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ABSTRACT

These proceedings consist of papers delivered at a conference on the development of a working partnership involving business, industry, and education. Included in the proceedings are the texts of the following papers: "Business Doing Business with Schools: Does It Make Cents and Sense," by Edward J. Meade, Jr.; "Twenty Years of Changing Values: Its Impact on Education and Support from the Private Sector," by Arthur H. White; "Each Partner Gains, No Partner Loses," by Donald R. Walker; "Education and Training: The Undefined Intersection," by Gordon Ambach; "Let's Do It Right the First Time Around," by William A. Southworth; "Educators to Join Government, Labor, Business Coalition in Rhode Island," by Arthur J. Markos; and "General Electric's Education Outreach," by Walter G. Keating. Concluding the proceedings is a summary of the presentations. (MN)

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Business - Industry - Education

Toward a Working Partnership

June 10,1982

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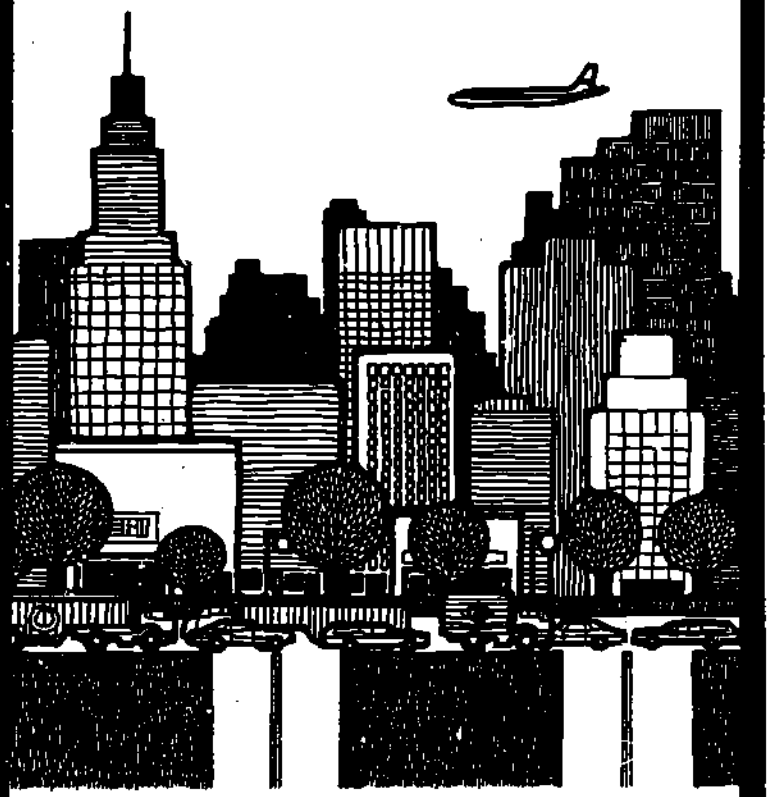
CONFERENCE PROCEEDINGS



Northeast Regional Exchange, Inc.

Proceedings

BUSINESS - INDUSTRY - EDUCATION

TOWARD A WORKING PARTNERSHIP

June 10, 1982

A Conference Sponsored by:

NORTHEAST REGIONAL EXCHANGE, INC.

~~101 Mill Road~~
34 Littleton Road
Chelmsford, MA 01824

THE NORTHEAST REGIONAL EXCHANGE, INC.

The Northeast Regional Exchange, Inc. (NEREX), a private, not-for-profit corporation, is a service agency that promotes educational equity and improvement. NEREX coordinates resources and sharing of information among the seven states of the Northeast based on an established set of state and regional priorities. Through NEREX, states are able to expand their available resource base and work through regional sharing efforts toward program improvement. The Northeast Regional Exchange is governed by a Board of Directors that includes the seven Chief State School Officers from the Northeast and eight representatives from a wide variety of education constituency groups in the region.

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Introduction to the Proceedings

The times call for state and local initiatives -- in economic policy, in community development, in education. The federal government has pulled back, withdrawing its financial support of local programs. That is a blessing in disguise, some say, because the rules and regulations that inevitably accompanied these funds tended to impose a standard program format on problems that cried out for recognition of local differences. Some of the rules and regulations, too, are gone. So it remains for those of us in the state capitols, in city halls and public schools, in the plants and factories and office buildings to take a fresh look at our problems and see what we can do about them.

Since we must work within the limits of local resources, it makes sense for all elements of our society to achieve common goals by combining resources and talents. In that spirit, this conference on partnerships between business and industry and education was convened.

From the six New England states and from New York came educational administrators, state legislators, school committee members, corporate executives, businessmen, state and local officials -- some 150 in all.

They heard several speakers describe existing partnerships between business and industry and education, primarily at the high school level, and what could be done to improve those arrangements.

They listened to the chief program officer for education from the Ford Foundation, and to a social and economic analyst whose firm continually reports on conditions in the U.S. They listened to two businessmen describe how they viewed such partnerships from the vantage point of the private sector. They listened to an economic development official from Rhode Island outline plans for public/private initiatives in education, and a director of a new business-supported council explain how the teaching of math and science skills in New Hampshire public schools can be improved. They listened to a state commissioner of education suggest that the question of where public education ends and privately-supported job training begins is an important question of economic policy still to be debated and resolved.

And during the one-day conference, they listened to each other, over lunch, during breaks, and at a reception following the program. It was a well-informed group, eager to share information about local policies and programs.

That, essentially, was the purpose of the conference. To foster the exchange of ideas among influential people from the Northeast whose states confront common social and economic problems -- some of which may be amenable to educational solutions through cooperative arrangements between business and industry and education.

It was intended to be -- and I think succeeded in being -- a conference where people gained a new outlook on the problem, identified some new resources (not the least of which were their fellow conferees), and, perhaps, set in motion some new initiatives.

For these reasons, I believe the proceedings should reach a larger audience. It makes sense to share ideas within the Northeast region. Some problems can be addressed on a regional basis; others must be dealt with on the state and local level. In any case it makes good sense to share our ideas, successes, mistakes, and experiences.

To that end, one of the functions of NEREX is arranging regional conferences on eductional problems that are found region-wide and have some history that can be shared. This is the first such conference, and certainly not the last.

Mark R. Shedd
Commissioner of Education, Connecticut
Chairman of the Board
Northeast Regional Exchange, Inc.

In the keynote address, Dr. Meade summarizes the programs jointly sponsored by business and industry and the public schools. According to Gordon Ambach, New York State Commissioner of Education, and a fellow panelist at the conference, it is "as comprehensive a description of such connections as you can get, including some historical perspective."

Dr. Meade reviews what business and industry expect from the public school system and, conversely, what the public school system expects from business and industry. He is optimistic about collaboration in the future because, among other reasons, "educational leadership is either more sophisticated or less defensive." He notes several areas in which collaborative programs fall short reaching the "underclass", for example, and concentrating too much on making students employable rather than literate, employable, and active in civic affairs. He concludes that the public school system itself is the best possible arrangement between business and industry and education.

DR. EDWARD J. MEADE has been Program Officer in charge of Education Projects for the Ford Foundation since 1966, and has served as an advisor to several U.S. Commissioners of Education.

BUSINESS DOING BUSINESS WITH SCHOOLS: DOES IT MAKE CENTS AND SENSE?

I'm going to give you a set of reactions -- my reactions -- about what I see is the relationship between business and industry and education today.

To put matters into some kind of perspective, let me briefly and generally remind you about what society expects the public school to produce, what we expect of business and industry, and what one means to the other. Later I will talk about some specific examples of both old and new arrangements between business and industry and education.

General Expectations

First, we expect our schools to somehow produce a generally literate person. Second, we expect our schools to nurture whatever self-initiative or self-interest an individual possesses. Third, we expect our schools to produce persons who will go on to further learning, to prepare for the academic vocation, if you will. Fourth, we expect our schools to prepare people to become active citizens in a democratic society. Indeed, some people would agree that this is the only unique, or distinct, function of a public school as opposed to other kinds of schools. Finally, and these outcomes are not in any particular order, we expect our schools to prepare people for employment and for work and to participate and compete in the world of commerce.

What do we expect of business and industry? First, we expect business and industry to provide us goods and services certainly, but more to the point, useful goods and services. Still, you and I can point to examples of goods and services that one could hardly call useful, yet a market exists for them. That is simply part and parcel of a relatively free enterprise system. Second, and in our kind of economic order, we expect business and industry to make a return on their investments, to make money on the risks they take in order to provide us with goods and services. Third, we expect business and industry to contribute to a climate that nutures free enterprise and an open market. Fourth, and finally, we expect business and industry to contribute to the well-being of society, for without a robust, free, and fairly stable society overall, a healthy business and industrial sector cannot survive.

Schools: What Business and Industry Expect

What do we believe business and industry might expect from our schools?

At the very least, they might expect that schools will produce knowledgeable consumers of goods and services, and consumers who have the capacity to consume. That is, the products of our schools should possess the wherewithal to be able to make choices and to purchase a range of goods and services. In short, consumers should not only have the capacity to consume, but they should be well enough informed to be responsible consumers.

Business and industry also expect schools to produce capable employees on the one hand, and to produce entrepreneurs -- people who can create work, who can create jobs, on the other. I'll come back to this idea later.

Further, business and industry expect schools to produce citizens who will contribute to stable economic and political conditions, who will contribute in the most liberal sense -- if I may be permitted to use that word -- to the overall stability of society, and to its capacity to change and evolve responsibility. To my way of thinking, that is often a not explicit, but nonetheless, real expectation of schooling by business and industry.

Finally, more generally, they expect our schools to produce overall good citizens -- responsible, informed, and capable of participating in civic affairs and contributing to the overall welfare of our society.

Business and Industry: What Schools Expect

What do we think schools might expect from business and industry?

Obviously, education expects business and industry to be supportive, in the positive sense, to the idea that the public education system can only be sustained through public funding -- through taxes. Put another way, business and industry should support the concept that public schools receive a responsible and adequate share of the public dollar.

Education also expects that students are able to get knowledge from business and industry about the reality of work and jobs. It is not helpful for business and industry to paint beautiful pictures of what it's like to work as a whatever or to work in the XYZ Corporation when those are not the facts. That would be akin to some college catalogs which paint equally beautiful, and equally unrealistic pictures of their institutions.

Finally, education expects business and industry to give schools assistance in areas in which business and industry have particular strengths, particular expertise, as for example, forms of vocational training for specific jobs, management skills in non-instructional areas.

Optimistic About Prospects for Collaboration

Today, I think the climate for collaboration between business and industry and education is better than it has been for the past few years. I don't know quite why, but there are obvious signs.

