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**ABSTRACT**

Because technically oriented nations are spending billions of dollars on research and development, by 1980 school administrators will be operating in a society saturated with new information and devices to handle it (i.e., computer-based terminals in homes, offices, and schools hooked up to telephones, videos, and radios). However, the pressing need for professional and technical talent to man the information devices will remain to be satisfied. Through professional management training, educational leadership must master the new management techniques and apply them to education.

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## AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS

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National Committee for Support of the  
Public Schools

### WHAT IS THE FUTURE ROLE OF THE SCHOOL ADMINISTRATOR ?

As this program testifies, we are beginning to take prophesy with increasing seriousness. I believe the reason for this is our increasing ability to influence the future through technology. Gaston Berger, former Minister of Education in France, stated the situation eloquently: "Day before yesterday we obeyed Nature; yesterday we were her partner; tomorrow we will be her master, responsible for her well-being as well as our own, so great is the power which science and technology bestows upon us."

At the same time, like Baron von Frankenstein or the Sorcerer's Apprentice, we are frightened by the prospects of our power. Even something as rational as the Rockefeller Brothers Fund Report on Education reflects this sense of foreboding: "The heart of the matter is that we are moving with headlong speed into a new phase of man's long struggle to control his environment, a phase beside which the industrial revolution may appear a modest alteration in human affairs.

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"Nuclear energy, exploration of space, revolutionary studies of brain functioning, important new work on the living cell -- all point to changes in our lives so startling as to test to the utmost our adaptive capacities, our stability and our wisdom."

Professor Oscar Handlin of Harvard suggests that the awe inspiring possibilities of the new machine systems awaken in us an instinctual fear expressed in the Prometheus myth or the story of the tree of knowledge in the Garden of Eden. Throughout history ~~we~~ have expected to pay a great price for any great increase in power and well-being.

Before I go any further, let me make one point clear. Too many discussions of technology bog down in the uncertain boundary between software and hardware; between the programmer, the program and the machine which carries the program. By technique I mean technology as well as that cluster of rational practices by which one uses technology. Now with definitions behind us, let me give you my own position. I believe it is not technology but the control of it which should concern us whether in education, ecology or war; and second, that we can use technique to control technique.

As a preface, let me give you an interesting group prediction. The Board of Directors of the National Committee for Support of the Public Schools (which includes such friends of education as Frank Keppel) has set forth a number of predictions on which its planning is ~~based~~ based. These are:

1. A continued loss of public confidence in the leadership of the public schools.
2. Increased competition with the public school system from less traditional forms of schools and schooling, although the National Committee does not believe the voucher system will be adopted.
3. Increased public pressure for change on school leadership.
4. This next one is not quite so obvious. As the issues in education grow increasingly complex and beyond the understanding of the general public, intelligent public participation in school affairs will decline. As a result two things will happen: public support for public schools will decline along with participation; and, since normal procedures for public participation will be utilized less, more militant groups will form to crash through by confrontation.

The final prediction by the National Committee Board is that the key decisions in education will not be made at the Federal level (as so many of them were in the 1960's), but at the state and local level with the Federal Government responding rather than initiating programs and ideas. President Nixon's State of the Union Message has since given impetus to this last prediction.

The issue of public confidence is the key. Personally, I believe public education has done a better job in the last decade than in any other decade in our history. However, expectations have outpaced performance -- and the result can be disasterous for public education unless the situation is corrected. Traditionally in America education has been looked upon almost as a magic cure-all, the panacea for many of our most insoluble social problems. In the 1960's we looked to education to cure problems of racial inequality and human decay in urban areas. As a result of education's failure to fulfill expectations as unrealistic as these, the public has been disappointed in public education.

Therefore, my first prediction (and really advice) is that public education would do well to more precisely define a role which it can realistically be expected to fulfill. With the growing emphasis on accountability for all our institutions whether public or private, government or business, public education will certainly show up in a much more favorable light if it is held accountable for more precise, realistic goals.

My second prediction, and it is a fairly obviously one, is that you will have a number of rather remarkable new techniques to help you achieve your goals in the 1970's.

