will have to be enforced by group action and will need the involvement of many individuals in order that hard decisions can be implemented. Many of the future problems cannot be solved by individual decision or action. The heavy emphasis on individual achievement and competition may need to include learning about cooperation and group achievement.

Premise Nine

There can be no such thing as "value free" education.

As learning becomes more tied to the future, personal and societal change "values" come to the foreground. It is doubtful that we shall ever return to the concept of values in the same way

we saw them in the past, but there can be no doubt that our young must be motivated in terms of purpose and values if they are to learn effectively.

Perhaps there is a need for the clarification of new values needed to solve future problems. They may become clear as we begin a deliberate search for values we wish to teach and to provide experiences for our young in using these values in solving real problems. Values that guide behavior as it relates to a changing environment must be understood.

Premise Ten

Education must become more an interplay between the learner, the environment, and the society.

It would appear that our young have become isolated from the "real work" of society and from the real decision making of society. Decision making may become the subject of the learning process if there are greater opportunities for "action learning" and group learning by teachers and students. Many persons feel that our youth in school today tend to become "de-motivated" by being cut off from the productive work and the essential decision making processes of home and society.

Premise Eleven

The rapid changes in today's society have created a need for more frequent and earlier teaching of abstractions and sampling of reality.

The over emphasis on knowledge, information, and theories have caused our youth to be freed from the testing of their beliefs in a non-controlled environment — the real world. If one remains too long removed from the environment and culture, one tends to see the "real world" as unreal or to reject the learning environment of formal education as unfair and unimportant. Many of the young are so isolated and unable to "try-out" their concepts and theories in the real world that the problem of transition from school becomes too great to handle — in effect, the schools cannot educate alone!

Premise Twelve

The immediate future is not likely to provide a larger share of the public dollar of the GNP for public elementary and secondary education.

The rising and immediate demands of more public dollars for welfare, health, crime, old age, energy development, and unemployment, to list a few, will make it much more difficult than in the past to receive financing. In fact, education's long held political strength shows a temporary, if not a long term, decrease. A shift from local and federal dollars to more state aid seems to be the

pattern that will continue — again a push toward greater state leadership and accountability.

Premise Thirteen

Many of man's future problems must be solved on a world wide basis.

While it must be said that the participants of the Institute understood this, there seemed to be less viable discussions as to how education could tackle this issue effectively. It would appear, however, that failure to educate our young regarding this fact may be the action that could have the greatest effect on our future.

The previous premises are an attempt to select and synthesize the many ideas that were presented and discussed. In any case, they become the basis for some specific ideas that were brought up in the discussion as to how education might be changed to help educate our young to be able to work out solutions for their future more effectively than in the past.

CONCLUSIONS

Three things seem to emerge from the total institute that apply to each of the seven Institute issues and the premises which the presentations and discussions brought out.

First

In the United States today, every citizen must learn the basic tool skills if he is to function as a citizen in a democracy and as an individual in his private, public and work life.

In addition to the three R's, the basic skills would appear to include group participation, environmental relationships and planning for the future!

Second

The simple concept of improving what is already being done in education will not be adequate, it may even be harmful in solving present and future problems.

Organization, structure, role and purpose, methods, content, financing, relationships among school and society, leadership, and time frames must all be evaluated and changed. The greatest danger seems to be that simple improvement rather than basic change might be attempted.

Third

All speakers and discussions pointed up the fact that leadership for such a searching analysis and formulation of new directions cannot come from 16,000 local school districts nor from a federal

government concerned with crime, welfare, energy, unemployment, health and other problems that can only be solved at national level – leadership must come from the states, individually and collectively.

This broad conclusion must raise the question of whether the states are willing to assume such a task and how they must cooperate to provide some new directions. While the failure to take any immediate action may not show any obvious default, it is certainly true that education, or more accurately, learning is the key to the future.

The following conclusions seem to be suggested as approaches which might bring about major change!

One

The states collectively should establish specific minimal competencies in each of the basic tool skill areas and each state should make them the first priority for funding, staffing and organizing.

This would suggest the following:

(a) Legislation and policy which would allow state expenditures for teaching illiterate adults in every state and territory.

(b) State policy enaction that would require skills in diagnosing and getting help for incompetent students by every certified educator regardless of speciality.

(c) New state action for our high school and college students and interested adults to be trained and used as tutors, aids and teachers of the basic skills as a way of giving special help and as a way of establishing the priority.

(d) Reward success in the reduction of illiteracy and student achievement through increased state finances.

(e) Annual state reports should be devised to replace the normative achievement tests in the future with competency achievement.

Two

The states should convene a task force to study and report the ways that are being tried and ways that might be used to provide alternatives to earn the high school diploma.

(a) A review of all state legislation and regulation that prevent learning or prevent recognition of learning outside the school should be made and published with suggested ways to include such learning in students attempts for a diploma or certificate.

(b) Standardized test competencies should be developed in the various courses in the secondary schools and used as a basis for giving credit toward graduation.

(c) Students achieving minimal credits ought to be encouraged

to develop their unique aptitudes and to test these in the community, work force and the school systems.

(d) There should be a policy devised in each of the states that ends the long held basic of "time in place" as the evaluation of learning for credit.

Three

The rigidity of the present public education pattern as to schedule, curriculum, staffing and financing allows for little individualization of instruction or development of alternative learning styles.

(a) Financing patterns which fix attendance and schedule patterns should be studied as to new ways to allow local school districts to experiment with alternative learning approaches without penalty in loss of state aid.

(b) Restrictions and regulations which make local school units subject to loss of aid in terms of yearly calendar, location of classes, methods of instruction and size of class ought to be studied for a new way to encourage flexibility.

(c) Regulations must be developed which encourage the use of the community, adults, students and other learning sites than the classroom and teachers.

(d) Certification, licensing and graduation requirements should be reviewed to see which create rigidities in the learning process.

(e) Full-time attendance from grades one through twelve may have become a barrier to learning — what are alternatives?

