

INVESTING IN CALIFORNIA'S CHILDREN

**Transcript of a talk by
President Richard C. Atkinson
at the Senate Fiscal Retreat
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Let me begin by saying what a pleasure it is to participate in these retreats. I hope that the good turnout of California legislators is an indication that this annual event is as useful to you as it is enjoyable for us. I am deeply appreciative of the outstanding job done by Andres Jimenez and his staff, who consistently make the difficult look easy.

The theme of this retreat is investing in California's children. From a UC perspective, I could go in various directions with that topic--our preparations for Tidal Wave II, the importance of ensuring that higher education is both accessible and affordable to the state's young people, the growing role of the University of California in improving K-12 education. Each of these topics is important and deserves attention. But my remarks today will focus on an issue of special relevance given California's demographics and our future as a society: diversity in the student population at UC, particularly in light of Proposition 209 and the Regents' action regarding admission to the University, known as SP-1.

UC and the California Economy

Before I turn to that subject, however, let me make a few personal remarks on several of the topics addressed in the program for this retreat. I was interested to note that in her talk to this group Professor Laura Tyson commented on the role of education and of research and development (R&D) in economic growth. When I was director of the National Science Foundation in the mid-1970s we established a research program focused on the role of R&D in stimulating economic growth; though novel at the time, that field of economic research has prospered over the last 20 years and has led to an important development in economics known as "new growth theory."

At last year's retreat I talked about the contributions of R&D to economic progress and about the role of our great research universities in boosting economic productivity. I am pleased, therefore, that in her remarks Professor Tyson spelled out the important contribution education makes to economic growth--not just K-12, college, and graduate education, but throughout life. The dual contribution of education and research has become a very strong argument for the crucial role UC plays in the economic growth of the state of California.

Early Childhood Development

Another topic on your retreat agenda is early childhood development. I was actively involved in the establishment of Project Head Start during the Johnson Administration's War on Poverty.

Many Head Start programs for two-to-five-year-olds were initiated in the 1960s, and in some cases follow-up efforts were made to evaluate their effectiveness. The initial evidence was mixed. Many of the assessments were poorly designed, and some of the early reports suggested that Head Start had no impact on the lives of the children who went through the program. Fortunately, other studies were conducted that were more extensive and methodologically sound; some followed up on children as long as 15 years after they finished the program. One of them was a study with which I was associated, known as the Harlem Day Care Study. Because of my involvement with that project I was in Harlem on April 4, 1968, the day Martin Luther King, Jr., was assassinated. The experience is vivid in my memory. I will never forget the wave of shock and grief that swept through the community on that day.

The Harlem Day Care Study involved three groups of randomly assigned children, two groups that went through somewhat different Head Start programs and another group that served as a control. Some may find it upsetting that in the interests of assessment we deliberately excluded some children from a potentially valuable educational experience. However, it is important to understand how essential a control group is for accurate assessment of the effectiveness of a program like Head Start. The Harlem Day Care Study was carefully designed and carried out, and it indicated that early intervention produces academic and social benefits last into high school. A major finding of this and other studies is the importance of parental involvement; those Head Start programs that were successful emphasized active involvement by the parents.

Instructional Technology

I was also interested in Todd Oppenheimer's presentation to the retreat on the limits and shortcomings of educational technology. I did not hear him speak yesterday, although I talked with him at dinner last night and have read his *Atlantic Monthly* article on computers in the classroom. His views are provocative and in some cases incontrovertible. It is true that some computer-based educational systems have been unsuccessful. It is also important, as he argues, to weigh the value of investments in computers against investments in other educational interventions.

But Mr. Oppenheimer ignores considerable solid data demonstrating how useful computers can be in the learning experience. I spent many years at Stanford University doing research on computer-based systems of instruction and developed a computer-based reading program for grades K-3. A variant of that program is now being used in schools around the country (distributed by the Computer Curriculum Corporation) and a number of other commercially produced programs are available as well. We have extensive experimental data on these programs, and their value is well established.

I was reminded of that recently by a personal experience. My two grandchildren, who live in Florida, use my computer-based reading program in their school. There are 5 terminals in their classrooms. Every day the class breaks up into groups and students spend 20-30 minutes in the morning and again in the afternoon doing either math or reading on the computer. It is stunning to observe how enthusiastically and how quickly these children take to computer-assisted learning.

A more objective antidote to Oppenheimer's claims is available in the November 17, 1997 issue of the *Wall Street Journal*. In a section devoted entirely to educational technology, one article discusses the lessons we have learned, and the mistakes we have made, using computer-assisted instruction. I am simply going to list the section headings in that article because they provide an excellent shorthand summary:

- Computer labs are a lousy location for computers.
- Struggling students often get more out of computers than average or above-average performers.
- Most teachers still don't know how to use computers in class.
- School systems must plan their computer use carefully.
- Computers are a tool, not a subject.
- Kids flourish when everyone has a computer -- but schools aren't spending enough to guarantee that.
- Schools can't handle hand-me-downs.
- Computers don't diminish traditional skills.
- The Internet and e-mail excite kids by giving them an audience.
- Kids love computers.

