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Address to Economic Policy Council

One of the most important developments in the education reform movement is that American business and the American public schools are developing a much closer relationship. The signs are everywhere. In California, the Business Roundtable was instrumental in gaining passage of the largest education aid package in that state's history. Here, groups like the New York Alliance and the New York Partnership have created and encouraged a wide range of programs linking local business and the schools. And across the country creative and innovative exchanges between business and public education are proliferating at an accelerating rate. Still another sign of the involvement of American business in public education is the unprecedented number of top business executives who have served on the national education commissions that have helped chart the progress of reform.

One key reason that business leaders and education leaders are collaborating as never before is that they recogni~~tion~~ how much they depend on each other. The fact is that the students of today will be the workforce of tomorrow. Those individuals who tomorrow will run our corporations, battle cancer, design the supercomputers and perform all of the other critical tasks of this century and the next are sitting in our classrooms today. American teachers hold the future of this country in their hands.

And unless we do a first-rate job of educating this future workforce, the economic future, and even the national security of this nation, will be in jeopardy. This audience knows only too well that the world is becoming a more fiercely competitive place everyday. We will not be able to remain a first-rate competitor in the global marketplace unless we have a first-rate workforce. And a strong workforce can only be produced by an excellent education system.

There are two important trends in our economy which will place increasing demands on our school systems. First, the rapid spread of robotics and automation and the decline of traditional "smokestack" industries will mean that fewer and fewer low skill factory jobs will be available to American workers. U.S. Bureau of Labor Statistics predict, for example, that by 1990 80% of available jobs will require some sort of post-secondary education; furthermore, of those jobs fully 80% will require additional training beyond the traditional liberal arts curriculum, particularly in the skills of high technology.

So the next generation of American students will have to be better educated than their predecessors just to qualify for the new jobs being generated by our increasingly high tech, "information society." The computer is everywhere these days, from the high speed mainframes tracking volume trading on the Stock Exchange to the computerized cash registers run by your local cashiers. Not every future worker will have to know how to program a computer or even run a keyboard, but more and more of them will have to know about computers, and how to retrieve information. In the information society in which power will increasingly mean access to information, a future worker's ability to get ahead could depend on his or her

"computer literacy."

Second, the workplace of the future will be more volatile than ever before. Long gone are the days when employees signed up for a lifetime of employment at industrial giants like IBM. With the pace of technological change quickening and the mushrooming of futuristic industries -- biotechnology, robotics, lasers and new wave ceramics to name a few -- future workers will change jobs much more frequently than did their predecessors. Or they may just have to upgrade their skills at the same job, such as stepping up from an electric typewriter to a computer. Future workers will need the ability to be retrained regularly throughout their careers. Which means that their basic learning skills -- reading, writing, math and computing -- must be stronger than ever.

Our schools face the tremendous challenge of educating our students so they can become the highly skilled, literate, technologically advanced and readily adaptable workforce we will need. At the same time, we face major problems that could seriously undermine our best efforts.

For example, we are currently plagued by a nationwide high school dropout rate of 26%. Japan by contrast has only a 4% rate. Beyond the question of losing a competitive edge to the Japanese, consider what this means to the American economy. In light of the figures I cited about the educational demands of future jobs, the current dropout hemorrhage from our schools virtually guarantees that a quarter of our potential workforce could be unemployable in coming years. This is a colossal waste of productivity. It would be like General Motors sending 25% of its assembly-line workers down into the cellar to do nothing.

Another, related problem is our appalling national illiteracy rate, estimated at roughly 20% of the adult American population. Part of this is, of course, the sad legacy of previous generations of dropouts. In a future American economy which will depend more and more on information processing and service industries, and less and less on factories and heavy industry, this sizable proportion of the potential American workforce will become increasingly unemployable. Functional illiteracy is a crippling handicap in an economy that demands adequate learning skills to qualify for a first job.

Automation, robotics and other technological advances are creating another problem for the American workforce. A Carnegie Mellon University study has identified 4,000,000 American jobs that could be taken over by robots before 2000. Experts have also estimated that the overall effect of technological change could cause a shortfall of 6,000,000 American jobs by 1990. Millions of Americans will either lose their jobs to automation or be unable to find jobs because their present skills have become obsolete. We'll need a massive education effort to retrain these displaced workers for other jobs.