Four

Ways must be found and policies established in the states which provide opportunities for youth to participate in the real world as part of their education.

(a) Youth need to test and try out their knowledge and skills in the significant activities of the culture prior to completing high school.

(b) Educational credit should be available to students for activities related to their studies in work, volunteer action, community participation, school volunteer programs and other programs contributing to the betterment of the home, school, community and society.

(c) Such activities ought to take place throughout the calendar year.

(d) A starting point for such contribution ought to be in the schools where youth can help teach younger children the tool skills as well as the many content courses where certain children may need special help.

(e) Recognition and opportunities for youth contributions are fundamental to the development of worth and dignity in the young — to always get and never give detracts from the self image of the individual.

Five

States must begin to develop policies which change the concept and the myth that all education takes placé while one is young.

(a) Many states have regulations that keep youth in school full-time and prevent the continuing education of adults.
(b) The time traps of learning for the young, earning for the middle-aged and yearning for the retired must be changed to a concept of continuous learning.
(c) There is a necessity to change state regulations which prevent the use of older, volunteer citizens from becoming active in the education of youth.

Six

There is a need to develop a required review of each young person's education, upon reaching the high school, which will become the basis for planning the next several years of education.

(a) Since maximum learning creates a greater achievement spread among individual students, an extended individual review and analysis ought to be done for each student prior to assigning any high school plan. It should emphasize:
    1. Career planning
    2. Basic competencies
    3. Overall knowledge
    4. Experience needed
    5. Weaknesses
    6. Special aptitudes and interests
(b) State regulations ought to encourage the development of individual curriculums rather than mandated courses if the basic competencies have been achieved.
(c) Opportunities for learning and problem solving where the student is held accountable ought to be emphasized.
(d) Opportunities for group projects which emphasize planning, cooperation, community improvement, participation and implementation should be part of the learning experience.
(e) Greater use of adults and students from other countries and cultures should be emphasized.
(f) Studies of environmental, energy, population, food and other future oriented problems ought to be encouraged as part of individual education.

Seven

It is obvious that the schools alone cannot educate our youth.

State Departments should encourage, through policies and financing, the use of other societal agencies and resources to be part of the planned educational program of high school and older youth.

(a) There is no way the schools can create laboratories or classrooms that simulate the new technologies or conditions which make up the real world. Perhaps, at all times a third of our youth ought to be learning outside the formal school in planned experiences.

(b) The solution of many future problems are dependent on decisions made among and between nations — learning in other countries and bringing other people to this nation for learning ought to be part of the experience of all youth!

(c) Since the future indicates a smaller share of the public dollar for education, states should develop regulations and policies which use the entire year and the entire society as educational resources.

(d) Restrictions, regulations and policies often cause local school systems to fear trying such programs. Every state ought to review their own regulations and change those which try to restrict learning to schools and teachers.

Eight

The fifty states should organize a commission to establish the values that are significant in approaching problems that must be faced in the future.

(a) A course of study should be planned around these "values" and be made available as an elective to high school students.

(b) Since change is so great and problem solving the necessity of the future, the state should establish a study which would define the essential skills, understandings and approaches that our young should learn in order to participate in the social decisions that must be made in the future.

(c) Knowledge and information is not only the basis for solving problems, our schools need to help our youth gain experience in group decision making as a basis for future citizenship.

(d) The use of knowledge without understanding its consequences can prove fatal to mankind — can our youth be taught how to analyze and review the possible consequences of continued use of technology without regard to the future?

Nine

The immediate future will see three groups that must become more active in our society – women, minorities and retired – state departments of education need to look at how education should be altered to further educate and to use these resources.

(a) Limited funds and other resources indicate that retired per-

sons could become a major contributor to the education of our youth — specific planning should be done in each state as to how this resource can be used in education.

(b) The continued lag in the education of minorities and in their participation in the work force is a great cost to our society —ways to reach the minority parents with children in school must be found if the cycle is not to continue.

(c)The use of women in only selected jobs and social responsibilities has become too great a waste of human resources. — a joint state effort ought to look at ways education can change to avoid continuing the restrictive use of women in our culture.

Ten

Our society presently does not have a method for helping our young make the transition to adulthood, to the work force, to full responsibility or to independence. Can education be seen as relevant by our young if it assumes no responsibility for helping them find a place in society?

(a) We invest huge sums of money to get our youth through high school or college and hardly a dime to see that they enter the work force where they can use their knowledge, skills or aptitudes.

(b) We have the highest youth unemployment of any nation which would argue that every youth ought to be helped to cross the gap so they may continue to learn. Each state ought to look at the problem of the role of the school in making the entry job a means rather than an end.

(c) One of the speeches referred to the fact that our youth are "de-motivated" because of the isolation of youth from the real world. Would a placement function for the schools help motivate youth?

(d) Would the feedback from a "transition" function help keep the schools up-to-date in terms of change?

Eleven

Planning for the future was the essence of the institute both for the individual and the educator. Each state should devote some resources and some joint efforts to "thinktanking" the implications of change in society as it affects education and the role of the state.

(a) Every high school student ought to devote a portion of their time to the development of a career related to the future and sensible public and private life. Obviously, no plan would be absolute but it should set some goals and objectives, as well as some alternative plans for the future.

(b) The only thing certain to come is the future and its form is constantly changing, thus it would seem absolutely neces-

sary that the state agency devote more energy to anticipating ways education should change to help the young prepare for that future.

(c) Most research in education has looked at parts and pieces rather than the total relationship of man, education and society. The CSSO should establish a long-range planning and policy group to look at societal issues and the implications for education. At present, there is no such body looking at this problem. Can the education Chiefs afford to let others do all the directing of the future?

The summary and conclusions reached by the editor are not those that might be selected by another person.

Again, they grow from the belief that the states must take the lead in looking at the future and must arrive at some new directions and new ways to prepare our youth for a different set of conditions than we know today.