Let me repeat that last point: children love to be engaged at a computer terminal. If the computer program is a good one, it can have a great impact.

My response to Mr. Oppenheimer is that there have been some failures in applying computers to instruction but some clear successes as well. And while esoteric arguments can be made about the presumed negative effects of computer use on creativity, if we delved into the historical record we would probably find that the invention of the printing press stimulated similar fears about *its* impact on human creativity. Such fears underestimate how ingenious human beings really are. The advent of the computer may mean that human creativity will take different forms, but I do not believe it will dampen or constrict the creativity of those who use it. Quite the opposite may be the case.

In my judgment, computer-telecommunication technologies are leading us into a transforming period in the history of education. The nature of the educational process has not changed much in 2500 years. But today we are moving into a dramatically different environment. In the early days, computers were simply inadequate to the demands--the systems were too costly and cumbersome, the audio and visual displays neither rich enough nor powerful enough to be useful to learners. But at last we have platforms whose sophistication is equal to the task, and that in turn is encouraging people to invest the kind of time and energy necessary to create truly interactive curricula for computer-based learning.

UC and Instructional Technology

No university in the country has been more in the forefront of educational technology than the University of California. I could not possibly cover all of the ways in which we are expanding the use of technology throughout our system, but let me mention a few examples. Computer-augmented classes are taught on all nine campuses; these include calculus, chemistry, biology,

and foreign languages, among others. Many courses have a home page -- at UCLA, in fact, every course taught in the College of Arts and Sciences is required to have a Web page. Almost every UC student has access to e-mail, and it is an integral part of many courses.

One of the most exciting examples of how technology is transforming learning is the California Digital Library. This will be a virtual library that will make UC's digital collections available via computer to UC faculty and students, and ultimately, we hope, to all Californians and indeed the world. We announced its formation last fall and the appointment of a founding librarian. We are proud of this milestone. In March we will also unveil the California Research and Educational Network (CALREN-2), a state-of-the-art system primarily funded by the federal government, that will link all nine UC campuses, the three Department of Energy Laboratories, Stanford, and Caltech. CALREN-2 parallels a national effort called Internet-2 to increase the bandwidth of circuits by a factor of 100 or more over the current Internet system. CALREN-2 is the next step on the Information Highway.

We are making increasing use of instructional technology in our work with the K-12 schools to strengthen the education of California's children. A good example is UC Nexus. The purpose of this systemwide initiative is to make UC's educational technology resources available to K-12 teachers and students alike, and thereby to promote the use of these technologies in California's schools. Through UC Nexus, for example, teachers are working with UC faculty on developing creative ways to use computers and the Internet as tools for instruction. We are working on a Website that will serve as a link among UC's resources for K-12 teachers and students, offer interactive tools for teachers, and eventually provide K-12 students with online mentoring and tutoring. An important purpose of this program is to encourage our campuses to expand partnerships with schools in their region, and to include other postsecondary institutions and local businesses in these partnerships. It is one of the ways we are expanding our outreach efforts, as mandated by The Regents when they approved the changes in undergraduate and graduate admissions known as SP-1.

Diversity at UC

And that leads me to the topic of diversity at UC. The University will clearly fail in its responsibilities to California if we do not reflect the population of this state in our student body. For 30 years affirmative action was a powerful tool for UC; with Proposition 209 and SP-1 (UC Board of Regents resolution in July 1995 that prohibited the use of race and gender in UC admissions) that tool is no longer available to us. We are proud of what we have accomplished in the past. UC's outreach programs have been remarkably effective -- not as widespread as they should be and will be, but effective nonetheless. I would say, with the clarity of hindsight, that not enough attention was given to the lower grades; that is a shortcoming we will seek to correct in the future.

Soon after the passage of SP-1 we established an outreach task force composed of leaders from the University, the business community, the schools, and other groups to review our outreach programs to see how they should be modified in light of SP-1, and to explore new activities and funding for outreach. That report is now completed and the Regents have endorsed its recommendations. At last week's Regents' meeting I announced what we are calling the

Outreach Action Plan to implement the task force report. The plan focuses on all levels of education--the early grades, junior high, and high school. We will expand our efforts in terms of interventions in the early grades and junior high, especially through partnerships between each of our campuses and the schools in its region. We will emphasize getting youngsters and their families to think in terms of moving on to, and preparing for, a university experience. In high schools we will concentrate on attracting students from all backgrounds to think about applying to UC, a topic I will return to in a moment.

