Education White Paper

by Russell Edgerton

Preface

In January, 1997, after serving for 19 years as President of the American Association for Higher Education (AAHE), I began a new assignment as Director of Education for the Pew Charitable Trusts—a Philadelphia-based national foundation that makes grants in six major program areas. My immediate predecessor had focused the Education Program's $35 million annual budget largely on K-12 issues. My mandate was to bring forward a new grant program aimed at the improvement of higher education. My first major task –a rite of passage for new Pew program directors—was to write a "white paper" for Pew's Board of Directors that set forth my view of what the focus of this grant program should be.

For the first six months of my new job, I lived a double life. During the day I would go to my new office, meet constituents, read proposals, and do the myriad chores that foundation program directors do. Evenings I would return to my temporary apartment at the Korman Suites, stare out at the Philadelphia skyline, and stew for hours about how to make the kaleidoscope of issues that were swirling in my head into a coherent statement about what's really important and why. This paper is what finally came out.

The Pew Board of Directors approved the paper in September, and in doing so encouraged me to share it broadly with colleagues and stakeholders outside the foundation. In the fall of 1997, three colleagues—Lee Shulman, President of the Carnegie Foundation for the Advancement of Teaching, Stan Ikenberry, President of the American Council on Education, and Richard Chait, Professor of Higher Education at Harvard University—all graciously hosted seminars that brought leading educators in their regions together to ponder the argument and it's implications. From these occasions the word spread that the white paper was available, and the Pew Charitable Trusts began routinely fulfilling requests for complimentary copies.

Many of those who requested the paper did so in order to get a bead on what sort of proposals the Education Program might support. But numerous colleagues also reported that, fund-raising aside, the synthesis and argument presented in the white paper helped give direction to their own

thinking. Soon we learned that the paper was being used as a background paper for planning retreats, seminars and training programs in higher education, and other such occasions. It seemed to have value beyond its original purpose of laying out a case for Pew's grant-making agenda.

In January 2000, I left the Pew Charitable Trusts to become Director of the Pew Forum on Undergraduate Learning – an initiative that serves as an umbrella for the higher education grantees that Pew supported in the 1997-2000 period and as an incubator of further ideas about responsibility and accountability for undergraduate learning. Given the purposes of the Forum, I agreed that the Forum would take over from the Pew Charitable Trusts the task of disseminating the white paper to those who were interested in it.

Needless to say, the white paper no longer serves as a guide to the grant making priorities of the Pew Charitable Trusts. Readers interested in Pew's current priorities should consult the Pew Charitable Trust's own web-site: www.pewtrusts.com.

At this point in its life, I believe the paper might serve two purposes. Many of the institutions that received Pew support in the 1997-2000 period are now members of the Pew Forum and continue to work toward the larger goals outlined in the white paper. So some readers might find the paper useful as a statement of the larger "common cause" that over separate initiatives are pursuing from a number of different angles.

Beyond this, readers may continue to find the paper a helpful statement of the key problems that confronts higher education and the directions that reform should take.

If I were writing it today, I would make more of the new forces that are reshaping the entire enterprise. Instead of focusing on conditions of "the sobering 1990's", I would call attention to the new 21st century landscape—trends such as the rising influence of the marketplace, the growing interest in what students can actually *do* with the knowledge they have acquired, the growing tendency of students to assemble courses from multiple providers, and the implications of new technologies. But having done that, I would still conclude that the problems the white paper identifies—cost, quality, and connection to the public agenda—are the key problems; and I would still sound the trumpet for higher expectations about what colleges and universities can contribute to student learning.

Russell Edgerton
Director, Pew Forum on Undergraduate Learning
Washington DC, March 6, 2001

Chapter I—A Three-Minute History of Higher Education
Chapter II—The Fall from the Pedestal
Chapter III—The Challenge of Costs
Chapter IV—The Challenge of Quality
Chapter V—The Challenge of Quality II: Inadequate Incentives
Chapter VI—The Challenge of Connection
Chapter VII—A Higher Education Agenda for PCT
Appendix I: *Summary of Goals and Objectives*
Appendix II: *Notes on Sources*

Chapter I—A Three-Minute History of Higher Education

Higher education in America is now a sprawling enterprise of nearly 3,600 institutions serving 14.3 million students. The word "college" often summons a picture of fresh-faced young students strolling around a park-like setting, often paying exorbitant tuitions for the privilege of doing so. But the reality is quite different. Some 11.1 million of the 14.3 million students, nearly 80 percent of the total, attend public institutions. About 5.3 million of these students, close to 40 percent of all students, attend two-year public colleges where the annual tuition averages $1,387. Private liberal arts colleges—still our billboard image of what college is—enroll fewer than 5 percent of all students. The character of students, too, has changed. More than half of all undergraduates are age 22 or older; almost a quarter are 30 or older. And 40 percent of the total student body is attending college part-time.