The last several decades which saw an emphasis on research and technology as a solution to educating our young is now recognized for what it was — trying to lay out a trip without knowing where we were going.

What education should be doing is a "value decision" reached by the people who own the schools — doesn't every state department need to look at the options and allow for informed or studied choices rather than fearful reactions to a changing fature?

1974 CHIEF STATE SCHOOL OFFICERS INSTITUTE

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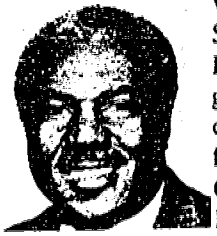
INSTITUTE CONSULTANT—PARTICIPANTS

LEROY BROWN, prior to assuming his present position as Alabama's State Superintendent of Schools (1961), was the President of Jefferson State College in Birmingham for six years. A native of Cleburne County, Alabama, Dr. Brown received his B.S. and LL.D. from Jacksonville State University (Alabama) and his M.S. degree from the University of Alabama. Dr. Brown did graduate work at Princeton University and received his Doctor of Education degree from Columbia University. In addition to many professional experiences, his honors include Alumnus of the Year, Jacksonville State University (1965-66) and recipient of the Freedoms Foundation Award (1968).

MARSHALL L. LIND, Alaska's Commissioner of Education, was superintendent of schools in the Kodiak Island Borough School District prior to becoming State Commissioner in 1971. A native of Wisconsin, Dr. Lind received a B.S. degree from the University of Wisconsin, a Master's of Education degree from the University of Montana and a Ph.D. degree from Northwestern University. He has served in the public schools as a teacher, principal and superintendent. He has been visiting professor at Northwestern University. Commissioner Lind is a member of Phi Delta Kappa, AASA, NEA, and serves on the board of directors for the Agency for Instructional Television, the Northwest Regional Education Laboratory and the Center for Northern Educational Research.

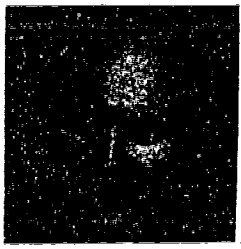
WELDON P. SHOFSTALL is Arizona's State Superintendent of Public Instruction. Dr. Shofstall received the B.S. degree at Northeast Missouri State Teachers College and the M.A. and Ph.D. degrees at the University of Missouri. In June, 1970, he was appointed U.S. Secretary of HEW to the Grant Administration Advisory Committee for a three year term. Among other professional experience, he has been Professor of Secondary Education, Dean of Students and Professor of Higher Education at Arizona State University; Dean of Administration at Stephens College; and Superintendent of Schools in Memphis, Missouri. He received the Outstanding Educator Award from the Arizona Committee for Responsible Education and has been lised in *Who's Who in American Education.*

ARCHIE W. FORD, Arkansas' Commissioner of Education graduated from State College of Arkansas and the University of Arkansas. He has received a Doctor of Law degree from Ouachita Baptist University. From elementary, high school principal, and superintendent of schools, he has a large administrative experience. His professional affiliations include life member in Arkansas Association and National Education Association, the American Association of School Administrators and a past president of CSSO.

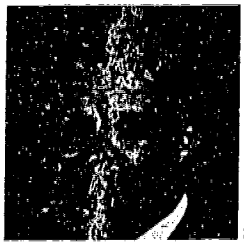


WILSON C. RILES is California's State Superintendent of Public Instruction. Dr. Riles received both his B.A. and M.A. degrees from Arizona State College. He has received honorary Doctorate of Law degrees from Pepperdine College and Claremont Graduate School and honorary Doctor of Humane Letters from St. Mary's College, University of the Pacific and University of Judaism, all of which are in California. His efforts were instrumental in the passage, by the California Legislature in 1972, of legislation providing more than $300 million in new funds for education and, at the same time, creating significant local property tax relief by increasing the state's share of local school costs. He implemented a comprehensive early childhood education program, the state's first Bilingual Education Act, a broader local choice in the selection of textbooks and a more effective system of evaluating new education techniques.

DAVID A. SPEIR was appointed Superintendent of Schools on October 28, 1973, by the Governor of the Canal Zone. Joining the Panama Canal Zone Division of Schools in 1951, he has also been a teacher, counselor, assistant principal, principal, supervisor of instruction, and assistant superintendent. He graduated from the Junior College Division of Georgia Military College in 1942, served three years in the Air Force in World War II, received his A.B. from the College of William and Mary in 1947, and the M.Ed. degree from the University of Florida in 1949. He has also studied at the University of Havana and Florida State University. He is married and has two grown children, David, 27, and Beth, 24. Though born in Georgia, he calls Florida home when he is in the United States.



CALVIN M. FRAZIER is Colorado's Commissioner of Education. He received his A.B. degree from College of Puget Sound, his M.A. and Ed.D. from the University of Oregon. His professional career covers teaching in Washington State, Assistant Dean of the School of Education at the University of Oregon, an associate professor at the University of Colorado. A proven education leader, he served as a district superintendent in Colorado.



MARK R. SHEDD, Connecticut's Commissioner of Education, graduated from the University of Maine and received his Ed.D. from Harvard University. A wide background in education includes visiting Professor of the Graduate School of Education, Harvard University, and Consultant, Institution for Social and Policy Studies, Yale University. He has been Superintendent of Schools, in Philadelphia and Englewood, New Jersey. He has received Honorary Doctor of Law degrees from the University of Maine, College of Wooster and Bates College. He received a Doctor of Letters degree from Drexel University. His active memberships include American Association of School Administrators, National Urban Coalition, Phi Delta Kappa, NAACP, and the Harvard Graduate School of Education Alumni Council.