The growing partnership of American education and American business faces a fourfold challenge: to better educate today's students for tomorrow's more demanding jobs; to sharply reduce and eventually eliminate the incidence of high school dropouts; to reeducate our adult illiterates so they can become employable; and to retrain the millions of workers displaced by automation and periodic down cycles in the economy.

As we strive to surmount these challenges, however, we are facing a grave crisis in education that threatens to sabotage our best

efforts. Specifically, we face a growing national shortage of teachers which is projected to become acute within a few years. Already we have severe shortages in math and the sciences and recent increases in enrollment in the early grades presage more widespread problems soon.

In July the Rand Corporation published a short study, Beyond The Commission Reports: The Coming Crisis in Teaching, which dramatically illustrated the dimensions of the problem. The report's author, Linda Darling-Hammond, warned: "Unless major changes are made in the structure of the teaching profession, so that teaching becomes an attractive career alternative for talented individuals, we will in a very few years face widespread shortages of qualified teachers. We will be forced to hire the least academically able students to fill these vacancies, and they will become the tenured teaching force for the next two generations of American schoolchildren."

The trends outlined in the study present a bleak picture. First, the total number of college graduates earning education BAs has plummeted in the last decade, from 314,000 in 1971 to 120,000 in 1983, a drop of more than 60%. Making matters worse, the quality of those entering teaching has also begun to drop sharply. The study reports that "Most teaching recruits are now drawn from the bottom group of SAT scorers; most of the few top scorers who are recruited to educationleave the profession quickly." Finally, women, who used to be the backbone of public education, now have many other career options. The proportion of women earning BAs in education has dropped by more than half in the last ten years.

As noted, the shortage has reached crisis proportions in math and the sciences. Far too few math and science teachers are coming into

the profession and huge numbers of veterans are leaving. In 1981, fewer than 1400 math and science teachers earned BAs in education. But the following year a total of 18,000 math and science teachers left their jobs. To put it another way, during a two year period about 12 math and science teachers left their jobs for every one who came in.

This talent drain has had a devastating effect on the academic readiness of our math and science teaching force. In 1981, fewer than half of the newly hired teachers in math and science were certified or even eligible for certification in the subjects they were assigned to teach. With the number of math and science teachers leaving the profession continuing to far outstrip the number coming in, we face the prospect that a smaller and smaller percentage of these teachers will be qualified to teach their subjects.

This growing shortfall of math and science teachers could not come at a worse time. With school systems nationwide beefing up their math and science requirements, we will need far more teachers in these areas, not fewer. Furthermore, as we race ever faster into the era of high technology and computers, our students will need all of the advanced math and science training they can absorb. We must attract much greater numbers of math and science teachers into our schools, and we must drastically reduce the flight of talent.

What can American business do to help solve some of the problems facing our schools? And beyond that, what can business do to help our overall workforce become more productive and employable? Well, there are at least three things that would help. First, businesses around the country can continue to explore and develop the many kinds of business/school partnerships and collaborations that have

multiplied of late. Second, businesses can develop more in-house training and retraining programs, to help employees move up to higher jobs -- or acquire new skills if their jobs have to be terminated. Finally, American business can help enormously by supporting the education reform movement at all levels -- from the national effort right down to local initiatives in neighborhood school systems. Above all, strong support is needed in the effort to make teaching a respected and rewarding profession which will again attract the "best and the brightest."

The possible ways in which businesses and professional organizations can work together with schools are limited only by the creativity and enterprise of both sides. I'll just mention a couple of programs in New York which could be a model for others. A program called Mentor, a joint effort of the New York Alliance for the Public Schools, the Board of Education and the Federal Bar Council, has brought together students from 22 local high schools and junior highs with about 200 lawyers from 22 metropolitan area law firms. Students visit the law firms, watch actual proceedings in state and federal courts and even participate in their own "mock" trials. Lawyers and other members of the law enforcement community in turn visit the school to lecture on and discuss various aspects of their work.

Similar exchanges are involved in the so-called "Academy of Finance," a collaboration of the Board of Education and Shearson /American Express (now Shearson Lehman/American Express). Students from New York City high schools have worked as summer interns at Shearson and taken special courses in finance, accounting, data processing and other areas offered by the firm during the school year. This year 35 students earned graduation certificates for the

special program in addition to their regular high school diplomas.

