# 26. Message to the Nation: Do Not Adjust This Vision

July 5, 1985

Recently, the higher education debate in Washington focused on the budget. The administration had proposed sharp reductions in aid to colleges and universities. But Congress resisted these recommended cuts and federal aid to higher education appears, for the moment, to be secure. While Congress has yet to act on the final figures, it now seems clear that current funding levels will be substantially maintained.

At the same time, many leaders of the Congress see a need for change. There is overlap and duplication in federal aid to students. Many worry about the ever-increasing loan burdens the students are assuming. Obligations of $10,000 to $20,000 are not uncommon. And some argue that current programs of grants and loans unduly benefit the privileged.

Still, while conceding problems, there is the nagging feeling that the administration does not understand - or is unwilling to accept - the historic partnership between the federal government and higher education. In this context, the Board of Trustees of The Carnegie Foundation for the Advancement of Teaching recently issued a policy statement reaffirming the vital federal link to the nation's colleges and universities.

The Carnegie trustees, most of whom are heads of higher learning institutions, wanted to be sure that lawmakers understood that education serves not only students and institutions but the nation too. Reforms should strengthen not weaken the partnership between the government and higher education.

In the Carnegie statement released last month, the trustees said: "America began with the conviction that for democracy to work, education is essential. Those who charted the future of this nation linked democracy to knowledge.

"George Washington said 'Knowledge is . . . the surest basis of public happiness.' John Jay declared that knowledge is 'the soul of the Republic.' And in 1778, Thomas Jefferson drew up an education plan 'to raise the mass of the people to the high ground of moral respectability necessary to their own safety, and to orderly government.'

"In these convictions, the nation built public schools for universal education. Colleges were established to train leaders and serve America in peace and war. Private and state support increasingly was supplemented by federal assistance, resulting in a higher education system unequaled in the world.

"Today the vital federal connection to our colleges and universities is being challenged. After decades of strong bipartisan support, the current debate about budget priorities has been focused almost exclusively on numbers and on the negatives of higher education. The larger perspective has been lost. We hear how much education costs, not how much it is worth. We are told that students are exploiters, rather than tomorrow's leaders. And we are reminded of the abuses, not the benefits of higher education."

The Carnegie statement, entitled *Sustaining the Vision*, went on to note: "We believe that the moment has come for the historic partnership between the federal government and the nation's colleges to be reaffirmed. Educational obligations are increasing and federal support for colleges and universities must increase, too. The nation's greatest strength is not its weapons but its people. Our greatest hope is not technology but the potential of coming generations. Education is, as it has always been, an investment in the future of the nation."

The words of the Carnegie Trustees resounded loudly. Senator Robert Stafford, Vermont Republican and chairman of the Senate Education Subcommittee, in endorsing the statement, reminded colleagues that although the cost of student aid is substantial, "We must keep in mind that what we choose to cut today, will be subtracted from the future capabilities and achievement of those men and women who would be denied higher educational opportunities. Their individual loses add up to our national detriment."

On the Democratic side, New York City Congressman Mario Biaggi told House colleagues that the Carnegie statement "contains an important message at a time when those of us who are long-time advocates for federal higher education programs are being consumed by budget-cutting fever. We once pointed with pride to our efforts to enhance educational opportunity to all our citizens, regardless of income. We now find ourselves in a defensive posture that I consider to be counterproductive and contrary to public interest."

Congressional support for the Carnegie view was echoed in national media from coast-to-coast. The *New York Times*, citing a central question posed in *Sustaining the Vision*, asked "How much of America's human resources can we afford to waste?" The response: "To an administration bent on retreating from federal aid to higher education, it's a question worth repeating."

An editorial in the *Pittsburgh Post-Gazette* said: "Clearly the Carnegie Foundation's warning . . . needs to be heeded. The *San Diego Tribune* took special note of Carnegie's support for academic research. "It must not be shorted. Our industrial future depends on it."

Why this outpouring of support for a statement reaffirming higher education? While everyone acknowledges the need to help to reduce the budget deficit there appears to be a growing conviction that education and the nation's future are inextricably interlocked.

The Carnegie trustees reaffirmed this larger vision. Their statement said: "Because throughout its history America has linked democracy to knowledge, our goal increasingly has been to expand the opportunities for both school and college education. If we sustain this vision, there is no limit to what the energies of our people can produce. But if we distort it, we will surely breed cynicism and despair. And we will be a different people from the one, in our finest moments, we have always believed ourselves to be."

The debate over the federal role in higher education will persist in the days and years ahead. As lawmakers continue to probe this basic issue, they should recognize that public support for higher education is needed to serve the public good. As the Carnegie Trustees put it: "The aim of education in our democracy is not only to prepare the young for work but to enable them to live with dignity and purpose; not only to generate new knowledge, but to channel knowledge to humane ends; not merely to learn about our civic institutions, but to shape a citizenry that can weigh decisions wisely and promote the public good."