KENNETH C. MADDEN, a native of Orbisoria, Pennsylvania, is presently Delaware's State Superintendent of Schools. Dr. Madden received his B.S. from Shippenburg, Pennsylvania, his M.A. from Chapel Hill, North Carolina and his Ed.D. from University Park, Pennsylvania. His professional activities include membership in NEA, AASA, Phi Delta Kappa and he is listed in *Who's Who in American Education*, *Who's Who in America*, and *Who's Who in the East*. Other honors include winner of the John Hay Fellowship in Humanities and Idea Fellow (1967). In addition to a distinguished military career, Dr. Madden has authored numerous educational publications.

RALPH D. TURLINGTON, Florida's Chief State School Officer, has a solid record of twenty-eight years of public service. As the Speaker of the House and the "dean" of the Florida legislature, he has a proven record as a pioneer in finance and education. In education, his work has led to expanding Florida's community college system and was instrumental in the establishment of a new university in Tampa, Boco Raton, Orlando, and Jacksonville. He has co-authored a book entitled *The Legislator's Guide to School Finance.*

JACK P. NIX is presently Georgia's Superintendent of Schools. Dr. Nix, a native of White County, Georgia, graduated from the University of Georgia with a master's degree. He holds honorary doctorates from both John Marshall and Piedmont Colleges and a Specialist in Education degree from the University of Georgia. Dr. Nix, president-elect of the Council of Chief State School Officers, believes that the field of education, more than any other facet of society, provides the greatest opportunity to serve people. His primary goal is to see that every child in Georgia receives a quality education. Dr. Nix was one of the nation's first educators to recognize the need and importance of providing vocational opportunities to public school students who desire training in technical, skilled and related areas, and to this end, area vocational-technical schools and comprehensive high schools have been established throughout Georgia.

TIMMY TEICHIRO HIRATA, Hawaii's Superintendent has been a leader in school administration for over twenty-five years. He is a graduate of the University of Hawaii and Columbia University. As a community leader, he is active in the council of Economic Education, the past president, a founder of the Central Honolulu Community Association, and numerous other activities. His professional activities include president of the Hawaii Association of Secondary Principals, the Hawaii Association of Curriculum Development and the American Association of School Administrators. He has served on legislative, finance and other committees for many years.

D. F. ENGELKING, Idaho's Superintendent of Public Instruction, has a teaching and administrative career which spans 30 years and ranges from teaching in a rural two-room school to Superintendent of Schools at Blackfoot. Dr. Engelking attended Greeley State Teachers College and the University of Idaho. A supporter of the Eight State Project: Designing Education for the Future, he has been active in numerous education organizations such as the Idaho School Administrators Association. Social and civic interests have included memberships in the Chamber of Commerce, Rotary Club and Lion Club. In 1972, he received the Freedoms Foundation at Valley Forge Award as a "Distinguished Educator." He received special recognition awarded for active service and interest in the National Research and Development effort in Career Education for Mountain-Plains Education and Economic Development Program. His Honorary degree of Doctor of Education was awarded by the University of Idaho, 1974. He is presently serving his fourth term as Idaho State Superintendent of Public Instruction.

MICHAEL J. BAKALIS, Illinois' Superintendent of Public Instruction, is the youngest superintendent in the State's history and the last to be chosen by popular vote. Dr. Bakalis earned a B.S. degree in education and M.A. and doctorate degrees in history from Northwestern University. During a 12 year teaching career spanning elementary through university levels, he established a reputation as an innovator and leader in education. His achievements at Northern Illinois University led to his appointment as Assistant Dean of the College of Liberal Arts

and Sciences. Dr. Bakalis' concerns as superintendent have included efforts for increased citizen involvement in educational decision making, for up-grading instruction, and for providing equal access to quality education. Dr. Bakalis' book entitled *A Strategy for Excellence* was published in August, 1974.

HAROLD H. NEGLEY is the State Superintendent of Public Instruction for Indiana. Dr. Negley earned a B.A. degree at DePauw University, an M.A. at Butler University and an Ed.D. at Indiana University. The author of a number of school publications, he began his career in the Indianapolis Public Schools. He entered the Indiana State Department of Public Instruction in 1967 as Director of Curriculum (6 months), later becoming Director of the Ball State University Programs at Grissom Air Forc Base. From 1967 to 1970 he served as Assistant Superintendent for Instructional Services in the Department of Public Instruction. Dr. Negley has also taught courses in social studies and introductory courses in education at Indiana University, Indiana State University and Butler University. A member of various professional organizations, he headed the Indiana Committee for Individualized Instruction. Dr. Negley co-authored *Search for Freedom*, a 1970 textbook in U.S. History.

ROBERT D. BENTON, Superintendent of Public Instruction in Iowa, received the B.A. and M.A. degrees from the University of Northern Iowa and an Ed.D. from Colorado State College. Dr. Benton has held various educational positions, among which are teacher, Director of Public Information and Coordinator of Secondary Education (South Dakota), assistant superintendent and superintendent of schools. He has held professional affiliations in NEA, South Dakota Association of School Administrators, National School Public Relations Association, AASA and State Advisory Council of Vocational Education. Having served in various civic capacities in Council Bluff, Dr. Benton was named Outstanding Young Man of the Year in Rapid City.

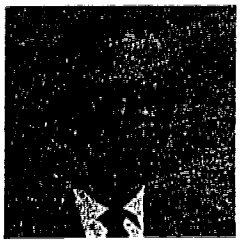
C. TAYLOR WHITTIER, Kansas' Commissioner of Education since 1969, received the B.A., M.A. and Ph.D. degrees from the University of Chicago. Dr. Whittier's experience includes Executive Director of Central Atlantic RegionalEducational Laboratory, Superintendent of Schools in Pennsylvania and Maryland and Visiting Professor at Stetson University and F.S.U. He is Chairman of the ESEA Title III State Advisory Council of the District of Columbia and past National President and Treasurer of the Association for Educational Data Systems. Among his publications are *Teachers, Administrators, and Collective Bargaining (1968);* "A Look at Decentralization" in *The School Administrator* (January, 1969); and "The Supervisor" in *The Supervisor: New Demands, New Dimensions* (1969).