It is useful to keep this snapshot in mind as we talk about the abstraction "higher education." But it is also important to see more than a snapshot. Higher education is an unfolding story, part of the epic tale of America's own evolution from an agricultural society into an industrial society and now from an industrial society into something new. Here is a brief version of this tale.

In the beginning there was Harvard. After erecting shelter, a house of worship and a framework for government, one of the first things the Massachusetts colonists did (in l636) was found a college modeled on Cambridge and Oxford, where many of the colonists had studied. Their aims were twofold: to pass on their religious values and to recreate a bit of old England in the new land. British officials in the colonial service routinely dressed for dinner in the jungles of Africa. The early Puritans, in the same spirit, founded themselves a college.

Before the colonies had joined to create a national government, there were nine colonial colleges. And in the l800s, as the settlers moved west, founding colleges was undertaken in the same spirit as canal building, farming and gold mining. The Dartmouth College court case of l819 legalized the existence of a growing private sector in American higher education. The states, retaining degree-granting charters in their own hands, liberally handed out charters. Religious denominations, competing with one another, established "hilltop" colleges in almost every major new settlement. All in all, by the Civil War, America had 250 colleges, of which 182 still survive. England at the time, with a population of 23 million, was managing nicely with four universities. Ohio, with a population of 3 million, boasted 37 colleges!

The colonial college of the pre-Civil War days was more like what we would call a prep school than a modern-day college. An upright clergyman always served as president. Faculty members were typically young bachelors who themselves aspired to be clergymen. There was little specialization: the faculty taught everything. All students studied a prescribed curriculum. The fundamental disciplines were Latin (the language of the law, the church and medicine) and Greek (the language of Renaissance learning).

But in the end, the colonial college was able to serve the needs of a nation that, after the Civil War, was caught up in an industrial revolution. The scientific enterprise began evolving into many new fields and disciplines. As Americans moved from the farm to the factory, work became increasingly specialized. A new middle class grew up conscious of the need to acquire specialized knowledge and skills. Members of this emerging class began to see their futures in terms of the tasks they would perform in the industrial economy rather than their reputations in their local towns. Tracks of achievement developed, leading into various occupations and

professions, and people began having a sense of careers and professions that never previously existed.

All this produced a good deal of dissatisfaction with the traditional, classics-oriented, liberal arts college. In 1850, the president of Brown noted that the nation had several hundred colleges, 47 law schools and 42 theological seminaries, and yet not a single institution "designed to furnish the agriculturalist, the manufacturer, the mechanic, or the merchant with the education that will prepare him for the profession to which his life is to be devoted." With the passage of the Morrill Act, signed by Lincoln in the middle of the Civil War, the federal government began providing these resources.

Against this background arose the phenomenon historians call "the university movement." Since the Confederation period, the federal government had granted public lands that could be sold for the purpose of endowing state universities. Many states chartered public universities, and in 1825, Thomas Jefferson's University of Virginia became the nation's first university. But it was only after the Civil War that the university movement really flowered.

"Flowered" is the right word, for just as there were many varieties of colonial colleges, so there arose many varieties of universities. Some were established from scratch. Others came into being through the metamorphosis of the colonial college into a university. In 1871, Harvard president Charles Eliot introduced the principle of elective courses into the Harvard curriculum. With electives needing to be taught, Eliot could hire faculty who were specialists to teach these courses and advertise these courses to prospective students. In one brilliant stroke, he thus engineered the transformation of Harvard College into Harvard University. Other universities quickly followed suit.