Increasingly I've heard comments from sources outside education that suggest people are less likely to blame education for all ills and are therefore more likely to come to its assistance. These people are concerned that perhaps we have required the schools to do too much. Have we put burdens on the schools that belong elsewhere? Such questions will lead to a healthy re-examination of the role of schools and the contributions to education that can be made by other elements of society.

I certainly believe that both management and labor in education stand at points in their evolution where they have a better understanding of the relationships they must maintain, one to another. The conditions for productive collaboration between these major elements of the education industry, if you will, have improved over the years, and they are willing to work together. I say this because there are some pockets in the country where people believe that what we have in our schools today is a constant war between employer and employee. That's just not true in the general sense.

I also believe that leadership in the schools is both more sophisticated and less defensive. It is more open and more secure in the knowledge that our system of public schools is not perfect in any complete sense. Also, educators are more willing to reach out and to receive help and assistance from a variety of sources. In short, school leaders are in a far more cooperative mode than most people realize.

I think also that business and industry are a little more sophisticated about the schools. Schools are no longer described -- as they were in the late 19th century -- as something akin to a factory. I think enlightened corporate and labor leaders today know that that is not what schools are like. Rather, they see them as distinctly different, given the responsibilities and missions they have.

Patterns of Partnership

Let me describe to you what I see as some old and new patterns of partnership. Many of the partnerships I will talk about are successes. Many also are failures. Most are both for it is difficult to name what is the magic bullet, the special innovation or the panacea that works well for all partnerships, or that works well in all places. Still, most of them have elements that can be useful in a variety of situations and contexts.

Let me first talk about transitional patterns of partnership -- patterns that people never think about as school-business collaboration, even though these patterns have long been a part of the history of American public education. It is less true now, however, than it has been in the past.

One of the ways business and industry have collaborated with schools is by participating on school boards. It used to be in a corporation's enlightened self-interest to see to it that one of its executives stood for election or was considered for appointment to the local school board. You don't see as much of that as you once did. I don't know whether that's for better or worse, but that seems to be the case in many communities.

There is a city on the West Coast, for example, which is dominated by two large businesses. These two corporations will rise or fall on the capacity of the people in that city to do the work in their plants and offices. During the last ten years there has not been any concentrated effort in either of these corporations to encourage any one of their leaders to stand for the school board. Still, there is a person from one corporation on the board, a machinist, and he got there because of his own sense of civic responsibility. I would think it to be in the self-interest of such corporations that depend heavily on people in a community for their economic well-being to help shape and support the local public schools in that community.

Another traditional way for business and industry to collaborate with schools is the citizen committee or commission. Those of you who have been, or are now, superintendents of schools remember from time to time the need for blue ribbon commissions. In the old days, that always meant "We know what we want to do -- pass the bond issue, build a new building, whatever. What we need is your support."

There is now emerging a different kind of task force or commission that I see around the country. It sometimes comes out of crisis, as in the case of Chicago where the school system was faced with bankruptcy. An organization called Chicago United, comprised of executives from Chicago's business and industry, studied the school system and made many solid recommendations to

improve its overall management. This is a good example of taking good advice and expertise from business and industry and applying it appropriately to the management of a large public business, the Chicago public school system.

Another example of collaboration is what I will call local education funds. In Pittsburgh, for example, there is an organization called the Allegheny Conference for Community Development. Part of its agenda is to establish a fund from which is made modest -- and I mean modest -- grants to school teachers, something in the neighborhood of $300-$400. These grants are awarded on the basis of proposals put forward by individual teachers, which subsequently are reviewed and recommended by other teachers and conference staff. The aim is simple: to give teachers who have ideas for improving their work and their schools the funds to try them out. As seasoned school officials know, it is highly unlikely within the context of public funding for schools to allow for such modest initiative awards.

There is a similar venture in San Francisco through a free-standing organization called the San Francisco Education Fund. Last year it granted over $150,000 to teachers, again in small grants. This fund doesn't intend to change the system with these grants. Rather, it intends to give modest support to teachers, principals, counselors, etc. who have ideas about improving education in their classrooms and their schools.

Many of you may know about the Bank of America program in California which granted $1 million this year, and $1 million for each of the past three years, for local school projects in California. By doing so the Bank of America, too, is making a distinctive contribution to education at the level where teaching and learning take place, the schoolhouse.

Still another endeavor is in Memphis, where firms such as Holiday Inns, Federal Express, and Plough Chemical have taken the initiative in collaboration with the school system to improve various aspects of the Memphis public schools, particularly their ability to hold and to attract students who might otherwise have left the public schools. On behalf of the public schools, they have mounted a campaign to give more information to the citizens of Memphis about the schools, their programs, their initiatives, their improvements. They get out important information about the good things going on in Memphis schools and see to it that the people hear about them.

Recently, an organization of large city school systems, the Council of Great City Schools, has announced a program to grant loans, albeit modest, to member school systems to enable teams of business and labor executives to conduct management studies on various non-instructed activities. These teams deal with subjects like food service, maintenance, accounting, -- services, if you will, that are as typical of any big city school system just as they are of any big industry. The program is not intending that such studies by business people will change schools and classrooms. Instead they are bringing corporate experience and expertise in areas that are common to them and to large public businesses, in this instance, the urban school system.

Programs for Students

Let me now turn to some direct student help. Many of these are not widely recognized, although they have been going on for a long time. Let me, therefore, remind all of you about some alliances we've had for years.

Junior Achievement -- that's a program that has been around for a long time. I don't know much about its overall record but it has been very productive in some areas. Let's not forget that there are, and have been, good, sustained arrangements between schools and business in the past, Junior Achievement being one.

Cooperative education is another. There is a national study underway, being conducted by the National Child Labor Committee about cooperative education at the high school level. The study is looking at cooperative education projects that have endured, why they have, how well they are doing, what kinds of student population are involved, what kinds of schools, and what types of business arrangements are entered into. Cooperative education has been around for a long time. It is important to both business and industry, and to the schools that are engaged in it.

There are, of course, more recent examples of direct student help. Jobs for America's Graduates is a program that started in Delaware. It focuses on improving the guidance and counseling activities for high school students who are not going on to college or job training, the kind of youngster who often passes through school un-noticed because he or she is not a disciplinary problem, and just never gets to see a guidance counselor. If it does nothing else, this program offers these kids some guidance and help to jobs and careers.

I'd also like to point out there has been, and continues to be, a lot of student help by business and industry that in no way, shape or form is fostered in any formal sense by either business and industry or the schools. Traditionally, high school youth have taken a good deal of initiative to get work while they are going to school. Recently I visited some high schools in Detroit where some 60 percent of the kids had close to full time jobs while going to high school full time. Some of it was organized work, in the sense of going to a job. Some of it was entrepenuerial -- selling papers on street corners, that sort of thing. The students were working, and neither business and industry or the schools did anything to arrange it.

A lot of kids across the country are also working as volunteers in hospitals, museums, day care centers, and other such places. Often they don't get paid for it. They just work there. They are learning to work. Indeed, they <u>are</u> working, and yet neither those agencies or the schools have formally fostered that kind of work. Maybe if such work were formally arranged, it wouldn't be as good, but I've got to believe it would be.

In short, there are lots of ways that kids are being introduced to the world of work today and many of them have been going on for a long time, and, often, much of it has been going on without our knowledge or, what's worse, without our guidance and help.

Adopt-A-School

We turn now to more specific and more popular kinds of programs for youth today. I almost want to call this section "Adopt-A-School--Whatever That Means."

I've seen Adopt-A-School mean nothing more than once a year ten guys come in from local business and industry and talk to students about jobs -- what it's like to work in an insurance company or a machine shop, or what it's like to work as a police officer. Sometimes it takes the form of XYZ Corporation adopting the East Overshoe High School. It organizes a career day or brings seniors or juniors over for a quick trip through the plant. But, I've also seen real adoption - rich collaboration and engagement between school staff and business persons in a school context.

There are more specific and more substantive school-business partnership programs. For example, during the last ten years a program that started in New York City, the Executive High School Internships of America, has been placing young people with executives in a number of businesses and industries to help students begin to understand what it's like in the hallowed halls of management. Such an internship program -- and there are many of them across the country -- is a far cry from just kids filling a job. Rather, these interns get a fuller sense of the enterprise, the decision making, and the like.

Other industries are working with specific schools from a position of even more enlightened self-interest. They offer internships as a means of identifying future managerial talent. I talked to one corporate executive who used the analogy of major league sports teams. "They hustle the colleges, we're going to hustle the high schools," he said. "We're going out there and find promising people for our industry."

Still other industries are working with specific high schools to arrange research opportunities for students. This is not research in the highly refined sense, but it does give kids some exposure to new industries like the high technology industry or the bio-medical industry. Such arrangements encourage these kids to go on and study more. They are a stimulation, if you will, to further education. And perhaps at the end of their studies, those students will come back to work for the corporation as a trained biologist or a computer engineer.

I might add that these research opportunities are useful for corporate people too. These kids, as kids are wont to do, ask those dumb questions, those simple questions that are often difficult to answer and which force a biologist or engineer to recall his basic science. These kids ask those simple questions because they are not yet tarnished or varnished by the veneers of highly technical education.

Some business and industry are giving things to schools. Often, it is in the best interest of each side for equipment to be donated to schools. If a corporation is heavily into technology and plans to hire graduates from a school that doesn't have that technology, then it at least makes sense to acquaint the kids with that technology. It can be done through taxes, so the school can buy the equipment, or through direct equipment donation by a corporation. Sometimes

the equipment provided is a hand-me-down, you know, a generation of a computer that the company no longer uses. Even so, such a computer is probably still well ahead of the technology that most schools have.

Equipment doesn't come by itself. I've spent some time in schools where corporations that have donated equipment, particularly the high technology corporations, have also assigned people to train the students. Not to train them to become some specific kind of technician, but just to acquaint them with the technology.

There is another form of business and industry assigning people to go to work in the schools--the loaned out executive. For those so assigned it's a renewal, a reinvigoration for a lot of businessmen. In New York City the Economic Development Council has sent executives into the high schools to work on management problems. From the executives' point of view, it is a good assignment for they can bring their skills to a new business, so to speak. From the school's point of view, these businessmen are being educated about the complex business of running a large school system.

There are a good many similar pro bono activities underway in various corporations. Indeed, there are a few businesses where if you want to be an executive, you've got to give something to public service, and the schools area is a good place to do it.