LYMAN V. GINGER, Kentucky's State Superintendent of Public Instruction, received the Baccalaureate degree from Kentucky Wesleyan College and the M.A. and Ed.D. degrees from the University of Kentucky. Listed in *Who's Who in America,* Dr. Ginger has experience in all fields of education — ranging from teaching to administration. He served as president of KEA during the development of the Minimum Foundation Program and has also been President of NEA. In 1968, he was secretary to the U.S. Delegation to the World Confederation of Organizations of the Teaching Profession held in Dublin, Ireland. Dr. Ginger was appointed by Dean Rusk to serve a two-year term on the Education Committee of the United States National Commission for UNESCO and was reappointed for an additional term.

LOUIS J. MICHOT is presently Louisiana's State Superintendent of Education. A native of Lafayette, Louisiana, he has been active in business, government, and education for many years. He has held positions as Executive Director of the Lafayette Chamber of Commerce, and Assistant to the Vice President of the Air Transport Association of America in Washington, D.C. From 1960-64 he served in the Louisiana Legislature and was a candidate for Governor in 1964. In 1968, he was elected a member of the Louisiana State Board of Education and was elected State Superintendent of Education in 1972.

CARROLL R. McGARY is the Commissioner of Educational and Cultural Services for the State of Maine. A native of Auburn, Maine, Dr. McGary is married and the father of two children. Having earned the B.S. and M.Ed. degrees from the University of Maine and the Ed.D. from Harvard University, he also attended Tufts and Notre Dame in the Naval V-12 Program. He taught at Boothbay Harbor and Calais and was Superintendent of Schools at Princeton, Belfast and Westbrook before joining the State Department of Education as Commissioner in 1971. Dr. McGary is a member of many educational and community organizations and he has published numerous professional studies.

JAMES A. SENSENBAUGH, State Superintendent of Schools for Maryland, received the B.S., M.A. and Ed.D. degrees from Columbia. In 1965, Dr. Sensenbaugh was awarded the Doctor of Law degree from the University of Maryland. Educational and civic responsibilities formerly held include State Director for the Department of Rural Education of NEA, Vice President and Secretary of the Maryland Association of School Superintendents, President of the Teachers Association of Baltimore County and Chairman of the National Safety Commission of NEA. Currently, Dr. Sensenbaugh is Chairman of the Maryland State Teachers Retirement System, member of the Commission on Aging, chairs two committees on ABA, Council for CSSO, and is a member of the Public Broadcasting Commission.

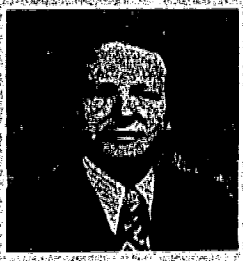


GREGORY R. ANRIG is Commissioner of Education for the Commonwealth of Massachusetts. Prior to becoming Commissioner in 1973, Dr. Anrig was Director of the Instutute for Learning and Teaching at the University of Massachusetts. Other professional experience includes Executive Assistant to the Commissioner, U.S. O. E.; Director, Division of Equal Educational Opportunities, U.S.O.E.; and Superintendent, Mt. Greylock Regional School District, Williamstown, Massachusetts. Dr. Anrig has numerous publications to his credit, some of which include "Introduction," *Six Crucial Issues in Education* (1972); "What's Needed for Quality Integrated Education?," *School Management* (March, 1972); and two guest editorials, *Early Years Magazine* (1971).

JOHN W. PORTER, Superintendent of Public Instruction in Michigan, has been a director of the State College Loan-Scholarship Program, a university professor and the Associate Superintendent of the Bureau of Higher Education in the Michigan Department of Education. Current and past professional affiliations include MEA, NEA, MASA, American Education Research Association and Phi Delta Kappa. In 1972, Dr. Porter served on the Commission for the Reform of Secondary Education and was appointed by President Nixon to the Commission for Financing Post-Secondary Education; he is currently a member of the Board of Trustees of the National Urban League, Chairman of Task Force '74 on Secondary Education, and a member of the Education Commission of the States. Dr. Porter has received several honorary doctorates.

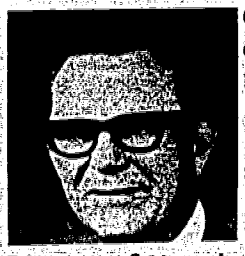
HOWARD B. CASMEY is presently Minnesota's State Commissioner of Education. Mr. Casmey received his B.A. from Concordia College (Minnesota) and his M.Ed. from the University of North Dakota. He has had educational experience as a teacher and administrator. His professional activities include membership in NEA, Minnesota State Commissioner's Advisory Council (1956-60), Minnesota State Legislative Commission (1962-64) and Western Division Legislative Chairman of Minnesota Education Association (1962-64).

GARVIN H. JOHNSTON, Mississippi's State Superintendent of Education, received a B.S. degree and an Ed.D. from the University of Southern Mississippi and an M.A. from the University of Alabama. Dr. Johnston has been a classroom teacher, elementary and high school principal and superintendent; he was also a supervisor in the State Department of Education and President of Pearl River Junior College. A past president of the Mississippi Education Association, he has served on the Board of Directors of the Mississippi Economic Council and on the State Advisory Committee for Vocational and Technical Education. Dr. Johnston is an active Mason, Baptist Deacon and Rotarian.



ARTHUR L. MALLORY is the Commissioner of Education for the State of Missouri. A native of Springfield, Missouri, Dr. Mallory received a B.S. in Education from Southwest Missouri State College and the M.Ed. and Ed.D. from the University of Missouri. Prior to becoming Commissioner of Education in 1971, he was History Supervisor in the University of Missouri Laboratory School, Assistant to the Superintendent of Columbia Public Schools, Assistant Superintendent of Columbia Public Schools, Assistant Superintendent of Parkway School District, Dean of the Evening division of the University of Missouri and President of Southwest Missouri State College.

