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EDUCATION AND INDUSTRY: HELPING TO CREATE CALIFORNIA'S FUTURE

Industrial League of Orange County

David P. Gardner, President  
University of California

February 23, 1988  
Irvine

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Thank you for your kind invitation to speak. It's good to be here--at last. We've been trying to arrange a mutually convenient date for some time, without success, but perseverance finally paid off. This is the first event of a three-day visit to Southern California, and I'm pleased this trip begins with the Industrial League.

For some time now I have been a member of an organization called the Business-Higher Education Forum, a group of CEO's and university presidents who meet twice a year to consider how we can strengthen ties between our two sectors. Having spent considerable time talking to corporate leaders about what worries them, I am struck by the extent to which people in business are concerned with what are traditionally considered educational issues.

They are concerned because too many young people entering the workforce these days fall short of possessing the requisite skills needed by their employers. The Wall Street Journal carried a story not too long ago about the New York Telephone Company and the exam it gives entry-level employees. At the beginning of 1987, New York Telephone administered the exam--a 50-minute test of basic reading and reasoning skills--to 21,000

applicants. Only 16 percent passed. According to one estimate, productivity losses caused by poorly educated workers, along with the costs of remedial training, add up to a price tag of \$25 billion a year. Basic skills are a concern not just in the classroom but in the workplace as well.

Business is concerned because an understanding of science and technology and a capacity to express oneself with clarity and effect and to think analytically, logically and creatively are qualities and traits that higher and higher proportions of the workforce will need to possess. Many employers wonder where they will get the well-educated and properly trained employees needed to stay abreast of events.

Business is concerned about competing internationally in what has inevitably become a global marketplace. Seventy percent of American goods and services are now in competition with the work of other countries. Unlike the situation at the end of the Second World War, when American goods dominated the global economy, foreign products and services are competitive, very competitive.

Whatever disagreements exist regarding the causes and cures of our economic problems, there is a growing consensus about one fact: our increasingly technological economy must be fed with more research, more education, and more training. A recent

Department of Labor study expressed concern that, absent vigorous and determined action, we will not have enough educated workers to fill the more demanding jobs the economy will create over the next fifteen years or so. In fact the Department of Labor predicts that "Between now and the year 2000, for the first time in history, a majority of all new jobs will require postsecondary education."

I am dubious about that figure, but I am in general agreement with the proposition that the economy of the future will demand more education and training, not less.

Since the end of World War II, new technology has been responsible for nearly half of all productivity increases in the United States. Technological innovation is, in fact, an increasingly powerful engine driving business and industry. California has the world's largest concentration of high technology industries, including traditional fields like agriculture, where technology is becoming a transforming force as well.

And at the individual level, it has been estimated that the pace of technological innovation will require most people to change occupations three times during their working lives, and to change jobs six or seven times.

Those states that invest in their human resources will possess a real advantage down the road, given the nature and character of our competitive environment.

In California, these economic and technological imperatives are further complicated by social and international imperatives. California, as you know, is becoming an increasingly diverse state, ethnically speaking. In the early part of the next century we are expected to become the first mainland state with a population consisting predominantly of members of minority groups. Much of this diversity is fueled by immigration from Pacific Rim countries, especially Mexico, Central and South America, and Asia. It is estimated, for example, that one out of every six of California's kindergarten-through-twelfth-grade pupils was born outside the United States.

Many of the young people from these minority communities--both native and foreign-born--do well in school and are learning what they need to know to take their place in the mainstream of American society. But too many do not. It has been estimated, for example, that in the Los Angeles Unified School District the high school dropout rate for Hispanic students runs to 45 percent between the tenth and twelfth grades. California cannot afford to lose the talent and initiative these young people represent, especially as they will constitute an ever-increasing percentage of new entrants to the workforce, and more and more

new jobs will require higher levels of education in the future.

Second, California, more than most states, is enmeshed in an international economy, not just a regional or national one, and this reality cuts across virtually every aspect of our state's highly diversified and vibrant economy.