Programs for Teachers

Finally, let me talk about business and industry programs for teachers. There have been, and continue to be, some such relationships that enable teachers who don't know what the real world is like to find out. It's done through workshops and seminars and internships.

Generally we are all worried about a growing shortage of math and science teachers -- how many there are, how good they are. Certainly those industries that rely on good math and science teachers ought to be finding ways and means to help them. One way to help is to allow teachers to engage in the work of their industries -- to understand the processes and to learn about the fancy technology used.

I think business and industry have a remarkable opportunity to take advantage of the fact that numbers of teachers have time during off-school months. Teacher salaries are falling further and further behind and they need extra income. Perhaps business and industry could provide them with summer employment. Teachers could not only contribute something to the corporation, but also learn more about how the subject they teach relates to industry. It would be a way to link business and industry with education through an appropriate tie, the teacher. After all, it is the teacher who is still very critical to the process of education.

Some firms are now providing scholarships for teachers which enables them to do studies that enrich their teaching. In turn, the teachers enrich the learning that kids take away from the classroom.

Some Outcomes

What are some of the outcomes resulting from these alliances between business and industry and education?

One of the more positive signs is that business and industry are increasingly realizing that good schools are necessary to the very vitality of society and certainly to the well-being of business and industry.

I'm talking about good schools here, schools that are doing their job, that have positive outcomes with students. Furthermore, if a product of a high school is a literate person, he or she can take advantage of business and industry training programs and is more likely to be employable and trainable for a job and a career.

I can't document this, but I was told there is some evidence that suggests that more literate graduates become employees who have a lower turn-over rate. I don't know quite why. Perhaps they are more secure about what they know, maybe they perform their jobs better than other employees. Whatever the reason, they turn over less, and those of you in business and industry know the costs incurred by a high turn-over rate among employees.

For small businesses, a good school obviously means less training. A graduate of a good school can take over his or her responsibilities on the job more quickly. Small businesses can't afford to train, so this characteristic of good school graduates is important to them.

Some of these programs between business and industry and education help both sides keep in touch. This is not unimportant. There's an awful lot of rhetoric on the business side and on the school side. "They don't understand what we do," say the schools. "They don't understand what we need," says business and industry. These alliances help each other keep in touch.

These alliances also create a broader vision. Business and industry can better understand roles they can play to improve public school education. Indeed, there have been improvements in schools because of strong alliances with business and industry. Many of these schools now produce students who are more employable, more trainable, more able to go on to higher education, than graduates from other schools.

Cautions Along the Way

Let me now turn to some negatives. I can't document them per se, so let me call them cautions along the way to this wonderful world of collaboration.

It's typical of any project, including educational projects, to dominate and to distort the overall context in which it is taking place.

Some business-school collaborations are aimed at making students more employable. That's all to the good, but some of them are too narrowly focused on specific job skills and turn out people who are trained in a narrow band of skills without regard to general overall literacy.

Such efforts leave out a lot. They only train people for specific jobs, and not for work generally. I'm not saying people shouldn't be prepared for jobs, but a lot is being left out. In our understandable desire and deep need to fill jobs, there seems to be a tendency to overdo it and create programs in schools that are too utilitarian in the narrow sense of the word. I don't think we intended the general public schools to be training grounds for particular or specific jobs.

In other projects, there seems to be a short-sightedness about such things as social harmony or cooperative behavior. In the zeal to train kids in job skills, project directors forget that these students must somehow learn to live together in a harmonious society. I don't see attention being paid in business and school alliances to such issues.

Further, I don't see much attention being paid in these projects to teaching thinking and analytic skills, again because of an understandable drive to make kids more employable. While schools and business and industry are collaborating to make kids more employable, they also ought not to overlook this aspect of education. At least they should make sure that public funds for schools are sufficient to allow for these important long term skills to be attended to and developed.

Moving along, it is distressing to see what has happened to art programs in schools. They seem to be the first to go in hard times. I'm appalled that one of the major industries in this country, the entertainment industry, which relies on the teenage market for substantial amounts of income, has not seen fit to help the arts activities in schools.

Also, I don't see much direct attention being paid to what I said earlier may be the single unique function of public schools, namely, preparing people to be active, informed, participating citizens in this society. There seems to be an assumption that if a person is literate and employable, somehow that person will also be an active, informed, participating citizen. That is not necessarily the case. Students of history tell us that if a society had a literate, employable, skilled workforce, it doesn't necessarily follow that it had active, informed, participating citizens.

Finally, all of these relationships, whether they are successful or not, do not reach what some describe as the underclass. School and business and industry alliances are growing, but few, if any, are dealing with a certain number of our population who are distant from the rest of us. Few are substantively and productively helping these students.

The Ability to Work

I presume that a purpose of alliances between business and industry and education is to produce persons more able to work. At least it should be. I say "work" rather than "to get a job". Earlier, you remember, I said we've got to produce people in our schools who are both employees and entrepreneurs. It's the same idea.

A friend of mine once said, "There may be a shortage of jobs in this country, but there is no shortage of work." This country was made, in good measure, by people who did not have jobs. They either made their own jobs or their own work. It is important to have a work, rather than a job focus in these relationships, I think. If we do that, I think we will turn out better employees, because they will be better prepared to work, and more secure employees, because they will have something they can do regardless of the availability of specific jobs. It seems to me that in the long run it is more effective to have a school system that turns out people who can work and who can think and who are literate than it is for schools to be "training grounds" for specific businesses and industries.

Moreover, if we produce the kind of students who are indeed employable, literate, active in the community, we will have better consumers, more able consumers, more informed consumers. They also will be active citizens who know how to participate in ways that will improve and better the society. That's always good for business.

Regardless of the form and substance of these various school and business relationships, I would hope for another, very important outcome: a rebirth of a collaborative leadership from among the civic, corporate, labor, and educational elements in our society for the purpose of making our public schools even better and placing public education clearly amongst the top pritorities of the nation.

If we could strive for that, then all these interesting, important, useful partnerships and programs will be of even greater value, for they can only succeed in the full sense if there is a shared understanding that a healthy and viable public education system is the best possible arrangement we could have to assure both better business and industry and a better country and citizenry.

# # # #

Mr. White is more pessimistic about improving education through partnerships involving business and industry and education than Dr. Meade. He cites changes in demographic, economic, and social factors from 1950 to 1980 and their effect on education. He describes the attitudes held by 220 chief executive officers of leading U.S. corporations towards giving support to education at the secondary and college level, one of several findings from a survey his firm recently completed.

Mr. White lists a number of problems that discourage chief executive officers from offering direct support to public school/private sector projects, including a lack of evaluation to determine which projects warrant continued support and which do not. Finally, he offers suggestions that will improve the "context for giving."

ARTHUR H. WHITE is a Principal and Vice Chairman of the Board of Yankelovich, Skilly and White, Inc., a firm which conducts marketing and social research projects for business corporations, government agencies, and other organizations. He is a frequent speaker on public perceptions of social, economic, and political issues.

TWENTY YEARS OF CHANGING VALUES:

ITS IMPACT ON EDUCATION AND
SUPPORT FROM THE PRIVATE SECTOR

I want to say at the outset that I'm pleased to be here. I also feel a sense of emotional involvement being with a group like this, on a subject like this.

And the emotional involvement comes from the fact that I believe we are in a crisis with respect to the problems we are discussing today. I listened to Ed Meade, whom I've known for a long time and who is so well informed and so highly involved in the efforts being made to improve education in this country. I wish I could say I agree entirely with Ed's assessment. I'm afraid I'm more pessimistic than Ed about where we're at. Let me tell you why.

One of the things that makes me so concerned is what happened here in this very community -- Stamford, Connecticut. Stamford is a city of 100,000 with all kinds of resources. I've lived here 26 years now and have been deeply involved with the city all through that period. I know the resources this community has in its variety of people, in its natural resources, in its material resources. It's got it all.

And yet, in the last couple of months, a decision was made to reduce the school budget which was proposed by our new superintendent by about 8 percent, some $4 million out of a $50 million proposed budget. But it was the attitudes that came out in that whole discussion that were so disturbing, and the bitterness, which is the only way to describe it. We've never had it. This community has been very lucky in the last 25 years. We've never had that kind of wrenching discussion before. I don't think anybody is happy with the outcome. That's part of my concern.

I have another concern. I come to this kind of discussion with a firm commitment to public education. I had the happy experience of growing up in Boston, Massachusetts. during the Depression years. Dan YankelovicH and I -- Dan is my partner today -- both of us came from families suffering from the Depression. It was not an easy time either for our families or the city of Boston. But Dan and I were able to go to Boston Latin School. It gave us the opportunity to enjoy rich, full lives, for which we will be ever grateful. And it's made me a supporter of public education without equivocation.

But Boston Latin School today is suffering in a way that makes me very concerned. Hopefully, it is not going to go under. It has always had problems in trying to provide an extraordinary education to a very challenging group of talented young people, but today it must deal with other kinds of problems as well. I know of the struggle going on to keep Boston Latin School operating. And if any of you read the New York Times last Sunday about the Boston Public Schools, you must realize that when I say "crisis," I'm not alone in saying it. And that's what we've got to face up to.

Belief in the Capacity of State Government

I also bring to my emotional involvement with the topic before us today two other thoughts. The first is a belief in the states and their capacity to govern. I do considerable work at the state level. I head a state agency. I am prepared to defend the point of view that many state governments compare favorably to private sector organizations.

The second point is this. One of the things that really distresses me about the President's program is I think he is subjecting government as a force in our society to criticism of a kind that is making our problems in education more

severe. I could see in the discussion about the school's budget in this community a reflection of some of the things this President has said. He is saying, "The country is in trouble and the reason it is in trouble is because government is too big, too fat, too inefficient." I don't say he doesn't have some cause for criticizing government, but I think he has overdone it. And I think what is happening is going to cost us a lot. It's already costing us a lot wth respect to education.

Having explained why I feel emotionally involved in this topic, let me go on. I want to talk first about some changes in America that I think affect education deeply. Secondly, I want to talk about the crisis in private sector support, for all of our institutions, including education. Thirdly, I want to draw upon a study that my firm recently completed for the Council on Foundations in which we talked to 220 chief executive officers throughout this country. We asked them what they are trying to do to be responsive to the changing role of government in our society and the increasing demands on business. Finally, I'd like to add all that up and give you my thoughts on what we might do.

Major Changes in America

In terms of the big picture, we see four major areas of almost revolutionary change that affect education.

One is demographic. You are all familiar with the aging of our population. All I want to say about that is the facts are loud and clear. But consider this. In the 1950's, 3 out of 5 voters were parents of children; in 1980, that's down to 1 out of 5 and it's still shrinking. That means fewer voters are as interested in public education, or as supportive of it, as there were before.