For example, we will certainly see a continuation of the information explosion. Recently information has been doubling every seven to nine years due to the tens of billions being spent on research and development by the technical nations. This means in seven to nine years there will be twice as much information available to us as now; by the year 2000 anywhere from eight to sixteen times as much information.

A logical deduction from this is that schools will have an increasingly difficult time keeping up with current information. Increasingly, we will have to resort to teaching students information search strategies rather than the information itself. And because of the rapid obsolescence of teachers due to the pace of information, schools will have to resort increasingly to the use of self-study by students to stay abreast of knowledge. It is interesting to note that major critics of public education such as Charles Silverman urge greater self-study or independent study for students for an entirely different reason. However, the basic premise is valid for a number of reasons: self-study can be more economical than traditional classroom instruction; and the individualized aspects of self-study are more in line with the results of recent research on learning theory.

One of the leading men in learning theory, Jean Piaget, holds that the child is the principal agent of his own learning, and that he will not really learn anything unless it helps extend, modify and refine his own unique mental model of the world.

Since each child's model is in a state of development different from every other child's, what happens in the classroom cannot be bound to a uniform curriculum, according to Piaget.

This philosophy places trust in the child's capacity to organize his own logically ordered, if episodic and superficially haphazard learning program, given the freedom to do so.

Typically, the pupil moves about an informal classroom at will, working or playing at whatever activity he desires. He is expected to do a full amount of study, but once given the assignment can do it whenever he wishes. Many of you know this as individually prescribed or individualized instruction.

To administer the complexities of individualized instruction, I believe you will have available increasingly sophisticated management techniques and technology. But more on that later.

A very powerful new tool may also be made available to you as a result of the work being done at a number of major universities on chemically electrically-induced learning.

Learned responses have actually been transferred chemically between living creatures. Although this seems shocking, I think few of us would deny the need for improved intelligence to meet the tremendously complex challenges posed by this new world of science and technology. Once we believed man developed tools because he had a brain. Now anthropologists believe man developed a brain to utilize fully the tools he had made. If the pattern of man's evolution is to rise to the challenge of tool and technique, then we surely need now to develop a new dimension of mental power in order to cope with the new array of techniques available to us. Whether this need for improved mental power is met by new ways of learning such as self-study, or new technical or chemical aids to learning -- or both, I think none of us would deny that we need to know more than we presently do if we are to solve the problems we face.

A natural corollary to the proliferation of information is the proliferation of information conveying devices. In a society saturated with information we are witnessing a proliferation of devices aimed at making it easier to handle this information. The printing press discovered in the 15th century began this trend and accelerated it tremendously. Today we have a host of new information devices ranging from communications satellites and the computer to ever present radios, television, telephones and print media.

However, it is well to remember that many of these devices, particularly the computer, are still in a <sup>EARLY</sup> stage of development.

I predict computer-power will come out of its shell just as engine power did in the early 20th century when small electric motors, driven by a central generator at a remote location, began to proliferate in homes. Already there are over 100,000 computer-based terminals at remote locations in education, industry and factories connected to the power of large central computers. Predictions are common in the computer industry of approximately one million computer-based terminals available in the U.S. by 1975. And we are at a very early stage in the wide spread use of this development.

This development should have profound consequences for education, particularly when the capability of multi-channel or cassette television is married to the responsiveness and memory of the computer-based terminal. No stretch of imagination is required to predict that educational systems of individualized self-study will ride these vast information-conveying networks. Personally, I believe education initially will "piggy-back" existing systems used for other purposes, such as management information and school administration, with instruction being an additional, low cost "add-on" usage.

Another characteristic of these far flung information systems is that a certain size or "critical mass" is necessary to exploit their full potential. This seems generally true of most big technology. In order to achieve the critical mass necessary for "economies of scale" (and I believe major economies will be available to you through these systems) I predict we will see much greater use by educational institutions of regional or state-wide consortiums to pool resources and share usage.