What this means, in my view, is that our children must receive an education fitted to the times, one that reflects the diverse and pluralistic world in which they will live and work; and we could be doing much more than we are, not only in the schools but in our colleges and universities as well.

The broad trends I have been discussing--the increasingly technological character of our economy and the accelerating internationalization of our world--pose special challenges for higher education. And they afford us new opportunities and fresh impetus to work with business and industry. Allow me to comment on how the University of California is responding to this opportunity, with special emphasis on UCI:

First, we are encouraging university/industry research partnerships. A number of companies in Orange County have offices on or very near our Irvine campus and take advantage of the opportunities such proximity offers. UCI also has industrial affiliate programs in a number of important fields--

medicine, engineering, management, computer sciences, and social ecology--devoted to speeding up the transfer of new technology and information to the marketplace. UC Extension at Irvine worked with business leaders a few years back to design a program in an entirely new field--biomedical engineering--to train engineers for the design and construction of pacemakers and other state-of-the-art medical devices--a program, I understand, that has been very successful.

Second, we are working with the schools to help improve them. We have several different kinds of programs. Some sponsor research on issues relevant to schooling. Other programs are aimed at working with teachers to improve teaching; our writing and math projects have been especially successful. Still others work directly with students--the MESA program, for example, encourages young minority students to prepare for the study of science and engineering. Finally, we have a host of campus-based programs. A particularly outstanding example here in Orange County is Project STEP, in which UCI personnel work with colleagues in the Santa Ana Unified School District to assist with teacher training, the development of curricula, and service to both students and their parents. Project STEP has received both state and national recognition for its accomplishments.

One of the most encouraging developments in recent years has been the willingness of business and industry to become involved

in assisting the schools. An excellent example is your TIE project (Together: Industry and Education) and the success it has had in helping young people learn about the American economic system.

Third, there are programs to help California prepare for its international responsibilities. UC has inaugurated a new universitywide research program devoted to topics of interest to California as a Pacific Rim state--including such subjects as trade, finance, economic development, cross-cultural communication, and the like. We have expanded opportunities for our undergraduate students to study abroad, especially in Pacific Rim nations. We have established the University's first new professional school in 20 years on our San Diego campus--the Graduate School of International Relations and Pacific Studies. It is the first of its kind in the nation to look west to the nations of the Pacific Rim instead of east to Europe, and its purpose is to prepare the professionals in business, government, and the public sector that California will need to take advantage of its opportunities in this arena.

Since we are meeting in Orange County, let me also mention another new venture, one that involves UC Irvine--the Humanities Research Institute. Established last fall, the Institute serves as a universitywide center for research and scholarship on the humanities. And although its focus is the humanistic



disciplines, not international affairs, the Institute will attract scholars from all over the world and contribute its own special international dimension to the University, the Irvine campus and the communities in proximity to UCI.

California has a challenging future: an expanding population, increasing ethnic and racial diversity, and pressures to adapt and compete more vigorously in the international marketplace. We begin with some formidable advantages. California is the sixth largest economy in the world, and by the turn of the century we are projected to become the world's fifth largest. We have a dynamic and diversified economy, one that is particularly strong in the new knowledge-based industries such as microelectronics and biotechnology. We have an excellent system of public and private universities, and what may very well be the world's best educated and highly trained workforce when measured as a percentage of those employed here. California is the most vibrant, creative, mobile, unsettled and unsettling state in the nation.

Since the days of the Gold Rush, California has been hospitable to the entrepreneurial spirit and to new ideas, and welcoming of persons from throughout the world. (Fifty percent of Californians were born some other place and 15% were born abroad.) Californians have also been willing to invest in the state's educational system and in the infrastructure needed to

keep and enlarge California's lead.

California can successfully negotiate the waves of change that are gathering on our shores, but we need to view our challenges in terms of a long distance race, not a sprint. While I believe there is nothing inevitable about our being successful, the odds favor us so long as we retain an openness to new ideas, our appreciation of other peoples and cultures, our respect for learning, and our civility.