A second area of change has to do with economics. We have seen a change in the role of America as an economic entity. When we started to do work, running around this country, talking to thousands of Americans in the late 1950's, America was the leader. Everybody talked with pride about the fact that we had won a war, that we had re-established our own business strength, our economic strength, and that we helped the rest of the world to get back on its feet. Too many of us forget the Marshall Plan, for example, and all that it meant. The Marshall Plan was something that happened in our lifetime. We helped the world re-establish its economic structure and come back with dignity. That was America. That was America as number one economically.

Well, America is still strong, but our perception of ourselves economically is not one of real strength. We are concerned about our productivity. We are concerned about our ability vis-a-vis the Japanese. We are concerned about our ability vis-a-vis the Germans, and other nations. We no longer have that feeling of growth, strength, and predominance that we had.

There's some evidence to support that concern. We no longer have the development of patents that we had back in those days. We have today a less creative, less innovative R & D capability. At least we are not doing it the way we did.

The third area of vital change concerns our international position. Again, when the United Nations began in the late 1940's, America was the leader. The UN would never have been created without us. We were strong and had the majority of nations with us. Now, we often stand virtually alone in the UN. There's no way to look upon our international position optimistically.

Old Values, New Values

Finally, there is the area of social values. We do most of our work in this area -- measuring the change in social values. I will just mention some differences between the old values that predominated in this country until the 1960's and the new values that came about in the 1960's and blossomed into a fullness and richness in the 1970's. We had a lot of fun measuring them.

This country has changed in the ways it thinks about all kinds of things. Specifically, one of the old values is a sense of sacrifice. We believed in sacrifice. We believed in working hard and sacrificing for a lot of things: for the future as opposed to the present, for members of our own family, for our community, for our employer, for our country. There was a tendency to feel that we as individuals had to do a lot of things for a lot of other people.

Came those 1960's and people in this wonderful country of ours sort of looked inside and said, "I'm not so sure. I want to do things for myself more than I want to do things for my mate." All of a sudden, divorce rates began to increase.

Parents in this country are also in difficulty. One of the reasons the aging of the population is such a problem for us is that people are less willing to sacrifice for their parents. The same thing goes for their own children. When we asked the American people, in studies we conducted for General Mills, what their plans were for their children, they used to say, "We're going to save so our kids can get an education and do better than we did." Three out of four parents would make such a statement. Now it's one out of four. Now they talk about their own needs for fulfillment, about meeting their own needs. They certainly don't plan to abandon their children, but the idea of sacrifice has changed.

The old values also embraced this pattern: you work hard, you marry someone of the opposite sex, you have two children. There was one way to live one's life. Not any more. What diversity! What an abundance of options! It makes our interviews a lot harder to code, I'll tell you.

Another old value is something I call orientation towards the future. One of our problems with the current inflation is that the American people are not saving for the future in the same way they did. Live more for today. Spend more now, on credit if necessary. Those are the new values.

I could go on with these, but I think you can sense the changes.

Impact on Education

Along came the mid-1970's and the American people with their new values suddenly realized that in order to live the full, rich life, they had to have an economic situation that made it possible. Two things happened in the mid-1970's that brought a crunch for the first time to the good life as typified by the new values: oil shortages and the recession. The American people realized they couldn't continue to have this cornucopia of more and more things, or to live for today in an ever increasing way. There had to be some sacrifices.

Also, many young people who wanted to go out and enjoy their many and varied interests weren't about to work for corporations in the established way. They felt that would impinge upon their new values. However, they found they couldn't get enough "bread," as they put it, to enjoy these new values unless they did take jobs. And that's where we have begun to see a modification of the new values in recent years.

All of that obviously has a big impact on education. One of the things about the old values was that you tried to get out of education some training, some awareness, some interest in work. The new values say that education should give you the opportunity to learn about new ways to live the full life. Such education is much less vocationally oriented, much more resistant to vocational training.

Now a point about education in general. When we ask the American people about entitlements -- what things they think everyone has a right to in this country -- we find a very interesting thing. A high school education leads the list. It's higher than health care. It's higher than housing. It's higher than retirement income. It's higher than jobs. I've got all the numbers to prove it.

So it isn't as if the American people are saying "We don't care about education." That's not the fact. They still put it at the head of the list. And I think that is important to keep in mind as we turn to what we can hope for from the private sector.

The Private Sector: What It Can Do

The private sector has a real problem in terms of being responsive to the new Presidential program. In essence, it says the government is going to do less and the rest of us have to do more. Some interpret this as business having to do more.

From the study we did of 220 chief executive officers, I'll tell you that they feel challenged by this situation, almost manuveured into a corner. Obviously the simple thing is to say they should make up the money that is being cut by government budgets. That's not possible. Government cuts are on the order of from $30-$40 billion. The amount of money given by corporations in the last year or so has never been over $3 billion. So they can't make it up, even if that were an appropriate thing to ask them to do.

Then it becomes a question of what are we asking them to do. I think it is very ambiguous. It is clear that the whole question becomes clouded in how much of the education budget is fat and how much of it is bone. We don't have time to resolve that today. All I will say is that all of you will agree some of it is fat and some of it is bone, but enough of it is bone to really create a problem if its cut.

When we ask the general public about what they feel are the most important things to be done in light of the gap that has been created, the people say "concentrate on training people to work." That is why they believe a high school education is so important. They are very consistent about that. Train people to work, and train them on a community basis.

One of the convictions on the part of the American public is that the federal government got out of hand. They believe that education is not so much a federal responsibility as it is a local responsiblity. They would like it to come back to the states and to the communities as much as possible.

So there are three themes running through what the American people say they want. They want education, they want education so it will train people to work, they want education to be community based.

What the CEO's Think

Let me turn to the study of the 220 chief executive officers (CEOs). We find encouragement and discouragement regarding the prospects of support from business and industry for secondary education. The positive factors are these.

Large numbers of CEO's recognize the need for increased giving in this current recession. If you think this is just a "ho-hum" finding, consider this. When we went out to see these CEO's, we thought, first of all, that they wouldn't even want to talk to us. We thought they would say, "Why do you want to talk to us about giving when we're having trouble running the business during a recession?" We were surprised. They were more interested in participating in this study than in any we've conducted with them. That in itself is revealing.

Secondly, instead of telling us that they couldn't give, times were too tough, 2 out of 3 CEO's said, "We support President Reagan's program. We realize government cutbacks have implications that we must face up to. We can't make it up in money. We're not sure exactly what we're going to do, but we see it is not unreasonable to ask us to do more, and we're prepared to do more." This kind of statement, from 2 out of 3 CEO's, was very significant, it seemed to us. So that's a positive factor in getting some help with respect to secondary education.

Another positive factor is their answer to the question of why do you give? They said, in essence, "in enlightened self-interest." They weren't giving to change the social nature of this country. They weren't giving to do good. They said they were giving in order to get communities that are stable and good for employees to live in, to get employees who are trained and able, as Ed Meade said, to work in their organizations. They really zeroed in very quickly to

enlightened self-interest as the motive for giving. Obviously, enlightened self-interest means an education is important.

A third positive factor is the fact they have given of their money to higher education. Some 47% of the CEO's said higher education received the highest amount of money they gave. That is true for every-sized corporation, big or small. Higher education leads the list. It's clear that secondary education is right next to higher education. Hopefully, it could be looked upon as a positive factor for giving to other aspects of education as well as higher education.

Now the negative factors. One is that this whole giving pattern on the part of companies revolves extraordinarily around the CEO. That's a fascinating side to this. In other areas of a corporation's activities -- marketing, manufacturing, etc. -- a CEO relies heavily on other people. But in this area of giving, a CEO's influence is personal and conclusive. This is something they dominate.

That means they tend to give to things that are one of their real interests, like higher education. The fact that they are typically loyal alumni of higher education institutes makes it their own interest. I'm not so sure that public education is an interest of theirs in the same way.

Another negative. We asked the CEO's to list the needs of communities that were not now satisfied. In their view, economic development and health needs came ahead of education.

Another negative is political problems. CEO's don't like political problems, and public education has them. That's not going to help to get them involved. The CEO's talk about the labor organizations and the unions that teachers have, and they talk with concern about whether their involvement, even if they came up with good things to do, could overcome some of those problems.

Some Problems About Giving

Let me go on to one other subject before I wind up with a few suggestions. And that is the experience business and industry has had to date in giving to secondary education.

You heard Ed Meade lay out a long list of things being done. He could have gone on longer. I have lists of hundreds of examples of companies doing good things for schools and school systems. However, as Ed said, there are many successes and many failures.

I submit that's not good enough. It is accurate to say there are many successes and many failures. The successes deserve our approbation and our applause. But the fact there are failures has to be taken into account, too.

I think what is desperately needed is to identify the efforts that are really worthy of support. We have a mish-mash now. Some things are worthy of support and some are not. Nobody is making an evaluation. The result is that CEO's are not clear about what really works. Do Adopt-A-School programs work?

Is sitting on a school board effective? You go through all these categories and it isn't really clear what is effective and what is not.

In California, for example, the Bank of America led the way by giving $1 million a year to schools for the last three years. The Bank of America is an extraordinary institution in terms of recognizing its social responsibility. It said, in effect, that the Bank had benefited from Proposition 13, while the public schools were the losers. Therefore, it was a socially responsible thing to do to give the schools back some of the money it had gained.

The Bank of America did that for three years, but this year it reduced the amount to $500,000. At the same time, it asked other companies in California to join them in this effort. It could certainly demonstrate that the money it gave went to good causes. The Bank also convened a huge meeting, inviting the heads of California companies to join in a roundtable discussion about the needs of California schools. Clawson, the CEO for the Bank of America, and Myer, the CEO for Kaiser Aluminum, co-chaired the meeting.

What happened? Not much. No other company has joined the Bank of America in contributing funds to the schools. Nothing yet has come out of the meeting, even with the leadership of a large and influential business like Bank of America. This concerns me.

Suggestions to Improve the Context for Giving

So what do I think we can do?

I think we need desperately a management information system on this subject of giving. Those of you in business and industry, and those of you in education, know that our computers are quite capable of putting everything together in terms of what we have, what our goals are, how much progress is being made, etc. We need this information month after month, year after year. That's the way business operates. Think of the sales statistics and financial reports that executives receive month after month, some even daily. There's nothing like this on the giving side. Nobody has any sound statistics on what's happening. We're capable of doing it, and we ought to do it. If we want to play this game seriously, if we want business and industry to cooperate, we've got to give them this kind of information.