The new universities embodied various ideals. Cornell's benefactor, Ezra Cornell, stated "I would found an institution in which any person can find instruction in any study." Thus, Cornell came to embody the ideal of an all-purpose curriculum. Ithaca became a place, in the sour words of one historian, "where Greek, physical chemistry, bridge-building, the diseases of the cow, and military drill were all equal." In Baltimore, Daniel Gilman, the founding president of Johns Hopkins, looked abroad to the German universities, the essence of which was the disinterested

pursuit of truth through original investigation. Gilman thus focused his efforts on recruiting an eminent, German-trained faculty who brought with them instructional techniques--the seminar, the specialist's lecture, the laboratory, the monographic study—that were associated with pushing back the frontiers of knowledge. The University of Wisconsin, embodying still a third ideal, aspired to become a place where the liberal arts tradition, applied science and creative research would all be put together in the service of the people of the whole state. The word at Madison was that "the boundaries of the university were coterminous with the boundaries of the state." And the university took this word seriously. By 1910, more than 5,000 Wisconsin citizens were taking the university's correspondence courses.

All these institutions began with distinctive missions and conceptions of what they were all about. They were not made from the same cookie cutter. And yet, in terms of their *internal organization and practices,* they all quickly conformed to a standardized, common pattern. Here is what one of the most prominent historians of the period, Laurence Veysey, has to say on this subject:

Looking back, it could be seen that the decade of the l890's witnessed the firm development of the American academic model in every crucial respect... Before l890, there had been room for ... academic programs that differed markedly from one another. Harvard, Johns Hopkins, Cornell, and in their own way Yale and Princeton, had stood for distinct educational alternatives. During the l890's, in a very real sense the American academic establishment lost its freedom. To succeed in building a major university, one now had to conform to the standard structural pattern in all basic respects... A competitive market for money, students, faculty, and prestige dictated the avoidance of pronounced eccentricities... Consider the inconceivability of an American university without a board of trustees ... the lure of a well-defined system of faculty rank ... department chairmen, an athletic stadium, transcripts of student grades, formal registration procedures, or a department of geology.

This remarkable period from about l880 to l900 set the agenda for the 20th century. From England, we had borrowed the idea of a broad liberal education in a residential setting aimed at developing not only the mind but character as well. This model still guides our view of *undergraduate* education. From Germany, we borrowed the idea of a faculty dedicated to

scientific investigation and the training of future scholars. This model still guides our conception of *graduate* education. Between l880 and l900, we grafted the German university on top of the English colonial college and invented the modern American university.

In terms of types of institutions that constitute the family of institutions we call "higher education," several important chapters of our story come in this century. One chapter is about how those colonial colleges that did not develop into universities evolved into our modern liberal arts colleges. Another chapter is about how normal schools, originally established to train elementary school teachers, turned into teachers colleges; and then, in the era of post-World War II (WWII) expansion, how these teachers colleges turned into comprehensive state colleges and universities.

The final chapter is the fascinating story of the two-year, "junior" or "community" college. William Rainey Harper, president of the University of Chicago, strongly believed that high schools should develop a 13th and 14th year of schooling. With Harper's encouragement, a high school in Joliet, Illinois, was parent to the first such junior college. By 1920, there were 52 junior colleges. By WWII there were 450. In l947, a famous presidential commission on Higher Education for American Democracy declared, "The time has come to make education through the fourteenth grade available in the same way that high school education is available." This set the stage for the massive expansion of the junior and community college movement after WWII. In the l960s, community colleges were opening at the rate of one a week.

WWII spurred two great developments that had enormous impact on higher education. First, the Manhatten Project dramatically demonstrated how closely the security of the country depended on the nation's pool of scientific talent. In 1944, Vanevar Bush, science advisor to President Roosevelt, authored a famous report titled "Science: The Endless Frontier." This paved the way for a massive, continuing investment of federal dollars in research.

The second development was the Veterans Readjustment Act, commonly known as the "GI Bill." No one had the slightest idea how significant it would be. The higher education establishment opposed the bill, fearing it would lower standards. Happily for the country, the bill passed. By l947, one of every two students in higher education was financed by the GI Bill. And, contrary to

the fears of the education establishment, they turned out to be motivated, excellent students. By the mid-1950s, there was enough experience with the GI Bill students to suggest that an investment in higher education for ordinary Americans benefited the nation in concrete and specific ways, from increased productivity to increased tax returns. And this commonsense view of the public was bolstered by complex arguments from economists, showing that the return on the investment in higher education was at least as great as the return on the investment in the oil business. At the same time, the country was accepting a large role for government in maintaining a degree of economic prosperity. The rest, as they say, is history.