Let me mention a few other examples of how we are seeking new paths to diversity:

- One effort that is off to an excellent start is an after-school program called UC Links. Most of our outreach programs have concentrated on junior high and high school students. UC Links focuses on kindergarten and the early grades, and seeks to build an educational pipeline to college by giving disadvantaged children the opportunity to learn critical reading, math, and computer skills at the very outset of their education. We have programs at about 20 sites around the state. UC Links is unusual in that it combines all three missions of the University--teaching, research, and public service. K-12 students and the community benefit from the availability of after-school activities for low-income and minority children; faculty gain valuable research opportunities into culture, language and learning. And UC undergraduates acquire experience not only as teachers and mentors but as researchers, because they are expected to produce an analytical paper based on their work with the children and the program--one of the advantages of undergraduate education at a research university.
- Another successful after-school program run by the University is ASAP--the After School Activities Program. ASAP has 24 centers (21 in the Los Angeles area and 3 in the Oakland area) located in housing projects and the inner cities.
- Teacher training is another aspect of our outreach activities. The preparation of teachers is principally a California State University responsibility, but we plan to expand our work in this area because the need is great, and nowhere is it greater than in schools that serve disadvantaged students. Recent estimates suggest that California will require between 17,000 and 30,000 new teachers per year over the next decade. Our thrust will be to make it easier for UC students majoring in a subject--math or history, for example--to do additional work to gain a teaching credential.

We estimate that we are spending about \$60 million a year on our various outreach activities. We have committed to doubling that to \$120 million annually. Our funding strategy is built on the idea that the goal of our outreach efforts--improving the academic preparation and educational opportunities available to California's children--is one we share with the State, the K-12 schools, and the Federal government. Therefore the costs should be shared as well. So we are reallocating

money within UC, asking for help from the State (the Governor has included \$5 million in his proposed budget for next year) and working in partnership with K-12 to attract funds.

We also have mounted a vigorous private fund-raising program in this area; foundations and others have indicated they are interested in supporting these new activities. The federal opportunities are also interesting. A few weeks ago President Clinton proposed several programs that are perfectly tailored to what we are doing. We are well positioned to compete for funds in this area.

So much for our longer-term plans. What about next fall? You may be surprised to learn that I am somewhat optimistic. Why? We are active in outreach; applications are up about 8 percent overall and the increase has occurred for underrepresented minorities as well. That is important because we were worried that an unintended consequence of SP-1 might be the message that UC no longer welcomes underrepresented students. We have worked hard to dispel that impression. It is enormously encouraging that the application numbers are so promising for the fall.

Another reason I am optimistic is that we have changed our admissions process so that it is less driven by SAT scores and grades and more by a comprehensive assessment of students' potential to benefit from a UC education. I call this the "opportunity-to-learn" factor -- it assesses the opportunities (whether many or few) students have had at school and in their community, and how much they have made of these opportunities. The opportunity-to-learn factor is intended to help admissions officers ensure that we give students the fullest possible evaluation of their talents and potential. This is an extraordinary challenge, given the thousands of applications received each year, but we believe we will succeed.

I want to mention one other factor. Under Proposition 209 we cannot continue our K-12 programs that are set aside just for underrepresented students, although we can and will be focusing on schools that have a low percentage of students coming to UC. But under Proposition 209 we *are* permitted to target students in terms of providing information. This fall I sent a letter to 13,000 promising California high school students urging them to consider the University of California for their education. All 13,000 students were from low-income, underrepresented, or rural backgrounds. I was stunned by the response. "Your letter has bolstered my hope and confidence," one student wrote, "and I won't let your good wishes for me down: I'll apply right away." It was exciting to see the enthusiasm of these students, and many of the replies were very touching. The ability to target potential applicants for information gives us considerable flexibility to seek out underrepresented students and encourage them to prepare for and apply to UC.

Concluding Remarks

I have talked about my hopes; let me conclude with one of my anxieties. A great deal of planning is underway, not only by colleges and universities but also by private and public groups, for the future of higher education in this state. I worry that this planning is going forward against the backdrop of the recession of the early 1990s and the conservative economic growth estimates of those years. If we build on those narrow foundations, we will guarantee a mediocre future for California. I am looking forward to Larry Kimbell's economic forecast later this morning, which

I suspect will support the idea that California has come storming back from the recession and is ready once again to invest in its infrastructure. No element of that infrastructure is more vital than maintaining the best and strongest public higher education system in the world. And as I like to point out to members of the legislature, UC is a bargain for California's citizens--in exchange for the little more than \$2 billion supplied annually by the State, UC generates \$11.5 billion in expenditures.

As you know, the punishing years of the early 1990s left UC with near-disastrous budgetary shortfalls; if just our basic needs had been funded in those years, our annual budget from the State today would be over \$3 billion, not the \$2 billion we currently receive. Our student-faculty ratio jumped to 19.5:1 (it was 14.7:1 in the mid-sixties). We took many actions--some temporary, some permanent, some obvious, some drastic--to sustain the University's quality and to take all eligible students and provide them with the classes they need to graduate on time.

Over the past four years we have had stability in our budget, but not the funding needed to deal with the surge of students expected in the next decade. UC should be expanding its facilities and hiring faculty to deal with the anticipated Tidal Wave II.

I expect that significant federal funds will be available in the coming years for the support of students and for the research mission of universities. To the extent that State funds are also available we can leverage the federal contribution and be in a position to maintain the University's greatness--and thus its value and usefulness to this state. We need a bolder view of the future than is evident in California today. I hope you will help us craft such a view as a means of ensuring the future prosperity of the Golden State.