A second suggestion. I think we have to involve business and industry, labor, and government in the problem of getting to understand the schools. The occasional task force is not enough. The blue ribbon task forces in Chicago and Pittsburgh that Ed Meade mentioned are terrific, as far as they go. But I think we need more than that -- more involvement, more understanding of the schools. I think that if we conducted a test here in Stamford among businessmen on the subject of Stamford's school budget, they would flunk. They just don't know what the problems are. We need to communicate these problems in a crash way. It's an emergency. We have a crisis on our hands.

Thirdly, I think we need competition for excellence in our schools, and not just in athletics. We have a terrific thing going in Connecticut for athletic competition, but we don't in other areas. I know a lot about Connecticut and

its schools, but I don't know the relative capabilities of school systems in ways I's like to . I think it would be helpful if we did.

Fourth, communications. We are in desperate need for communications that we now don't have. Part of the problem is that business and industry, labor, and government don't know about schools, but part of the problem is that schools aren't doing a good job of communicating their story. I think we have a God-given opportunity in cable TV to correct this situation. I just came from a cable TV convention in Las Vegas a couple of weeks ago, and I can report to you the thirst that cable TV producers have for programs to fill all the time they have available. And they want stories about communities. There's certainly a story to tell about education. I think that taking advantage of this opportunity with cable TV is a means of telling the story about education in a big, solid, continuing way.

Another point has to do with equal opportunity. This country supports equal opportunity. It is a surprise to many that we haven't had more backlash in this time of economic recession, but we haven't. I'm not saying that everybody supports affirmative action, which goes beyond equal opportunity, but people are not backing away from the idea that

every one deserves an equal chance in getting to the starting line. And the starting line means education. I think this is an area in which business and industry are prone to be responsive if challenged, and I think this is an area in which we can do a lot more.

Finally, I think we have to work out a way of assesing what constitutes a critical mass for some of these cooperative efforts between business and industry and education. I think some of them are too small. They won't amount to anything because there's not a critical mass. I believe we need to determine which of these are capable of changing school systems in ways that are important and worthy of the problem.

Ed Meade talked earlier about the challenge to our schools in making our young people participating citizens in this society and able to work as either employees or on their own. I;m sad to say that on both scores we're not doing at this time what we need to be doing. I think our citizens are not sufficiently involved. Fewer than one out of two citizens vote in this country, let alone take part in civic activities. And in terms of the quality of work being done in this country, there is a large question of whether or not we can get people to produce. The productivity of our people is going down. So, we've got some real challenges. I think this kind of conference will contribute to our meeting them, and I'm glad to have had a hand in it.

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Speaking as an executive officer of a medium-sized Massachusetts corporation, Mr. Walker calls for "true partnerships" between business and industry and education in which both education and the business partner can benefit. He decries arrangements in which business and industry assume the role of donors and schools the role of donees. He describes an ideal partnership between his company, Baird Corporation, and the School for the Multiple Handicapped in Watertown, Massachusetts. And he suggests other kinds of arrangements that will benefit all partners.

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EACH PARTNER GAINS, NO PARTNER LOSES

I was contacted a few weeks ago to come here to be part of this group as an expert in high technology and in how the high technology industry is cooperating, or could cooperate, with education.

My first impulse was to say no, because I do not consider myself to be an expert in this field. But then I thought there are at least two definitions of an expert that might qualify me.

One definition is a person with a briefcase who has travelled more than 100 miles. I have my briefcase right here, and I travelled 180 miles today to get here. The other definition, which better suits me, is the definition that says expert: "ex" stands for the unknown quantity and the "spurt" is a drip under pressure. With those qualifications, let me see if I can offer something.

I'm going to be a little bit of a devil's advocate today, although I agree with most of what Ed Meade and Arthur White have said. In particular, I agree with Arthur White's analysis of changes in our society, especially with respect to our social responsibilities. Most of the crises in which we find ourselves are due to these changes. As individuals we are more and more concerned about our rights -- our rights to do what we want to, our legal rights, our rights for pleasure. We are less concerned with our responsibilities towards our children, parents, friends and neighbors, and to society as a whole. That's why we're in the situation we're in, and that's why we have to work so hard to get out of it.

Wanted: True Partnerships

Much has been written and spoken in recent years about the need for cooperative partnerships or relationships between industry/business and the educational community. I'm a member of both communities, and as a member of both communities I confess I have somewhat mixed emotions about the real partnership nature of many proposed relationships.

Business and industry are expected to donate personnel or equipment or money to educational projects. In return, they are promised benefits. But these benefits are largely undefined and futuristic, and consist, for example, of such things as a greater supply of employable graduates and a better educated consumer who is more equipped to do intelligent buying.

In spite of the survey that Arthur White did of CEO's -- and I think he concentrated on corporations that gross at least $25 million a year -- I think there are lots of problems with such a partnership.

It's difficult for many businesses, particularly smaller businesses, to afford the money, the people, the equipment to donate to educational institutions.

The larger corporations can do so. In fact, the very largest corporations have people designated as managers of corporate giving, even though CEO's exercise great personal influence in this area, as Arthur White said.

It's quite a problem, by the way, giving money out. Corporations do this for many reasons. They are public-spirited, they want to maintain a public image, they want the publicity and so forth -- some good reasons, some bad reasons.

But the little guys -- and there are many more little guys than big guys -- really can't do that, particularly in today's economy, when many businesses, big and small, are having trouble showing black on their bottom line. It is very difficult for a business to make a donation to an educational institution or to

an educational project when it is having trouble showing a profit, paying its people, and showing a return on investment to its stockholders.

I'm an officer in a rather small, publicly held company. It employs about 750 people and currently does $45 million worth of business a year. Every week I see all kinds of requests, worthy requests from educational institutions, hospitals, museums, and other types of nonprofit organizations. And I don't see them all. The CEO gets most of them. These organizations are pleading with us to make donations. How do you make such decisions? How much should you give?

An Example of a True Partnership

Let me get a little posit. . I propose that business and industry and educational institutions seek o: relationships that are true partnerships -- not a giver and a givee, a donor and donee -- but true partnerships when both the business and the educational institution can do well in both the short term and in the long term.

You might ask what kind of relationships are these. I want to give you an example. This is a relationship that has been going on for about five years now between my company, Baird Corporation in Bedford, Massachusetts, a suburb of Boston, and the School for the Multiple Handicapped, which is part of the Protestant Institute for the Blind located in Watertown, another suburb of Boston about 15 miles from our plant. This is a partnership that has been giving direct and immediate benefits to both partners.

It is a partnership that deals with what Dr. Meade talked about, a particular class of the underclass in our society. The School for the Multiple Handicapped provides educational services to a student body of young people who suffer from more than one physical handicap. The majority of these students are deaf, and because they are hard of hearing, they have difficulty communicating orally. They also tend to have less than normal intelligence.

Our relationship with the school is quite simple. We have a contract with them. The contract has them bring to our plant each day four or five of the students. The school provides the transportation. We don't have to worry about that. They are accompanied by their teacher, who acts as teacher, interpreter, and direct supervisor and who stays with them all day.

We teach these young people rather simple, but very important tasks. These are tasks that generally require precision, extreme attention to detail, and complete concentration. They are tasks that tend to bore more normal employees who lose interest and make mistakes. The tasks consist of such duties as wire stripping, deburring, cleaning of parts, and simple but precise assembly. As I said, these tasks frustrate other employees, but believe me, they are essential to our business. If they are not done well, we make bad parts.

These students work about four hours a day for us. When they are not working for us, their teacher is working with them in a conference room we provide, teaching them such things as arithmetic, spelling, reading and writing, how to shop, how to get on a bus, how to get along in life.

Through the school we pay the students a modest but reasonable wage. But because we're doing it through a contract with the school, we don't have to pay fringe benefits and the other prerequisites of employment.

This program has been extremely successful. We've been able to assist these students to cope with life, to learn a useful trade which will make them self-sufficient and not burdens on society. And we've taught them a bit about living in society. Indeed, we've hired several of these students after they've graduated. They now work for us on a full-time basis.

I must say that when we first started this program, we worried about the reaction of our employees. Would they resent these young people coming in and taking over the tasks they formerly did?

Not at all. Our experience has been extremely gratifying. Not only have our employees gone out of their way to welcome these young people, but some employees even learned sign language so they could communicate with them.

I'm reminded of the day before Christmas a couple of years ago when, as usual, we weren't getting much work done because we were celebrating. Two of our employees had brought in guitars, and one of these guitars was a bass guitar -- you know, the kind of guitar the young people turn the volume way up on and drive us old folks down the road.

The guitar player turned the volume way up on this bass guitar, so it was really banging out the bass notes. These young kids could feel those notes. They couldn't really hear them, but they could feel them. And they really got into the spirit of things. It was one of the best Christmas parties we've had in years.

Other Cooperative Programs

This is one program I've described in detail. Other programs have been alluded to by the previous speakers. One of these is on-the-job training for vocational education students. We have a program like that, too, where we take students from the local vocational school. They work part-time for us.

I might make this suggestion to school systems in regard to this kind of program. Try to establish a program where the students make a commitment -- I know it can't be a legal commitment -- but a commitment to stay with the company in which they are being trained for a period of time after they graduate. One of the frustrations is to work with these students, invest in them, and as soon as they graduate, they find a greener pasture elsewhere. If some way could be found to have them make a moral commitment to the corporation for a year or two, that would be good.

There's another program I have to tell you about because it's very personal to me. My wife runs a really small business called the Aberjona Yarn and Sweater Shop. Actually, its's a corporation. My lawyer set it up for me about four years ago. He called me and said, "Your wife is president, chairman of the board, sole stockholder, only voting stockholder, and you, sir, are the clerk."

The local high school came to my wife three years ago and asked her to cooperate with a program for students about to drop out of school. Would you take a student, they asked, to work part-time for you while going to school and see if you can turn this person around?

We did so. The young lady who came to work for my wife was paid a wage. She learned the retail business. She changed her life style and her living habits. She became more aware of the good things in life. She eventually graduated and continued to stay on at the shop. She's going to night school, taking college courses. Incidentally, she is sharing an apartment with my daughter, and she calls my wife and me Mom and Dad. So there's a success story in a very small way.

Some More Suggestions for Partnerships

We might organize such projects as these: Instead of sending computer and math specialists from industry into the schools, which costs a company money, why not bring students to business and industry? Let them assist in data input, data reduction, data interpretation. Let them learn what computers are all about.