So here we are, on the verge of a new century—and a new era. People have tried to pin a label on this new era, calling it the "postindustrial society," "information society" or "computer age." But, in truth, no single label can capture the complex changes now taking place in America. The industrial revolution was revolutionary, not simply because of the introduction of new machines like the steam engine, the cotton gin and the power loom. What was revolutionary was that these machines, in interaction with other forces, catalyzed profound changes in the ways people lived and worked. Similiar changes are happening in America today.

What will be the role of higher education in this next century? Commenting on the impact of new technologies on higher education, Peter Drucker said recently in an interview carried in *Forbes,* "Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book." Drucker has been very right and very wrong many times before, and I suspect this latest casual prediction of his will be wrong. But as we think about the future of the place-bound, industrial-era university, it is useful to recall what happened to the colonial college during the last great social transition in America. At the very least, we need to keep this epic tale in mind as we dive into the problems facing higher education today.

Chapter II—the Fall From The Pedestal

With the previous chapter as backdrop, let us now look at the contemporary scene. I believe that the problems and issues that confront higher education today can be best understood as an effort

by American society to revise the social contract—the rather lopsided bargain—that society made with higher education in the l960s. Senior faculty and administrators in higher education today sometimes wistfully look back on the l960s as the golden age, the way things are supposed to be. But, in fact, those were the abnormal times. We built our higher education system on a tidal wave of expectations that has now passed on.

The Amazing 1960s

America's expectations for higher education in the l960s were shaped by three extraordinary events. The first event was the launching of Sputnik in l957, which both symbolized and spurred on the spectacular scientific and technological race with the USSR. America's political, military, cultural and economic influence dominated the "free world." As a training ground for the best and the brightest, higher education soared to new levels of public esteem. Between l953 and l962, for example, in Gallup polls assessing the suitability or attractiveness of nine leading professions, the academic profession rose from seventh to third place.

The second event was the civil rights movement. The GI Bill had demonstrated that helping ordinary Americans go to college was a good investment. In the early 1960s, this lesson was joined to society's gathering commitment to social justice to create a powerful political rationale—equality of opportunity—for extending college opportunities to those who had been excluded from the mainstream of American life.

The third event was the baby boom. In l964, the surge of new babies that began arriving nine months after VJ day and continued coming for 14 years hit college age. They took over higher education like an invading army.

Any one of these events would have thrust higher education onto the center of the national stage. The convergence of all three events, at one historical moment, in the context of a booming economy that was lifting all boats, created an unprecedented, spectacular set of expectations for the role higher education should play in American life.

So what did America want from higher education in the l960s? Two things. First, a rapid expansion of higher education's scientific research and training capability—with few questions asked about what particular kinds of research and training related to what particular kinds of

public needs. Second, a rapid expansion of buildings and faculty to meet the surge in demand for access to college—with few questions asked about the kind or quality of education that was going on inside those buildings.

In the midst of a gold rush, people do not stop to ask questions about cost, quality and accountability. And these were gold rush days. To cite a personal example, when I left graduate school and became a member of the political science faculty at the University of Wisconsin in l965, I was one of five new assistant professors hired that year. Each year for the next three years, my department again hired five new professors. In the course of four years, my department expanded from 20 to 40 professors. This same story was taking place all over America. And we all thought this was what normal, professional life was like!

In the context of this boom period, colleges and universities were free to follow their own stars, to pursue their own internal visions of what kind of higher education society should have. Understandably, most chose to set their compass course on the same star—the ideal of institutional excellence and professional life that was set by our most prestigious universities. And reinforcing these aspirations (what some describe as "research envy") was the fact that the research universities were training the faculty who were taking up faculty positions in other types of institutions, establishing research-oriented "colonies" in regional and state universities, liberal arts colleges and even community colleges.

By the end of the l960s, what authors David Riesman and Christopher Jencks called "The Academic Revolution" had come to completion. A professionalized faculty was firmly in power, setting the standards for not only graduate but undergraduate education as well. In the arranged marriage between the liberal arts college and the German graduate school, the graduate school had emerged as the dominant and dominating partner.

The Sobering 1990s

Fast-forward a generation to l997. America is a very different place.

The cold war is over. In its place we have a national agenda of troubling problems that can perhaps be summarized into two major challenges. The first is how to earn our national living in an increasingly interdependent, global economy. The second is nation building: how to renew

our social, political and cultural life in the face of unprecedented change and a growing accumulation of unsolved domestic problems, including family disintegration, loss of jobs, crime and drugs.