DOLORES COLBURG, Montana's State Superintendent of Public Instruction, worked in private industry prior to graduating with honors from the University of Montana. Ms. Colburg later served as Administrative Assistant to the State Superintendent of Public Instruction and was elected State Superintendent in 1968. She is a member of the Board of Public Education, Board of Regents, State Library Commission, Teachers' Retirement System Board of Trustees and Educational Broadcasting Commission. She is a member of the Board of Directors of the Council of Chief State School Officers and serves as Vice Chairperson of both the Board of Directors of the Northwest Regional Educational Laboratory and the Mountain-Plains Education and Economic Development Program, Inc. Other memberships include AASA, AAUW, NOW, Montana Manpower Planning Advisory Council and Montana Special Olympics State Executive Committee (Education Chairperson) and several other state organizations.



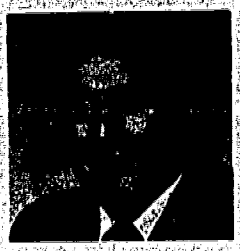
CECIL E. STANLEY, Commissioner of Education for Nebraska, received a B.A. degree from Nebraska Wesleyan University and an M.S. degree from Colorado A&M College. Mr. Stanley has been Assistant Commissioner of Education in Charge of Vocational Education, Division Coordinator and Director of Distributive Education, Assistant State Director of Vocational Education and State Supervisor for Distributive Education. Memberships include the Nebraska Schoolmasters Club, NEA, NSEA, Nebraska Business Education As-

sociation, Nebraska Council of School Administrators, Lincoln Chamber of Commerce, VFW, Phi Delta Kappa and AASA.

KENNETH H. HANSEN, Nevada's State Superintendent of Schools, received the B.A. and Ed.M. degrees from the University of Oklahoma and the Ph.D. from the University of Missouri. Dr. Hansen has been professor of Education at Western State College and Professor of Educational Administration at Washington State University. He has had a wide range of administrative experience. Dr. Hansen has written several books, among which are *Philosophy for American Education* and *Public Education in American Society;* he has also published in many professional bulletins, quarterlies and journals.

NEWELL J. PAIRE, a native of Keene, New Hampshire, holds the B.Ed. and M.Ed. degrees and the Doctorate in Humane Letters from Keene State College. Presently New Hampshire's Commissioner of Education, Dr. Paire has held various educational posts, including superintendent of schools and Deputy Commissioner of Education in his home state. A combat veteran of World War II, he retired from the U.S. Naval Reserve with the rank of Commander. Dr. Paire has held membership in Rotary, Lions Club and the Chamber of Commerce; he is also a member of Bektash Temple, the New Hampshire Education Association, AASA, and the American Legion.

FRED G. BURKE, newly appointed Commissioner of Education for the State of New Jersey, was Rhode Island's Commissioner of Education. He received a B.A. from Williams College, an M.A. and Ph.D. from Princeton and an honorary Doctorate of Law from Bryant College. Dr. Burke was formerly Dean of International Studies at State University of New York, Professor of Political Science at Syracuse University, Assistant Professor of Political Science at Ohio Wesleyan University and Consultant to the Kenya Government. He has written articles in the *Journal of African Administration* and *Ohio Wesleyan Magazine,* chapters in *African Socialism* and *Case Studies in Local Government* and a book, *Africa's Quest for Order* and *Sub-Saharan Africa.*



LEONARD J. DE LAYO is presently New Mexico's State Superintendent of Public Instruction. A native of New York City, Mr. De Layo earned his B.S. degree from the University of New Mexico and his M.A. degree from Columbia University. He is past president of the Council of Chief State School Officers, a member of NEA, AASA, New Mexico Congress of Parents and Teachers and is also involved in numerous civic activities. Mr. De Layo has been listed in *Who's Who in American Education, Who's Who in New Mexico, Who's Who in the West, Who's Who in the East and* Who's Who in America.

EWALD B. NYQUIST, New York's Commissioner of Education and President of the University of the State of New York, received undergraduate and graduate degrees from the University of Chicago. Dr. Nyquist, holds honorary doctorates from over 20 colleges and universities. He has served in various administrative capacities with Columbia University and the New York State Education Department. In 1970, Dr. Nyquist proposed the Regents External Degree Program which is now well established. He has been involved in accreditation commission, trusteeships and directorships. The recipient of many honors, Dr. Nyquist has written and spoken on such topics as open education and the state's role in urban education.

CRAIG PHILLIPS, North Carolina's State Superintendent of Public Instruction, received his education at UNC-Chapel Hill with A.B., M.A., and Ed.D. degrees. During his public school career, Dr. Phillips has been a teacher, principal, and superintendent of the Winston-Salem school system. He gave leadership in making the merger of the 75,000 pupil Charlotte-Mecklenburg system a working reality as its superintendent. Before being elected State Superintendent in 1968, he was administrative vice president of the Richardson Foundation in Greensboro, a foundation seeking ways to identify and develop creative leadership in education, government and business in North Carolina.

M. F. PETERSON, Superintendent of Public Instruction of the State of North Dakota, received a B.A. degree from Concordia College in Minnesota and an M.S. in Education degree from the University of North Dakota. Experienced in both elementary and secondary education, Mr. Peterson taught school law on the graduate level at the University of North Dakota. Prior to his present position, he was Deputy State Superintendent in his native North Dakota. He has written for various state and national publications. In addition to active membership in such organizations as Kiwanis, Phi Delta Kappa and AASA, Dr. Peterson has held several offices and served on various committees of Trinity Lutheran Church in Bismarck.