Students benefit enormously from these kinds of programs. They get "hands-on" experience in different professions, which can motivate them to go on to college and seek careers in those areas. At the very least, by using ~~their~~ academic skills in the real world, they see that improving those skills will have important consequences for their futures.

Other kinds of business/school collaboration can also help solve some of the critical problems facing our schools. For example, businesses can arrange for some of their employees to spend a year or more teaching in local schools. This would augment the teaching ranks and help raise the status of teaching, particularly if highly placed executives began to undertake teaching stints as a regular part of their careers. Students would get valuable exposure to the world of business through interaction with real practitioners.

A natural corollary ~~of this~~ would be for businesses to hire teachers for part-time jobs in the summers, or for full-year work stints during regular breaks in the teaching career, such as sabbaticals or leaves. A valuable cross-fertilization of talent would result; schools and business would benefit from an increase in mutual understanding and from the invaluable network of personal contacts that would develop. Furthermore, our teaching force would be strengthened. Some business executives would be so stimulated by teaching that they would decide to remain teachers. Others might take early retirement in order to spend a few years sharing their experience and insights with the business leaders of the future. Also, veteran teachers on the verge of leaving because of burnout -- and studies show their numbers are increasing -- might discover that

a year or two away from the classroom had rekindled their desire to teach.

To help reduce the number of dropouts, local businesses could also provide jobs to students on the verge of leaving school, on the condition that the students remain in school to keep the jobs. Such programs already exist in New York and they have proven successful in giving potential dropouts the little extra incentive needed to stay, particularly those kids who feel they must leave for financial reasons.

Businesses can also assist schools in computer training. There is no business in this country that will not be profoundly transformed by computers in the next few years, and yet our schools are still woefully unequipped to teach the fundamentals of this new science. A number of private schools and a few affluent public schools have plenty of computers, but the vast majority of schools have few if any terminals, and people trained to teach computer science are hard to find. Businesses can help by donating computers to schools and by loaning some of their computer experts to teach or consult parttime -- or even teach fulltime for a year or two.

Business can also act much more directly to educate our workforce and ensure that this nation's collective skills are continually upgraded. Schools must lay the foundation by giving students a solid basic education and an ability to learn new skills and jobs. But the best place for students to learn most of the advanced skills of business is in business itself. I'd like to pass along a few ideas from a recent speech by Donald N. Frey, Chairman of Bell and Howell, about business investments in human resources.

Frey recommended that the private sector "assume a leading role

in the education and training of American workers." He urged American business to do more in-house training of employees, perhaps by emulating the company institutes that large Japanese companies offer. Employees should be retrained regularly throughout their careers to upgrade their skills . Furthermore, Frey said, in the case of jobs lost to automation or economic downturns, perhaps some sort of guaranteed retraining ought to be part of the negotiated labor contract. Frey's main point was that upgrading human resources ought to be as important a priority for business as modernizing plants and equipment. He further recommended that investments in modernizing a workforce be eligible for investment tax credits just as investments in plant and equipment now are.

No matter how successful our schools and businesses are in education and training, though, a hefty percentage of our potential workforce will still fall by the wayside. There are the millions of adult illiterates who can't get jobs because they can't fill out an application. There are the dropouts who are swelling these illiterate ranks everyday. And there are the tens of thousands who lose their jobs every year to automation or economic disruption; millions languish on unemployment lines, and many workers, having exhausted unemployment, simply vanish into the forgotten ranks of the "phantom jobless" because they do not have the new skills needed today. How can we get these people back to work?

One partial solution might be to set up a network of federally-financed education and training centers located throughout the fifty states and linked up to a central facility, perhaps in Washington, D.C. A central computer would keep track of job availabilities -- both present and projected -- all over the country, while individual

computers in regional centers would supplement this with constantly updated information from companies and economic forecasters in their own areas.

These centers could act as clearinghouses for all those having trouble getting back into the workforce -- or trying to enter for the first time. Classes could be offered in everything from basic reading and writing for those who can't fill out a job application -- to advanced courses in high technology and computers for skilled workers displaced from older industries. The very day a person becomes unemployed he or she would register at one of the centers and decide what types of retraining might be ~~preferable~~ most useful. And the types of training offered would be constantly adjusted according to the data compiled by the computer job banks.