The baby boom, the civil rights movement and a growing economy that lifts all boats have all passed on. In their place, representing new demands for higher learning, we have a "baby echo" (a second population bulge from the children of the baby boomers) and growing needs for adult education. But we also have a host of new conditions—rising concerns about costs, quality and accountability, new competitors for public resources, flagging commitments to civil rights and public investments—that limit the capacity of higher education to respond to these demands. All in all, higher education in the l990s confronts at least six new realities.

New enrollment demands. Twenty-five years after the baby-boom generation set a national record for school enrollment, the record is about to be broken by the children of the baby boomers. But unlike the last tidal wave, this will be a longer, slower rise in enrollments. By the year 2002, the number of high school graduates will increase by 14 percent; by the year 2006, the figure will be 17 percent.

National data are misleading, however, for most of this growth will occur in the far West and Southwest, with California being the epicenter of new enrollment pressures. In the 10-year period from l996 to 2006, California will see an 18.3 percent increase in school enrollments. After looking at nine sets of enrollment forecasts for higher education, an expert panel convened by the California Higher Education Policy Center concluded that higher education should plan for an increase of 488,000 students over the next decade. On the other hand, states such as Louisiana, Wyoming, North Dakota and Maine will actually experience declines in high school graduates and, therefore, declines in potential college enrollees.

"Nontraditional" adult students represent another potential surge of demand. According to the U.S. Census Bureau, the number of adults (aged 25 and older) enrolled in college jumped 28 percent between l987 and l994 to a total of 6.1 million students. Without going into all the complex changes taking place in the workplace, it seems clear that adult workers' demands for various forms of higher learning will continue to grow. Whether colleges and universities will be

the institutions that meet this demand is another question. Just as traditional banks have lost market share to a host of other kinds of financial institutions, so, I suspect, will colleges and universities lose market share to a growing array of providers of adult learning services.

Public shock over rising college costs. In 1990, Daniel Yankelovich took some polls that leaped out at him as registering something newly important. Fully 88 percent of the American public reported that a high school diploma was no longer enough to qualify for a well-paying job. At the same time, 87 percent reported that college costs were rising at a rate that would put college out of the reach of most people. As Yankelovich later reported to a national higher education meeting, this was the same kind of political material out of which the national debate over health care had emerged. A service that the public regarded as indispensable to a decent life was becoming ever less affordable.

In truth, the trends that lie behind these attitudes had been at work for years. Since l974, the median family income of most Americans had been steadily losing ground—while the costs of going to college rose by leaps and bounds. Between l980 and l995, the median family income rose by 5 percent; financial aid per student rose by 37 percent. In contrast, tuition at private four-year institutions rose by 89 percent and at public four year institutions by 98 percent. But somehow, during the Reagan years, no one noticed. Then, with the l990 recession, the public suddenly awoke with shock to what was happening. The "story" of rising college costs has been building ever since.

Fueling all this is evidence that the public is right in its perception of the economic value of a college degree. In l979, full-time male workers aged 25 and over with at least a bachelor's degree earned 49 percent more per year than did comparable workers with only a high school degree. By 1993, the difference had nearly doubled to 89 percent. According to the Census Bureau, people with bachelor's degrees will, on average, now earn $600,000 more over their lifetimes than high school graduates. Add a professional or graduate degree, and the gap widens further.

New competitors for public funds. Today colleges and universities are encountering increasing resistance as they attempt to pass on their costs to students and parents. They are also running into similar troubles with the state and federal governments. A recent report on state

expenditures in the l990s from the Center for the Study of the States identified the major shifts in state expenditures that had occurred between l990 and l994. The big loser in the battle for state resources was higher education, falling from 14 to 12.5 percent of the total. Federal mandates in health care, new welfare policies and pressures on states to spend more on prisons, highways and K-12 education are all cited as factors in this shift.

At the federal level, the same thing is true. For many years before the l990s, the federal share of total higher education expenditures ran to roughly 20 percent. In the early 1990s, it dropped to 15 percent. The culprit: the declining portion of the total federal budget going to discretionary domestic spending.

As I write, however, the federal picture is rapidly changing. President Clinton has proposed to add $35 billion to higher education over the next five years in a package of tax credits and tax deductions. Congress is now deliberating this proposal, and the Republican leadership has basically agreed to give financing for college a major piece of whatever tax cuts are going to be made. Although there are serious issues of equity at stake in using the tax system to finance access to college, it is possible that a major chunk of new resources will be available.