Another natural corollary to the growth of science and technology will be a tremendous increase in the need for what Peter Drucker calls "knowledge workers". By 1980 the U. S. Department of Labor predicts professional and technical workers will actually out number blue-collar operatives in this advanced society of ours. Based on available data, the Bureau of Labor Statistics predicts by 1975 a shortage of over three-quarter million technicians, computer systems analysts, physicians, nurses and engineers. Such manpower shortages can either inhibit or make more costly the growth of the U. S. economy in both the public and private sectors.

At present, the U.S. does not have a single consistent manpower policy, but rather a constellation of manpower policies that have evolved in a largely "ad hoc" fashion. Some of our policies in the manpower area are contradictory. Others have outlived their usefulness.

However, if we are to meet successfully the challenge of the so-called Post-Industrial Era, those acts which constitute either through default or through active intent U. S. manpower policy must be better oriented toward the needs of public and private employers.

To help the nation better meet its manpower needs, leaders of some of our largest and most prestigious industrial and educational institutions are currently joining forces to set up The Manpower Institute. The Manpower Institute is based on the premise that planning human resource needs is as critical to our future success as is capital and facilities planning. The Institute's aims will be three-fold:

1. To assure appropriate action by education, industry and government to fill the nation's manpower needs;
2. To disseminate widely information on career opportunities in critical areas. The current Advertising Council program on Careers for Technicians is one such effort already in operation; and,
3. The Institute will support needed manpower research not being done elsewhere.

I predict this is the beginning of a much more systematic approach to occupational forecasting and appropriate action in the U.S. I believe the net result will be invaluable to vocational and technical educators who at present must foresee occupational futures "through a glass darkly". In fact, the entire educational community should benefit from a system which so clearly links national growth and welfare with the adequate development of our educational system.

Let me make one final prediction. In the long view of history, I believe the U.S. will be seen as a nation characterized by great political continuity and technical discontinuity which often results in tension between our social-political system and our technical systems. It is common to ask why our social progress does not match our technical progress. However, when these tensions exceed the stress limits of our system, we tend to improvise a series of expedient, ad hoc solutions often characterized as temporary -- but actually permanent. As a result, the larger our enterprises become in order to take advantage of new techniques and technologies, the less responsive they seem to the needs of their sponsors and clients, whether the institution be a large corporation, the federal government or a school system.

In retrospect, the greatest achievement of the American space program may not have been the technology developed -- but the ability to manage such a vast effort so that it was responsive to the goals of its sponsors (whether you agree with those goals or not).

Arnold Toynbee believes societies fall primarily because they cannot meet internal challenges. What had been their strength, carried to an extreme destroys them. America clearly leads the world in the use of technique. We have the largest, most productive and powerful technical system of any nation. However, we are all beginning to wonder who's in charge here -- things or people. Large organizations seem to have a life of their own so that they end up serving the interests of the organization rather than those of its clients. President Nixon is trying to make the machinery of government <sup>MORE</sup> responsive to the needs of the people. The heads of our large corporations are trying to make those bureaucratic machines responsive to the needs of the people. The problem is far from solved.

However, there are encouraging new management techniques which may help us control the massive bureaucracies growing up around us. Of overriding importance in these new management techniques is the ability to match the authority to make a decision with the responsibility to carry it out so that the administrator may be held truly accountable for the results of what he is expected to do.

The National Committee for Support of the Public Schools is increasingly aware of the public outcry for various steps to achieve this type of accountability in education -- such as de-centralization, performance contracting, and program planning and budgeting. To this list I would add professional management training. For this reason I applaud AASA's recent step in establishing the National Academy for School Executives under the able leadership of Dr. Grant Venn.

However, in the use of these new management techniques there are two imponderables or, from your point of view, challenges. One is how to adapt the new management techniques to education. In areas such as the space program we have seen the new management techniques successfully adapted to harness the great power of technology. However, these same new management techniques are only beginning to be applied to our schools. I believe that is one challenge.

The other is whether the incentive for applying new management techniques to make school systems more responsive to the needs of their clients -- will this incentive come from within the system or from outside? Those of us on the National Committee for Support of the Public Schools who are "loving critics" of our educational system hope and believe the incentives will come from within, from you -- its leaders.