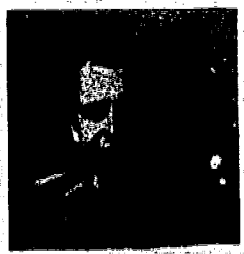
MARTIN W. ESSEX, State Superintendent of Public Instruction in Ohio, has served as a teacher, principal and superintendent of schools in Ohio and Michigan. Included among his service to American education are the presidency of AASA, chairmanship of the National Advisory Council for Vocational Education which led to the present Vocational Education Act, chairmanship of the Joint Council on Economic Education and chairmanship of the Advisory Council of the National Merit Scholarship Corporation. Currently he is serving as chairman of the first National Governance Study and president of the Council of Chief State School Officers. He is the only educator to be chosen by his peers to head each of the most prestigious school administrator organizations (AASA and CCSSO). His comparative education services include the direction of two studies in the USSR, an around the world study of education in the free world countries and services as consultant to the West Berlin government.

LESLIE R. FISHER, Oklahoma's Superintendent of Schools, received the B.S. degree from Southeastern State College (Oklahoma) and the Ed.M. and Ed.D. degrees from the University of Oklahoma. Dr. Fisher, after serving in the U.S. Navy, was a teacher, coach, principal and superintendent in his state's public schools. Civic and educational recognitions include outstanding citizen in Moore, Oklahoma (1961-63 and 1968), "Certificate of Special Merit" awarded by the

OASA (1966) and State Chairman for the Education Division of the U.S. Savings Bond Program. He is a member of AASA, NEA, the Oklahoma State Board of Vocational Education, NASE, the Board of Regents of Oklahoma Colleges and other educational organizations.

JESSE FASOLD, Oregon's Superintendent of Public Instruction is a graduate of Colorado State College, the University of Colorado and the University of Oregon. He is a member of Phi Delta Kappa, Oregon Education Association, National Education Association, and the American Association of School Administrators and numerous other professional organizations. From elementary school teacher to superintendent his career has made him a proven educational leader.

JOHN C. PITTENGER, Secretary of Education in Pennsylvania, is introduced by Governor Milton J. Schapp as "the Ralph Nader of education in the Commonwealth." A lawyer and former legislator, Mr. Pittenger was graduated from Harvard College and Harvard Law School. He was a Frank Knox Fellow at the London School of Economics before serving in the U.S. Army. He has taught at Harvard and Franklin and Marshall, and is co-author, with Henry Bragdon, of *The Pursuit of Justice*.



RAMON A. CRUZ APONTE, Puerto Rico's Superintendent of Schools, graduated from the University of Puerto Rico, University of Florida (M.A.), and the University of North Carolina (Ed.D). His wide professional leadership has lead him to be the vice president of the Puerto Rican Teacher's Association, the director of the Pilot Project for Preparation of Teacher Aids in 1966, and a member of the Task Committee for a Comprehensive Planning of Higher Education in the Council of Higher Education, 1969-71. From elementary school teacher in 1945 to the present Secretary of education for Puerto Rico, he is a proven educational leader.

ARTHUR PONTARELLI, Executive Associate Commissioner, is Acting Commissioner of Education for Rhode Island. He is a graduate of Rhode Island College (Ed.B.), Boston University (Ed.M.) and Ohio State University (ASTP). His career spans numerous positions from teacher, superintendent of teacher education and certification to executive assistant commissioner. He is a state representative member of the College Entrance Examination Board, the Rhode Island Association of School Supervisors, the Rhode Island Principals Association, and the College Alumni Association.

CYRIL B. BUSBEE is presently South Carolina's State Superintendent of Education. A native of Aiken County, South Carolina, Dr. Busbee received his bachelor's and master's degrees from the University of South Carolina. The University of South Carolina and Wofford College awarded him honorary Doctor of Law degrees. He serves as administrative officer to the State Board of Education and ex-officio member of the Boards of Trustees of the University of South Carolina, Winthrop College and the Citadel and of the Educational Television Commission and the Technical and Comprehensive Education Board. Dr. Busbee is a member of the Steering Committee of the Education Commission of the States.

DON BARNHART, Superintendent of Public Instruction for the State of South Dakota, is a native of Mitchell, South Dakota. Dr. Barnhart has been a high school teacher, an elementary principal and a school superintendent. For two years, he was director of one of 10 pilot projects in the nation on dropout prevention. His educational background includes a bachelor's degree from Dakota Wesleyan and a master's degree and Ed.D. from the University of South Dakota. Dr. Barnhart has been State Superintendent since January, 1971.

BENJAMIN E. CARMICHAEL, Commissioner of Tennessee State Department of Education from the position of Director of the Appalachia Education Laboratory, Charleston, West Virginia. He was Superintendent of the Chattanooga Public Schools prior to being Director of the Appalachia Education Laboratory. Dr. Carmichael holds the B.S. and M.Ed. degrees from the University of Tennessee and a Ph.D. from George Peabody College. He has been a member of the Advisory Committee for the Civil Rights Commission's Study on Racial Isolation, the Survey of Elementary Education in Brazil and the review committees for the Equal Education Projects. At present he is engaged in activities of AASA, ETS, the Education Commission of the States and holds membership in the American Educational Research Association and Phi Delta Kappa.

M. L. BROCKETTE is the Texas Commissioner of Education. He received his A.B. degree from Southwestern University and his M.A. and Ed.D. degrees from Baylor University. As an elementary school teacher, principal, and superintendent of schools his career spans forty years of outstanding educational leadership. Mr. Brockette is a member of the NEA, AASA, the Texas State Teachers Association, president of School Masters Association, and president of the Texas Association of County Superintendents. As a community leader he is past president of the Rotary Club and Junior Chamber of Commerce and Chairman of the Hill County Chapter of National Foundation for Infantile Paralysis.

WALTER D. TALBOT is Utah's State Superintendent of Public Instruction. A native of Utah, Dr. Talbot graduated from Panguitch High School and received an Associate of Science degree from Weber State College. Following this, degrees were earned at Utah State University (B.A. and Ed.D., M.S. from the University of Utah) and the additional study was pursued at UCLA and the University of Pennsylvania. Dr. Talbot's educational experience has included Professor and Chairman of Educational Administration, Brigham Young University; visiting professor at the Utah State University and Kansas State University, and Deputy State Superintendent for Administration. He has also taught and served in administrative positions in elementary and secondary schools of his state.