In analytical laboratories, where chemical analysis is done, there's a great deal of demand for technicians to do what I call "scut work." This is non-professional work -- washing glassware, getting ready for analyses, etc. It would give young people a chance to observe professionals at work. It would also give them a chance to find out what scut work is. Maybe they'll be motivated to get more education so they won't have to do scut work all their lives.

Another suggestion -- aides for civil engineers. Still another -- aides for professional handicapped people who are working, the blind, the immobile, the quadraplegics, etc. Wouldn't it be great to have programs where students could work with people part-time and provide them the functions which they do not have. It would aid the handicapped, certainly, and at the same time these youngsters would be learning about the work that these handicapped people are doing.

There are many other programs I'm sure that we could put together jointly with educational institutions. These programs could involve normal students, gifted students, or special students. They should provide students with a taste of the business and industrial community without serious monetary penalty to that community. They could and should be structured to allow business and industry to at least break even.

A word of caution. In trying to come up with such programs, we must be very careful not to exploit the students or even to give the impression that the students are being exploited. We also have to be very careful to structure these programs so we are not depriving, or even hinting about depriving, the so-called normal labor force of their deserved employment.

I believe such programs are practical, realistic, achievable. But a partnership cannot be a one-way street. It must benefit all partners.

I believe that local educational establishments, in combination with local business and industry, can and should work out programs that will further the educational process and provide students with experience in the work place to prepare them for adult life. But, at the same time, such programs should serve business and industry by providing immediate benefits as well as the long time potential of an educated, trained labor force and a better informed consumer.

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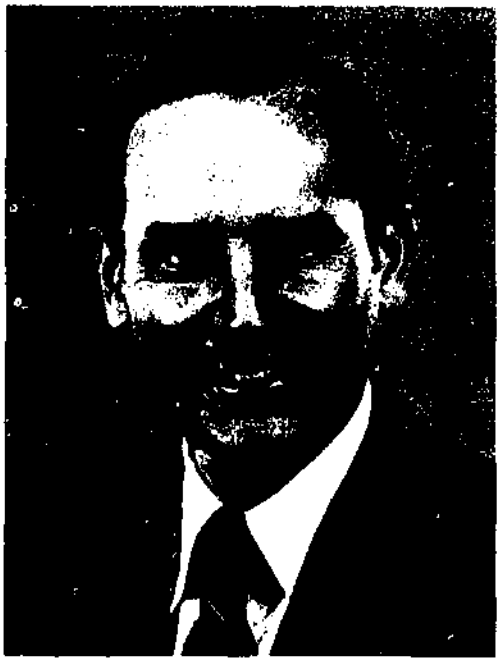
Although Dr. Ambach cites several reasons -- most of them economic -- why the issue of education/private sector partnerships is so important today, he suggests that the public policy questions central to such arrangements have not yet been addressed. Namely, at what point should the responsibility of public school to educate students end, and at what point should the responsibility of the private sector to train prospective employees begin? What should be the government's role in arriving at such decisions?



GORDON M. AMBACH became New York State Commissioner of Education in 1977. He previously served as the Department's Executive Deputy Commissioner as well as in other capacities since joining the Department in 1970. Commissioner Ambach's career in the field of education spans more than 25 years and includes teaching at the secondary and university levels and administrative assignments at the local, state and federal levels. He is a member of the Board of Directors for the Northeast Regional Exchange.

EDUCATION AND TRAINING: THE UNDEFINED INTERSECTION

We have had a full course of speakers this afternoon. The platter is well spread. Perhaps the most important advantage to be gained from coming together at a conference like this is to leave with an abundance of different suggestions and ideas. We can take away some thought and put it into our own practice. As respondents, our task is to comment on the speakers who have gone before. I would like to refer specifically to a couple of points.

Ed Meade commented on the array of connections between business, industry and education. His was probably as comprehensive and historic a description of the different kinds of such connections as you can get. You also heard at the end of his comments a concern that is on my mind. Are we not witnessing a greater separation between the advantaged and the disadvantaged in our society, particularly with respect to the opportunities for employment and life in the mainstream of our society?

I have brought copies of our paper on Youth and Employment. This describes the approach of the Board of Regents of the State of New York to the issues. I won't say anything more about this subject because you can read that document.*

Arthur White's presentation reminds us of the importance that the American people place on education, particularly the importance of training for employment. Matching that point against the change of values in society raises another exceedingly important point. If there has been a change in society on the willingness to "sacrifice" or defer gratification, do we not have a fundamental challenge to the concept of free enterprise? The whole concept of capital formation and investment is based on a willingness to set something aside today, rather than consuming it, in order to realize a greater gain from the investment in the future.

Arthur White also made important points with respect to the whole issue of confidence in education. We look especially to the leaders of business and industry to help build confidence in education. Why? One of the greatest problems in this country is our economic condition. The public looks to business and industry for solutions. If these leaders, in turn, look to education and have confidence in education, they enhance the public attitudes toward education.

We should note carefully Ed Meade's remark at the end of his talk. If there is a strength in partnership, it is that we reestablish a sense of a general collaboration between business, industry and education in order to maintain a strong educational system so that all of the functions of society are working effectively.

A Timely Discussion

There is another level of a partnership which is extremely important.

We ask ourselves, why is it there is such concern right now about this question of a relationship between business and industry and education? There seem to be several independent factors.

*Readers wishing to obtain a copy should write to the address below and request a copy of Youth Education and Employment, A Comprehensive Approach.

Assistant to the Commissioner for Policy Analysis
New York State Education Department
Room 375 - EBA
Albany, New York 12234

The first is the general economic problems within this society.

Second is a recognition that economic growth and development in this country is more dependent upon high levels of education and training for the workforce than in the past.

The third is that foreign competition has made us think in different ways about our own economic strength. We are learning that the strong economic development in Germany and Japan is due in large part to a conscious public policy to make a tremendous investment in education and training. Some very interesting pieces have been written about this, particularly about the Japanese.

The fourth point is greater recognition of a widening gap between the advantaged and disadvantaged in this country.

Fifth, a stronger recognition of the escalating obsolescence of skills facing almost all people in the work force. Unless there are conscious policies to continually upgrade capacities and skills, then we will steadily be put out of business.

A More Fundamental Public Policy Issue

We tend to think about the educational aspects of business and industry especially in terms of occupational education, vocational education, CETA or youth employment. Look back ten years at the kinds of meetings that have been held; the tendency was to draw together representatives of business and industry and education to talk about making better arrangements for CETA programs or improving vocational education.

The key public policy issue to be debated now is the intersection of business, industry and education with respect to the role of governmental spending for economic development. That debate is not yet well enough joined. There is a debate about CETA. There has been a major review of the program in Congress with respect to reshaping CETA. CETA is an important program. It is not, however, an economic development program. It is a program designed to give access and opportunity for those who would not otherwise have it.

What should public policy be with respect to the issue of governmental support for economic development at that intersection between business and education? That is a key question. We are not seeing that debate in Washington as yet.

Should the publicly supported educational system stop at general education and leave the whole responsibility for job training in the hands of business and industry? In West Germany they rely primarily on an apprenticeship system with the full obligation falling on business and industry. I'm not necessarily advocating this, but it strikes me that we ought to be addressing this issue. We ought to be asking what kind of overall relationship is the best between business and industry and education in terms of general education and job training and what the government's role in all this ought to be.

If there is a need for continual upgrading of skills, as evidenced by the immense investment business and industry are now making in their own employees to upgrade their skills, what role should government play? Should the upgrading of employee skills be left entirely to business and industry?

To lift our economy to a level more competitive in international markets will require an extremely substantial investment. This kind of investment calls for policy decisions on the issues of intersection between business, industry and education. I hope this issue takes a higher place on the national agenda.

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Mr. Southworth, who directs a recently organized council for improving basic skills education in New Hampshire, discusses ways and means for business and industry to help make public education programs more effective. "There is a real challenge to public education," he says, "to demonstrate that it can make changes in its methods of education to meet the needs that are present today and the new needs that we have yet to identify."

WILLIAM A. SOUTHWORTH has been involved in education and educational reform for 20 years as a teacher in secondary schools in Virginia, California, Ohio, Massachusetts, and Nigeria; as a Visiting Critic at the Yale Graduate School of Architecture; as a member of the Graduate Faculty of the MIT Department of Architecture; and as Director of Peace Corps training at Boston University. He is now Executive Director of the New Hampshire Corporate Council for Critical Skills.

LET'S DO IT RIGHT THE FIRST TIME AROUND

I've always found it helpful in trying to understand a problem to examine the assumptions that I am making and that others seem to be making. In the topic with which we are dealing we are talking about the potential and actual involvement of business and industry in the educational program of our public school system. This involvement brings several assumptions to mind:

1. There is a problem with our public school system and its educational programs that warrant the involvement of business and industry.

2. Business and industry can improve on existing educational programs by providing a kind of supplemental assistance, at the least, or entirely new programs, at the most.

3. Business and industry have some kind of vested or self interest in those educational programs that warrant their involvement, possibly trying to bring about improvements in the programs of the schools.

4. Involvement by business and industry may be more effective within the public school structure than in educational or training programs of their own that are designed to prepare new employees to work in business and industry.

5. There may not be a reasonable alternative to the traditional public school system or educational programs for educating and training the majority of the coming generation, so business and industry are concentrating on helping to improve the existing system and programs.

6. With reductions in government and local financial support for public schools, support is being solicited from business and industry to supplement existing budgets and possibly to help keep some school systems from collapsing.

Many other assumptions could and perhaps should be made, but let us examine the ones listed for a few moments.

Problems in the Public School System

First, it is undoubtedly true that there are problems in and with our public school system and its educational programs that warrant some significant involvement of one or more sectors of our society, possibly including business and industry. A good case in point is the deepening crisis in math and science education in our public schools. The "hidden Sputniks" that are being launched within our own country in the form of rapid and complex technological changes demand more education, training and understanding for our youth (and others) in math and science. Yet while this demand increases each year, fewer students are taking more advanced courses in math and science, standardized test scores have been declining, and a national shortage of math and science teachers has developed. We have this problem in New Hampshire and other states have quite similiar situations.

In addition to the problems with math and science education we need to draw attention to other problems in education: the gap between demand for and supply of computer literacy, the failure to provide adequate training in critical skills (e.g. critical thinking, problem-solving, oral and written communication skills, learning on one's own), the inability of students to apply skills and knowledge to real problems encountered beyond the classroom, the "inert ideas" that Alfred North Whitehead talked about ("ideas that are merely received into the mind without being utilized or tested, or thrown into fresh combinations"-

THE AIMS OF EDUCATION), and the other serious problems that are pointing to the need for significant action to be taken before the problems become even more compounded or perhaps reach the point where they cannot be solved within existing educational programs.