Weakening of other props for access. In the l960s, as we have seen, a constellation of public beliefs all gave momentum to the waves of access to higher education. One was a belief that an investment in higher education repeated benefits not only for individuals but for the nation at large. Another was a belief that government had a major role to play in our national life. A third was a gathering commitment to civil rights.

Today, all three of these beliefs are on the defensive. The political discourse about investments in higher education has shifted to emphasize the benefits to individuals. Both political parties are trying to reduce the role of government. And affirmative action is now under assault, both in the courts and in the larger political arena.

In the courts, a series of decisions, most notably the Supreme Court's 5-4 ruling in the case of Adarand v. Pena, have narrowed the scope of permissible affirmative action. For higher education, the most important decision has been the ruling of the Fifth Circuit Court of Appeals in Hopwood v. Texas, banning the use of race—even as a "plus factor" among equally qualified

applicants—at the University of Texas Law School. By refusing to hear an appeal of Hopwood, the Supreme Court has left standing a ruling that reverses Bakke, a ruling that had given colleges and universities legal sanction to practice race-conscious admissions.

Politically, the landscape has been transformed dramatically over the past two years. The pivotal event was the passage of Proposition 209 in California, eliminating race- and gender- conscious affirmative action programs in public education, employment and contracting. Proposition 209 marked the first time that the voters in a state were afforded the opportunity to express their opposition to what Proposition 209's sponsors consistently referred to as "racial preferences." Buoyed by Proposition 209's success, opponents of affirmative action are now pressing for its elimination in other states as well. At the federal level, President Clinton's position to "mend not end" affirmative action remains under attack.

Growing concerns for quality. In the mid-1980s, concerns about the quality of higher education began surfacing in the national press. In the wake of the 1983 report, *A Nation at Risk,* which helped ignite public interest in school reform, the press started treating curricular debates and popular critiques like *Profscam* as national news. But all this was more titillating than real until the shock of the l990 recession. When mixed with the rising concerns for cost, press stories that had real bite started appearing. In June l992, the *Chicago Tribune* carried a series of scathing stories called "Degrees of Neglect." In September l992, a House select committee held hearings on "College Education: Paying More and Getting Less." In March l993, CBS's *Minutes*t after tenure. By l995, when the Educational Testing Service released a study (funded by PCT) of adult literacy, headlines such as *USA Today's* "College-level Literacy Less Than Impressive" appeared around the country. By the mid-1990s, the quality of higher education had become an "issue" for the media and remains one to this day.

From center stage to the sidelines. In l992, Harvard president Derek Bok addressed the annual meeting of the American Association for Higher Education on the topic "Reclaiming the Public Trust." After listing all the negative news about higher education, he pointed out that the defects in university education that the media is criticizing today were at least as bad--and probably worse—20 or 30 years ago. Yet the criticism today is far more intense. So why, he asked, was

there not more criticism then, and why is there so much now? Why are the most intemperate polemics treated with seriousness by the *New York Times?'*

The crucial difference between then and now, Bok pointed out, is that higher education in the l960s was actively and visibly engaged in two great ventures that had the enthusiastic support of the people and the government and were perceived as central to the progress of the nation--the tasks of beating the Russians and providing equality of opportunity. These ventures brought higher education into alliance with governmental, business and foundation leaders in pursuit of goals that everyone perceived as important.

Now, Bok concluded, Americans are focused on a national agenda of post-cold war problems to which colleges and universities are no longer clearly connected. In retrospect, beating the Russians in a technology race turns out to be easier than beating crime, welfare dependency, the drug culture and other problems on our national agenda. The solutions are complex, and the contributions that colleges and universities might make to these solutions are harder to figure out and articulate. It may be that a powerful case can be made that higher education holds the keys to economic development and civic renewal. But this case has not yet been made—at least in a way that has captured the imagination of the larger public.

I think Bok is onto something important here. When governors begin talking about problems in their states, few think of colleges and universities as resources to help address these problems. Colleges and universities may, in fact, be doing a lot more than the governors realize, but they are not perceived as being actively and visibly engaged. On the contrary, they are more likely to be seen as fiddling while Rome is burning.

Three Continuing Challenges: Costs, Quality and Connections to the Public Agenda

Taken together, with the possible exception of becoming a major beneficiary of a new tax cut, these new realities amount to a sobering environment for colleges and universities as they prepare to enter a new century. In the boom years of the 1960s, there was really only one issue: how to provide access. The access agenda is still with us. But access has now been joined by three other major problems that confront higher education today—problems that I believe we should address through our new higher education program.