ROBERT A. WITHEY, Commissioner of Education for Vermont, was educated at Rutgers University where he received his B.S. and master's degrees. Mr. Withey has served in various educational capacities, among which are Deputy Commissioner for Learning Services (Vermont), Assistant Director of Secondary Education (New Jersey), Coordinator of NDEA (New Jersey) and NDEA Consultant in Guidance and Testing. He is a member of Phi Delta Kappa, NEA, VEA, VSSDA, VSA, NESA and serves on Vermont's Retirement Trustees, Bicentennial Commission and Post-Secondary Commission. Mr. Withey has written for numerous professional publications and has received several awards and honors.

WOODROW W. WILKERSON, Virginia's State Superinendent of Public Instruction, is a native Virginian. Dr. Wilkerson received a B.A. degree from Hampden-Sydney College, an M.A. degree from the College of William and Mary and his doctorate from the University of Maryland. After beginning his career as a teacher and later as principal, he joined the State Department of Education staff where he served as Assistant Supervisor of Secondary Education, Supervisor of Secondary Education, Teacher Education Director and Director of Secondary Education. Dr. Wilkerson is a past president of the National Association of State Supervisors and Directors of Secondary Education. He is currently a member of the Virginia Council of Higher Education, a member of the Board of Directors of the National Laboratory for Higher Education, and a Commissioner of the Education Commission of the States.

HAROLD C. HAIZLIP is Commissioner of Education for the U.S. Virgin Islands' Department of Education. Dr. Haizlip began his early education in Washington, D.C., later earning a B.A. degree from Amherst College. After receiving the M.A.T. degree from the Harvard Graduate School of Arts and Sciences, he continued his studies to earn the Ed.D. degree from Harvard's Graduate School of Education. He began his education career in the Wellesley, Massachusetts High School as an English teacher. Dr. Haizlip has served as education director of the official poverty program for Boston and was named one of the "Ten Outstanding Men" of that city in 1964. He has also been vice president of the Harvard Graduate School of Education.

FRANK B. BROUILLET is Washington State Superintendent of Public Instruction. Through his common school and college career in Washington, Dr. Brouillet was honored as both an outstanding athlete and academician. He received the B.A. degree, bachelor of education, and master's degree in economics from the University of Puget Sound. He earned his Doctor of Education from the University of Washington. From 1956 until his election as state superintendent in 1972, Dr. Brouillet served in the state legislature. During that time he served as caucus chairman, ranking member on the House Appropriations Committee, and for ten years was chairman of the Joint House/Senate Committee on Education. Experience includes public school and higher education teaching and administration.

BARBARA SIZEMORE is superintendent of the District of Columbia schools. She received a B.A. degree and M.A. degree from Northwestern University and is a candidate for a Ph.D. from the University of Chicago. Her professional experience spans a career of teacher, principal, and superintendent. She has been a consultant to the National Urban Coalition, Education Task Force, the State Commission on Undergraduate Education in the Education of Teachers, the AASA National Convention Planning Committee of 1973 and numerous school districts, conferences, and foundations. She served as AASA Associate Secretary prior to her present position.

DANIEL B. TAYLOR, West Virginia's Superintendent of Schools, is a native of Connellsville, Pennsylvania. He has the B.A. degree from the University of Iowa and the M.A. and Ed.D. from West Virginia University. Dr. Taylor has taught in Iowa, has been in administration in New Jersey and has served as a superintendent of the public schools in West Virginia. Active in professional organizations, Dr. Taylor is a past president of the West Virginia Association of School Administrators and has served on several committees of the U.S. Office of Education. He is a veteran of the Korean conflict, having served in the U.S. Army. Dr. Taylor has been active in numerous civic and charitable organizations in each of the communities he has served.

BARBARA STORCK THOMPSON, Wisconsin's State Superintendent of Public Instruction, is a frequent speaker for civic groups, parent-teacher groups, professional organizations, colleges and universities and school groups. Dr. Thompson received the B.S. degree from Wisconsin State University and the M.S. and Ph.D. from the University of Wisconsin. She has served as a college instructor, curriculum coordinator, supervisor of schools, principal, state coordinator in the State Department of Public Instruction and instructor in Educational Administration at the University of Wisconsin. Included among present professional memberships are NCAWE, ASCD, DESP, NEA and Pi Lambda Theta.

ROBERT G. SCHRADER, a native of Colorado, is Superintendent of Public Instruction for Wyoming. After serving in the U.S. Marine Corps during the Korean conflict, Dr. Schrader attended Westminster College and Park College in Missouri. He has served Wyoming as teacher, principal and superintendent, having earned both his master's degree and his doctorate from the University of Wyoming, where he also taught school finance. Professional activities include membership in the Education Commission of the States, AASA, Wyoming Association of School Administrators, Phi Delta Kappa and listing in *Who's Who in America* and *Who's Who in the West*.

BRYAN HANSFORD is the Executive Secretary of the Council of Chief State School Officers in Washington, D.C. He had served previously as the commissioner of education in Colorado. He has also held the positions of high school teacher and principal, superintendent, professor of education, and deputy superintendent of public instruction. He is a past president of the Council of Chief State School Officers, and has served on several national and regional advisory boards for organizations and agencies interested in promoting education as well as writing and speaking extensively in the field of education. He received his B.S. degree from Southwest Missouri, his M.Ed. and Ed.D. degrees from the University of Missouri.

MERE T. BETHAM, Director of Education for American Samoa, received her B.A. at Geneva College, Beaver Falls, Pennsylvania. She completed high school with the first graduating class of the high school in American Samoa. She will receive her M.A. in school administration from USC in Los Angeles. Her experience has been as a teacher, vice principal, principal, head of secondary education, deputy director of education and in her present position. She is a native of American Samoa. She was deeply involved in the development of educational television in American Samoa, the world's most complete and elaborate educational television experiment.

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