Perhaps the most important thing American business can do in the next few years is to support the education reform movement, especially those proposals designed to attract more top students into the profession.

American teachers have already demonstrated their wholehearted support for reform. ~~The proof is~~ in the first nationwide poll of public school teachers, recently published by the Metropolitan Life Insurance Company ~~in conjunction with~~ and pollster Louis Harris. ~~After~~ examining the results, Harris concluded, "Teachers in the United States are wide open for change in reforming public schools, including those changes which will undoubtedly require sacrifices and extra effort from the teachers themselves. Far from resisting change, teachers want to be in the forefront of improvement of public education."

Are teachers committed to making the changes that will raise

professional standards and strengthen the profession? Indisputably. 82% said teachers should be required to take competency tests before earning certification and 90% say graduates should serve apprenticeships before they are certified as teachers. 57% would require periodic retesting of teachers in their subject matter, even though such a policy would make teachers the only profession in this country to hold itself to so lofty a standard. Finally, 84% said they would like to make it easier for incompetent teachers to be removed.

This is a profile of a group of professional who want to be fully accountable for their performance, and are dedicated to ensuring that the next generation of teachers will be at least as competent as those now in our classrooms.

We must keep in mind, though, that toughening up entry requirements and raising standards is likely, in the short run, to further reduce the shrinking ranks of prospective teachers. Many low scoring students will be scared off by competency tests and others will be disqualified during apprenticeship periods. This will be good in the long run, though, because it will weed out those unfit for teaching. Nevertheless, it means we must redouble our efforts to attract the "best and the brightest."

What must we do to make teaching an attractive alternative for today's top students? Well, there are three things: we must raise salaries so they are competitive with those of other professions; we must improve working conditions; and, perhaps most importantly, we must design a more professional career structure for teachers.

Raising salaries is a top priority, as every single one of the national reports has declared. The Rand Corporation report noted

that teacher salaries are substantially lower than those of virtually every other field requiring a BA. Specifically, the average starting salary of a public school teacher is about $12,700, while salaries for entry level jobs in most other fields requiring BAs range from $17,000-$18,000 up to $25,000. Now as any businessperson knows, if you want to get the best people, you have to offer them a salary at least as attractive as your competitor. Teaching is so far from being competitive that those starting out have to accept salaries anywhere from $5,000 to $12,000 less than those of their peers. It's little wonder that the vast majority of good students are unwilling to make this kind of sacrifice, particularly considering the other drawbacks of a teaching career nowadays.

Take working conditions. They have been deteriorating steadily. The Metropolitan Life findings tell the story. Nearly 50% of teachers said that overcrowded classes are a serious problem and 40% said lack of discipline is a serious problem. (Interestingly enough, in a 1983 New York Times poll of teachers nationwide, the exact same proportion of teachers, 40%, said that violence was a daily concern.) And 72% said they have to spend too much time on administrative tasks. Here you have a picture of a group of professionals who are seriously underpaid, overworked (because they are coping with classes stuffed with as many as 30-50 students), but unable to attend to the most important task they have, teaching, because they are distracted by all kinds of trivial jobs, such as checking the bathrooms for illegal smokers.

Consider for a minute the figures on discipline problems and violence alone. How many businesses would survive if 40% of their workforce came to work everyday afraid that they might be assaulted

-- or faced with having to spend much of their time disciplining a couple of employees who were disrupting everybody else? The obvious answer is that no business could survive under those conditions. Nor would the employees stand for it. They would just go elsewhere. Which is exactly what is happening in teaching right now. Many of the best people are walking out because they don't feel it is their job to be a policeman or a psychologist. And if we don't solve the problem of disruption and violence in our schools, the whole system is just going to disintegrate.

Competitive salaries and improved working conditions are critical changes, but there is a more fundamental reform that must take place before teaching will again be a valued and attractive career choice. It must in fact become a "profession" with all that professionalism implies. Ted Sizer wrote movingly of teaching's lack of professionalism in Horace's Compromise, his study of American high schools. He said, "Teaching often lacks a sense of ownership, a sense among the teachers working together that the school is theirs, and that its future and their reputation are indistinguishable. Hired hands own nothing, are told what to do, and have little stake in their enterprises. Teachers are often treated like hired hands. Not surprisingly, they often act like hired hands."