Second, the notion that business and industry can improve on the existing educational programs is worthy of some exploration. Some examples already exist. The nation-wide accountability movement might be understood as a form of adaptation of methods used by business and industry to evaluate and adjust programs to make them more effective for meeting the stated objectives. The notion of managing by objectives, (MBO), a familiar term within the business world, is another adaptation made by school systems.

But these are familiar ideas by this time and I believe that today we are talking about other ways that business and industry can improve on existing educational programs. I believe that we are even considering some very different improvements that may be more in kind than in degree; i.e., doing more than tinkering or fine adjusting. Perhaps proposing and implementing new educational programs, particularly in terms of methods of educating our youth, will be the literal translation of improving "on" the existing programs. More on this later.

Why Business and Industry Should Get Involved

Third, there is definitely some self-interest on the part of business and industry that will warrant their involvement in the education of our youth. There is a great deal of dissatisfaction on their part with the quality of education and training of youth today. Ask any training or personnel officer in business and industry. If we are to assign cause to this situation, we can find some of the reasons in the rapid development within business and industry, particularly high technology industry. Development within the computer industry and computerization of business and industry are good examples to keep in mind. These developments are demanding computer literacy, more math and science education, and a more quantitative way of looking at the world. Many, perhaps most, schools have not been able to keep up with the demands or even thought it necessary, as we are discovering. In light of the problems within math and science education it's beginning to appear doubtful if schools will be able to catch up, let alone keep abreast of developments. However, business and industry still rely on schools to provide an adequate foundation in basic and critical skills. It is in their self-interest to do so.

This self-interest brings us to the fourth point or assumption. At the moment, business and industry seem to be counting on the ability of the public school system to help prepare new employees, at least in the fundamentals. As long as this faith in the schools remains, the chances for a viable partnership are good. However, I belive that some serious questions are being raised about this faith that will have long range and significant implications for public education as we know it. As more and more students need remedial work in the basics of math and communication skills, as more students graduate without critical skills, and as business and industry are required to provide more remedial training at their own expense, the search for more efficient and

cost-effective ways of providing the fundamentals increases. Paying twice for training and education, first through taxes and then through remedial programs, is causing some rethinking about the traditional faith in public education. If this questioning of faith continues, then the fifth assumption may also be brought into question.

Improvement: A Two-Step Process

In the search for ways to improve the education and training of the majority of the coming generation we might see a two-step process happening. The first step will be to try to introduce significant changes in the present educational programs to make them more effective. In New Hampshire, the Corporate Council for Critical Skills is working to improve the present educational programs through "message tours" of business and industry for educators; public awareness programs to alert the state to the seriousness of inadequate critical skills training, particularly in math, science, and communication; recognition and encouragement of quality education by highly qualified teachers; and the introduction of programs for training teachers and students, particularly in the area of critical skills and the application of one's educaton to problems of the world beyond the classroom.

If this first step does not work, then the second step will need to be given serious consideration. It's at the second step that we begin to consider alternatives to the public school system, or at least significant supplements that may develop into alternatives. One such alternative is already in existence in North Carolina where they have created a special school at the 11th and 12th grade levels for students with an aptitude for math and science. This approach can be implemented through a completely separate system, such as North Carolina has developed, and/or through a magnet school approach in which several adjacent school systems join together. In this arrangement, each system specializes in one of more subject areas for its 11th and 12th grade students. e.g. math and science, languages, social sciences, art and music, vocational. Students with an interest in one of these areas would attend the school offering the specialized programs for the last two years of their secondary education. An approach of this nature is already being used for vocational training on a regional, multi-school district basis. We should consider using it for other subject areas as well.

Once we begin to consider alternatives there are other possibilities to consider. One such possiblity is to establish a post secondary program to provide one or two years of concentrated work in one or two subject areas. Graduates could then either go on to college or directly into the work force.

Whether we use these or other alternatives, it is very clear that something needs to be done and done in a major way to deal with a rapidly deteriorating situation within our public school system. When we come to the last assumption, I believe that we are talking about a stop-gap measure that will probably lead to serious consideration of other alternatives to traditional school systems and traditional educational programs. Business and industry are not willing to support programs that are not working. There is a real challenge to public

education to demonstrate that it can make changes in its methods of education to meet the needs that are present today and the new needs that we have yet to identify. I believe we are at a critical and exciting point in education. May we make the best of it.

# # # #

Mr. Markos cites the establishment of a business, labor, and government coalition in Rhode Island that has successfully tackled several statewide economic problems, especially the siting of hazardous waste dumps and the reform of the unemployment compensation system. He expects the coalition to address education problems soon as part of an overall effort to improve Rhode Island's economic future. One concrete step the state is taking, according to Mr. Markos, is to provide $10 million to purchase computer equipment and make it available to every school in the state as a means of improving computer literacy.

ARTHUR J. MARKOS is the Director of the Governor's Special Development Office for Rhode Island. He also serves as Chairman of the Advisory Board for the Coalition of Northeastern Governors. Prior to assuming his current position, Mr. Markos was Governor Garrahy's Deputy Executive Assistant for Policy.

EDUCATORS TO JOIN GOVERNMENT, LABOR, BUSINESS COALITION IN RHODE ISLAND

I want to broaden the perspective Meade, White and the other speakers bring to the symposium to discuss a partnership that includes the other two key actors in our economy -- government and labor. During the 1974-75 recession, economists and government leaders were writing off the New England economy. It was depressed, tied to a tired economic base, unable to compete with foreign imports and lacking the entrepreneurial, resource and political advantages that generated growth in the South and West. Fortunately, the second half of the 70's demonstrated their conclusion was premature and hopefully wrong. Instead,

as "the most knowledge intensive region in the world," New England holds the key to its own future prosperity, as the report of the Commission on Higher Education and the economy states.

Five years ago we established a Partnership of Business, Labor and Government in Rhode Island to identify issues holding back the growth of our economy and to find solutions. Rather than confronting one another in public, we brought these sectors together in a forum where agreements could be cobbled together.

Frankly, the relationship has been uneven, rocky at times, and the partnership agreed to dodge some key, divisive issues in order to retain the ability to join efforts on those issues where cooperation was possible.

What did we accomplish? Two examples. Hazardous waste management legislation was prepared with environmental leaders brought into the actual drafting process. With solid agreement within the Partnership, the General Assembly passed the Governor's bill without opposition -- the first such program in the nation. And this year the Partnership was extended to include community officials, and it prepared successful legislation for siting hazardous waste treatment facilities. Several other attempts in previous years to pass such legislation failed to achieve passage.

Our unemployment compensation system was deficit ridden because of borrowing necessary to finance benefits during Rhode Island's 1974-76 depression that resulted when the Navy abandoned Rhode Island. The national recession followed. Private employers recognized their responsibility to make the system whole, but they were bitterly opposed to two benefits that drained the system: provision of compensation to retirees and strikers. These were benefits labor had fought hard to preserve, but through the Partnership, labor traded off the retiree benefits when business agreed to a new financing program for the employment security fund.

Thus, the Partnership achieved success on the one hand by combining forces where there was a common stake, and on the other hand by struggling to shape agreement at the Governor's direction, where strong differences existed.

Last year, the industrial community in Rhode Island was in revolt; workers compensation costs had spiraled out of control. It was convinced that an unresponsive bureaucracy, a Workers Compensation Commission it regarded as sympathetic to labor, and a law that rewarded lawyers, doctors, delay and fraud were responsible. State government, as a self-insurer, faced the same problems. The Governor realized that problem had to be resolved or the state budget would be broken; industries would close the factory doors and no new industry would consider Rhode Island.

Labor was opposed. Its rank and file saw an attack on a benefit. And labor's opposition, when registered in the General Assembly, had traditionally meant failure for any initiative.

Clearly, this was an issue the Partnership was not structured to resolve. It did not meet frequently enough to be educated about the issue's complexity; it was too large; some of the membership were not directly affected; and, most importantly, from our perspective, failure could lead to dissolution.

But the Partnership played a key role nonetheless. Labor had found some business leaders without two heads, and social and golfing relationships had developed. Business found labor leaders who would listen and sensitize them to rank and file concerns.

To generate workers compensation reform, the business community raised money, hired staff and drafted legislation. The Governor's Office was kept fully informed. Labor leaders were briefed, but continued to oppose several major provisions.

The Governor identified key industrial and labor leaders, resource people and General Assembly leaders. Negotiations occurred throughout the session, culminating in marathon line-by-line bill drafting. There was shouting; charges were hurled and countercharges; and the potential for a breakdown remained constant. But the informal links served to hold the process together. The result was comprehensive reform, a whole new system. And Rhode Island is the first state in New England and one of only a handful in the nation to achieve comprehensive reform. The General Assembly passed the bill unanimously in both Houses.

What lies ahead for our Partnership? First, the Partnership will be broadened to include educators and public representatives to prepare a blueprint for the State's economic future. And a new group with some cross membership, the Committee on Higher Education and the economy, Chaired by the Chief Executive of our largest bank holding company, will forge Rhode Island's response to the NEBHE Commission. This morning the Governor announced its first concrete program, an effort that will provide $10,000,000 to purchase computer equipment and make it available to every school in the State, and provide the opportunity for computer literacy to all Rhode Islanders.

His vision in this effort echoes Thomas Wolfe's (with some liberty), "To everyone his chance, to everyone, regardless of birth, a shining, golden opportunity; to everyone the right to live, to work, to be himself; and to be whatever his vision can make him."

I do not pretend that Rhode Island has discovered a new answer to complex public policy issues, but our approach serves us well. In these times with problems growing increasingly technical and with resources shrinking, we must reach out for volunteer expertise and political coalition building to shape and implement public policy.

# # # #

Mr. Keating urges educators to pay attention to job forecasting in order to design educational programs that will produce graduates who are employable. He notes a critical shortage of engineers and technicians, yet a surplus of 2.7 million college graduates through 1985 for openings for non-technical jobs traditionally filled by college graduates. "Are we planning the right output from our schools for the jobs that will be available?" he asks.

Mr. Keating describes the programs that GE has supported as a means of making students aware of employment opportunities at GE, and some programs that provide actual training for employment.

WALTER G. KEATING joined GE as an engineer in 1971. He has worked on both hardware and software projects in Digital Signal Processing, Data Communication, Antenna Design and Facsimile Transmission. He is now Technical Services Manager for the GE Plant in Burlington, Vermont.

GENERAL ELECTRIC'S EDUCATIONAL OUTREACH

What is General Electric's interaction with secondary and primary education? I was very familiar with our college interaction, but when given the assignment to come down here and speak to you, I had to research the issue to find out what we were doing.