# 27. Computer Aids for the Discerning Palette

August 2, 1985

American higher education is caught up in a computer revolution. A survey revealed that about 40 percent of today's college students use a campus computer facility to analyze data or to learn programming. Even more significant, about half said they had used a computer in school before they came to college.

About a dozen US colleges and universities are now requiring incoming students to get a personal computer, along with textbooks. Drew University in New Jersey is one example. Applications at Drew increased almost 50 percent after the requirement was announced, the Scholastic Aptitude Test scores of incoming students rose as well. Last fall, when the director of the computer program asked a group of freshmen if they were using their computers, it was, he said, "like asking them if they were using their chairs."

On most campuses these days the computer is a word processor, used by faculty and students for writing and revising. It is also used by administrators for admissions, personnel records and budgeting, for example. Computers are important to librarians, used for information storage and retrieval. And increasingly, they are being used by faculty to enrich instruction.

Recently, the Carnegie Foundation researchers visited campuses from coast to coast. At one eastern university we found a fine-arts classroom free of oil and turpentine smells. There were no easel stands under muted lighting, no dropcloths beneath the students' feet. Instead, the aspiring artists sat in a semicircle and stared at computer screens. One touched a metal stylus to a pressure-sensitive electronic pad; as she did so, the colors displayed in the lower third of the screen mixed to her specifications. The student could choose from 256 colors in this computerized palette created by her professor and blend them with the others in hundreds of subtle combinations. When the shade satisfied her, she used the stylus to transfer it to the abstract drawing waiting further up on her screen.

Next to her, another student worked on a black and white self-portrait. Still another experimented with the stylus, putting hundreds of tiny dabs and dots of color together to create a picture. The professor himself used the stylus with ease, moving between the menu of line, shape, and color and his own abstract drawing. He considered the computer just another artist's tool, a technological paintbrush that expands creative possibilities.

At Drew University, rhetoric professor Jacqueline Berke says that, because of word processors, "our understa· ding of the way people write - the stages, the processes - has changed. The phase of writing that is actually most important is revision. Yet how much time does the poor student give to revision?" She recalls a line from a journal: "The computer makes revision a playground instead of a punishment."

Psychology students at Carnegie-Mellon use an IBM personal computer to generate experimental models. The personal computer allows them to test the data with a variety of statistical tools. An actual experiment with just one set of data would take most of a semester to finish. With the computer, the task is completed in several days. Stanford historian, Carolyn Lougee, has created a computer program about Louis XIV. In this academic game, each class member takes on the role of a young Frenchman in 1638. Each student collects rents and grain from the tenant farmers on his land and tries to buy an advantageous position at court. The goal is to introduce students to the functioning of a complex 17th-century society.

Beyond these creative experiences, there is now talk of something called the "wired university." Carnegie-Mellon, MIT, and Brown are bringing "scholars' workstations" to the campus. Some call this new

machine a 3-M". It has one million bytes of memory, handles one million instructions per second, and has a display screen that measures one million pixels - or, one million of the minuscule dots that make up a television picture.

By 1990, Carnegie-Mellon expects to have 7,000 workstations on campus so that personal computers will out-number the present collection of telephones. Brown University's vision of a "wired university" sounds most ambitious of all: 10,000 workstations will be linked in a campus system that is expected to cost between $50 million and $70 million.

But there is another side to all of this. While these futuristic plans were getting off the ground, another computer system was being installed at a small southern college visited by Carnegie researchers. At this institution - far removed from Brown and MIT - the director of computer services is a professor whose course load has included anatomy, zoology, and biology. The professor's new job with computers keeps him at work at least 50 hours each week. And when be decided that the college could use another computer, he brought in his own machine from home.

The professor put together the college's two-computer "system." Seven terminals are available for student use and eight are scattered throughout administrative offices. The faculty member did all the computer programming, and he teaches the students to use them. All together the system cost $60,000 - two-thirds of which came from the federal government.

Those are the extremes: the 21st century wired campus, and the campus with a cut-rate terminal or two. The harsh truth is that while technology can be of service to higher education - administratively, pedagogically and for research - a college cannot do it on the cheap. Like the library, a basic service must be put in place. And, like the library, the service must be nourished at perhaps an even higher cost.

Thus, behind the computer revolution there is the disturbing story of the haves and have-nots in education. And once again, two groups of students lag behind. The loss begins before students come to college. Poor families frequently do not have home computers and often girls in school are not encouraged to use computers. And poor school districts are unable to keep pace with fast changing technology. Nor are they able to respond adequately to teacher training needs.

Leslie Wolfe, director of the Project on Equal Education Rights observes that "everyone has to have equal access to computers, just as they do to pens, pencils, blackboards, and teachers." That's true, of course. But the wired university will be staggeringly more costly than pens and pencils. And as the new electronic revolution reaches into all levels of education, the widening gap between the winners and the losers, rich and poor, may, in fact, become a yawning chasm. Technology, which has such enormous power to unite, should not be permitted to become a divisive force.