Teachers have long been treated like hired hands. For years they have been sent into the classroom, told what books to teach and which curricula to follow, instructed when they can go to the bathroom, and periodically told when some administrator will come to evaluate them. Now this sort of foreman/factory worker model may have made sense in the good old days. Then the principal was usually the only person in a school with a college degree or any advanced training,

and it was natural for him to tell teachers what to do. All that has changed, though, for most teachers now have just as much training and experience as the principals they serve under. It is time for veteran teachers to begin to assume some of the professional responsibilities that have been reserved for administrators.

Teaching is alone among the professions in not having a built-in career path. Lawyers move up to partner and senior partner, businesspeople climb from manager to vice president and even to CEO, and other professionals have similarly well-defined ladders upward. During their careers, most professionals gradually earn more weighty responsibilities, including increasing supervision of younger workers coming up.

Not so teachers. The vast majority of them progress no farther professionally after thirty years than they do after three. They end up in the same classrooms teaching the same classes to the same students. A few teachers get promoted to supervisor or principal, but there are no clearly-defined paths to these goals. And the fact remains that most teachers toil for decades in the classroom without gaining any real decision-making power over such fundamental areas as textbook selection, curriculum design, staff development and the establishment of professional standards.

This is a strange system. Teachers are the ones who use the textbooks and teach the curricula year in and year out and yet they are not consulted about decisions in these areas. Teachers also learn an immense amount about the craft of teaching over the years yet they are not consulted when it comes to training each year's new recruits. These kinds of inequities drain morale by depriving teachers of one of the main incentives for continuing to work hard: the idea that if

you excel at your job over a period of years, you will be given more challenging work and gain more influence over the direction and scope of your career.

What must we do? Well, we have to evolve a career structure for teachers that will make them feel they can move up, not just move along. We have to make teaching a true profession in which veteran practitioners who have proven their talents can move steadily upward through well-defined ranks, gain more decision-making power and status, and become the guides and managers of ~~the~~ new talent coming along each year. We ~~have to~~ must give veteran teachers the chance to make many of the decisions that are now made for them: selecting the right textbooks, designing new curricula, setting professional standards, overseeing apprenticeship programs for new teachers, even evaluating the performance of other teachers; in short, exercising the kinds of responsibility that normally accrue to seasoned professionals in ~~any~~ other fields.

Teachers just recently voiced their overwhelming support for this kind of career structure. In the Metropolitan Life survey, 87% said they would like career ladders to be established which would provide teachers with greater opportunities to take on more responsibilities and earn higher pay. Exactly what kind of career ~~ladder~~ structure will be the most effective remains to be determined -- and we will certainly learn much from trailblazing systems at work in states like Tennessee -- but it is clear that this concept is the wave of the future.

We are facing great educational challenges in this country: to provide our current generation of students with the high-level skills they'll need to adapt to the demanding, rapidly changing workplace of the 1990s and the next century; to cut our dropout rates and educate

the millions of adult illiterates so more and more Americans will be able to join the fight to keep American competitive -- and fewer and fewer will suffer in poverty and remain a drain on this country's resources; and to retrain those workers displaced from older industries who do not have the advanced, high-tech skills required by an increasingly automated, computerized and information-oriented economy.

Fortunately, we have the talent and imagination to meet these challenges, particularly as American business and American education team up in the critical effort to create a better educated citizenry and a more productive workforce.

The cornerstone of this effort will be the strength of the American teaching force. Our schools are the lifeblood of the American economy because they supply the most important raw material of all: an educated workforce. Without the best teachers in the world, we will not be able to educate the best workforce. And without the best workforce, America's position as a competitive force in the global economy will be in jeopardy.

One final thought. If we are determined to maintain the best teaching force in the world, we must convince today's students that teaching has the same attractions as other American professions: competitive salaries, good working conditions, the chance to advance steadily to more demanding and satisfying kinds of responsibilities, and the respect of the American people. When it has all these qualities, teaching will once again be a full-fledged profession, not ~~simply~~ a low status job performed by "hired hands." When we restore teaching to its proper position as one of the most challenging and rewarding of career choices, we won't have to worry about finding

enough good recruits. They'll be beating down our doors.