To appreciate the programs we have for public school students, I'd like first to give you a thumbnail sketch of General Electric. The corporate headquarters is located nearby in Fairfield, Connecticut. We have 228 manufacturing plants in 34 states and Puerto Rico, and 135 manufacturing plants in 24 foreign countries. So you see we are about two-thirds in this country,

one-third outside. General Electric employs 405,000 people worldwide, 277,000 or 68% work in this country. Within our U.S. workforce, some 42,000 are college graduates. General Electric makes some 135,000 products, though people still think of us primarily as manufacturers of light bulbs, refrigerators, and other appliances. In truth, we are a multi-country, multi-disciplined, technically-oriented company which produces a vast number of products.

Wanted: Graduates Literate in Math and Science

We look to the public school system for three types of people: graduates sufficiently educated in math and science so they can go on to become scientists and engineers; technicians and skilled craftsmen; and non-technical professionals, like lawyers and accountants and other staff people, who have an adequate technical background to understand our production processes and the products themselves.

We believe that students should graduate from public school with an adequate base in math and science so they can select any of these career paths. Their options should remain open.

The most glaring example of how options are closed down too early has to do with female engineers -- or rather, the lack of them. Why is this so? What we find is that many females don't graduate from high school with sufficient math and science backgrounds to be able to enroll in engineering schools even if they want to.

Let me list some other problems that bother us a bit, and which have some relevance to education and employment. During the 1970's, the country experienced a high level of youth unemployment, a lack of employment opportunities for minorities, women, and the handicapped, declining productivity, and critical shortages of people skilled in technology.

Right now, we are seeing our biggest shortages in electronic skills and the computer science area. Of course, our shortages contribute to your shortages of math and science teachers. They are resigning from your schools to come to work for us in industry.

While significant progress has been made in equal employment opportunity, the other problems have not yet yielded to satisfactory solutions. There are still not enough young people prepared for jobs that exist now or will exist in the future. Instead, many young people have been prepared for outdated jobs that technology has passed by.

Job Forecasting: A Guide For Educators

One of the objectives of the school system, as Dr. Meade pointed out earlier, is to provide someone who is employable. What's the definition of "employable"? It means getting a job. It means being educated and trained to move into the kinds of jobs that need to be filled in the future.

Business and industry are forecasting what kinds of jobs these will be. It's the responsibility of all of us -- business and industry and the schools -- to pay attention to these forecasts. Otherwise, we run the risk of being caught short.

For example, General Electric some years ago decided to enter the Christmas tree light bulb business. Despite the fact we manufactured virtually every other kind of light bulb, we had never produced this kind before, so we plunged into the market in a big way. We made carloads of Christmas tree light bulbs. Well, the year we decided to go into the business was 1974, the year the President didn't light the national Christmas Tree, the year of the energy crisis. There we sat with warehouses full of Christmas tree light bulbs.

What we're saying, from the point of view of human resources, is this: is the country going to be sitting there, training people for something there isn't a market for?

One thing we in business and industry can provide you with is an estimate of what our needs are going to be. And then we must consider what we can do to help you produce people who can fill those needs.

Here is the employment outlook that we see. The number of all college graduates entering the workforce through 1985 will exceed the number of openings traditionally filled by college graduates by 2.7 million. That's 2.7 million excess college graduates!

During that same period, there will be a critical shortage of college graduates qualified as engineers or other technical positions.

The number of high school graduates entering college will remain higher than in previous decades, resulting in a decline of non-college entry-level workers. The Bureau of Employment Services estimates, for example, that there will be openings of 31,000 per year until 1990 for machine operators. Yet, only 2300 people a year will be trained to fill those jobs. Again, it's a question of mix. Are we planning the right output from our schools for the jobs that will be available?

Programs Sponsored By General Electric

What are we doing about this problem at General Electric? We have several different programs in operation. I'll mention a few.

We have a program sponsoring Career Education Leadership Institute, which was founded in 1959. It helps secondary school guidance counselors understand the job changes going on in business and industry and the kind of education that a person must have in order to fill these new jobs. We offer this program through universities, with about 50 guidance counselors to each class. So far, we've run the program at Syracuse University, University of Louisville, Boston University, Indiana University, Ohio State University, Ohio University, and the University of South Carolina.

We also have an Educators in Industry program, of particular interest to NEREX, in Lynn, Massachusetts, where we bring in classroom teachers to our facilities and show them -- as we do guidance counselors -- the kinds of jobs available and the types of graduates we need from local school systems.

For students, we run engineer "shadow" programs where students spend half a day with engineers, watching them work, seeing what kinds of problems they deal with. And we have Career Guidance Seminars where students come into our plants and are exposed to "career modules" consisting of sessions in the actual work environment that allow them some "hands on" participation in particular jobs or positions.

In Burlington, Vermont, in the plant where I work, we have participated extensively in programs sponsored by the National Alliance for Business. This organization gives a career guidance institute for teachers at Johnson State College which consists of a 1-week course, including tours of many local industries. They also undergo an interview as if they were prospective employees. At the end of the week, they write a thesis on their experience. For this effort, they earn 3 credit hours.

At Champlain College, we are helping the computer department there give tours and presentations for high school students on computer installations in local business and industry.

The emergence of computers as an indispensable tool for business and industry is remarkable. We did a count last week in our plant of the number of computers in use there. We have at least 1 computer terminal for every 2 professional employees. I was talking to a friend from IBM the other day, and he said that by 1990 they expect to have 2 computers for every professional employee, each one performing a different function on a different set of data.

For students in area high schools, we give plant tours for classes in shop, secretarial training, drafting, data processing, and other vocationally oriented classes.

We also have a 3-year apprenticeship program for high school graduates. They are typically rotated through 10 different jobs within the plant, logging some 6,000 hours in on-the-job training. In addition, they receive 650 hours of classroom training at the plant. We view this program as the equivalent of an associate's degree. A graduate, we believe, achieves the same growth rate within those 3 years as an average high school graduate employee with 15 years of experience at General Electric.

We have 80,000 exempts at General Electric, that is, people holding professional positions, and only 42,000 of them have a college degree. So you can see that we rely heavily on the product of the secondary school system, and why we emphasize guidance programs for counselors and teachers and career days for students.

# # # #

Summary

As Gordon Ambach said, the economic condition of the United States has prompted educators and businessmen alike to re-examine the public education system and how it is fulfilling its responsibility of providing -- in Edward Meade's words -- "literate, employable, participating citizens".

Mr. Ambach, who is the Commissioner of Education for the State of New York, spoke of an "intersection" between education and business and industry, an intersection where the interests of public education and the private sector merge and where each, working together cooperatively, can render the other some assistance.

This conference was designed to explore existing and potential partnerships between education and business and industry. Speaking from the perspective of the Ford Foundation's Chief Program Officer for Education, Edward Meade reviewed the kinds of partnerships that have long been a part of the educational scene -- cooperative education, Adopt-A-School, Junior Achievement, to mention a few. He reminded the conference that business executives have traditionally taken their places on school boards and blue-ribbon study commissions. And he outlined some promising, new partnerships between business and industry and education.

Such arrangements are healthy, he said, but he warned that one must be careful that the programs initiated thereunder must not be too narrowly focused. "It is important to have a work focus, rather than a job focus, in these relationships ... It seems to me that in the long run it is more effective to have a school system that turns out people who can work and who can think and who are literate than it is for schools to be ' training grounds ' for specific businesses and industries."

Examples of cooperative programs between business and industry and education were described in some detail by two other speakers.

Donald Walker, a manager in a Massachusetts high technology corporation, outlined his company's arrangement with a school for the handicapped. The school sends high school students to the company to learn some job skills in order to become self-sufficient; the company trains them on tasks that they are particularly suited for, tasks that other employees cannot perform well because they cannot maintain the concentration required.

This is a "true partnership", Mr. Walker said, because each party to the contract enjoys both long and short term benefits -- the school, for arranging skill training for their handicapped students; the corporation, from the work the students perform. The students are the ultimate benefactors. They are paid a stipend while in training and upon graduation, take their place in the workforce.

Walter Keating, Technical Services Manager for a General Electric plant in Vermont, described the educational programs that GE sponsors nationwide and those his plant sponsors in Vermont. Among the local programs is a "shadow"

program in which students spend some time in the plant with engineers, watching them work, seeing the kinds of problems they deal with.

Such experience could well focus a student's career goals. Mr. Keating points out that too many college graduates are being prepared for service or business oriented jobs while engineering and other technical jobs go begging.

Arthur White, a social and economic analyst, talked about another way in which the private sector can influence public education. He outlined the collective views of 220 corporate chief executive officers on their responsibilities for supporting education, particularly in this day of federal budget cutbacks. And he traced the changing social values over the last 20 years and indicated how they affected education and what he calls "the context for giving".

He concludes that despite the enormous amount of information available about public schools and the educational process, business and industry are still badly under-infomed or mis-informed. He suggests some specific ways of correcting this situation, including a plea for some method of assessing which of the cooperative efforts between business and industry and education are capable of improving school systems and therefore should be supported.

William Southworth spoke more generally about the improvement of school systems, but he drew attention to the increasing lack of math and science teachers and the consequent lowering of basic skills among students. He has firsthand knowledge of this particular problem. He is currently the executive director of a business-supported council in New Hampshire that is dedicated to the up-grading of basic skills among the state's student body.

Arthur J. Markos works for the Governor of Rhode Island. He described the work of an informal but powerful coalition that has organized through the efforts of the Governor and his staff for the purpose of solving some of the chronic economic problems confronting Rhode Island. The membership of this coalition, which includes representatiaves from government, business, labor, was recently broadened, Mr. Markos reported, to include educators as well. One of the coalition's first educational goals is to improve computer literacy.

Despite the traditional and recently organized partnerships between business and industry and education, comprehensively described by Dr. Meade, there was general agreement among the speakers that considerably more needs to be done. who should do it, and how, is still at issue. Mr. Ambach suggested that a public debate be joined around this question:

> What should public policy be with respect to the issue of governmental support for economic development at that intersection between business and education?

And one of the questions that should be answered within this debate is this:

Should the publicly-supported educational system stop at general education and leave the whole responsibility for job training in the hands of business and industry?

It is typical of a conference which people attend in order to broaden their understanding that they come away with more questions than they brought. Such was the case with the conference at Stamford, Connecticut, on the subject of partnerships between business and industry and education. But the questions have been more precisely drawn, and a dialogue - if not a debate - has begun as the result of sharing experiences, concerns and plans.

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