The first is the problem of rising costs. Caught in a closing vise between new demands for enrollment and declining rates of revenue growth, colleges and universities must figure out a way to do more with less. In the next chapter, I take up this problem. I argue that to contain costs, and make use of the new technologies to help contain costs, requires a fundamental shift in thinking. Rather than focus on how to provide more effective and efficient teaching, colleges and universities must focus on how to produce more effective and efficient student learning.

The second is the problem of quality. In Chapter IV, I take up the question of whether or not there is, indeed, a quality problem and, if so, how serious it is. I conclude that America has not held higher education up to high enough standards; and that, measured against high standards, there is, indeed, a quality problem. In Chapter V, I argue that one of the sources of the quality problem is inadequate incentives in the larger system in which college administrators and faculty operate for paying attention to continuous quality improvement.

The third problem is the one identified by Derek Bok: the fact that higher education is no longer seen as a central actor in America's effort to address its most important problems. I take up this problem in Chapter VI and argue that there is one particular area where the Trusts should help higher education reconnect to the public: the reform of schools.

My proposed agenda for our work in higher education flows directly from this analysis. In Chapter VII, I argue that our first goal should be to set new aspirations for undergraduate education through a fourfold strategy of encouraging institutions to take learning seriously, encouraging faculty to take pedagogy seriously, demonstrating that technology can be used to reduce costs as well as to enhance learning and developing new incentives for continuous quality improvement. Our second goal should be to encourage colleges and universities to engage the public's agenda, especially the reform of schools. As a third goal, I propose that we encourage ideals, policies and practices that will develop an academic profession capable and interested in working toward these ends.

Chapter III—The Challenge of Costs

Concern about the rising costs of higher education continues to build. In last fall's annual college issue of *U.S. News and World Report*, editor Mel Elfin wrote a biting editorial essay on "The

High Cost of Higher Education." Last March, *Time* focused on the University of Pennsylvania for a "special investigation" of rising costs. And in June, escalating things still further, Congress created a new commission to study college costs. The 11-member panel will meet for four months and report on whether or not colleges are trying to control costs, and whether or not the federal government should take steps to slow rising tuitions.

For many Americans, what is at stake is nothing less than the continued viability of the American dream. The stakes are high for higher education as well. The analogy with the situation faced earlier by the health care industry is very clear. Unless higher education can demonstrate that it can manage its own affairs, others will step in to manage them.

So what are colleges and universities doing? What further steps need to be taken? And what role can technology—the favorite solution of many who look at industries with high labor costs—play in this process?

First Responses

One response from the higher education community has been to argue that the problem of rising costs is not as great as the press makes it out to be. This is true. Media coverage of rising tuition has tended to focus on the most highly selective, visible and expensive institutions in the country—the *Time* story on the University of Pennsylvania being a case in point. As the head of government relations for the American Council on Education pointed out, this is like writing a story on the high cost of cars while limiting the analysis to only three makes of cars: Mercedes, Lexus and Jaguar.

Focus groups have revealed that ordinary citizens believe the average tuition bill at a public university to be more than twice what it really is. In reality, in l993 (the last year these particular data were available), 60 percent of all college students—9 million students in all—faced an annual tuition bill of less than $3,000. Only 8 percent of all enrolled students paid more than $12,000.

But college and university leaders are under no illusion that the problem can simply be explained away. There is today a new recognition that tuition increases can no longer be used as a safety valve to avoid dealing with the underlying issues of why costs increase so much and what can be

done to contain them. For example, institutions are stepping forth to assure students and their parents that tuition increases will no longer greatly exceed the rate of inflation. Michigan State has publicly announced the "MSU tuition guarantee," promising freshman that tuition will rise no higher than the rate of inflation. Other institutions have offered tuition discounts. Still others have cut tuition outright (Muskeegum College by 29 percent and North Carolina Wesleyan by 23 percent). Others have announced discounts to targeted cohorts of students, such as alumni and in-state students. Still others—Indiana University at Bloomington, for example—are offering guarantees that students will be able to finish their degrees in four years or take the fifth year free of charge. Clearly, the climate has changed.

With large tuition increases no longer an acceptable option, campuses have begun the hard work of cost containment. Administrators typically assume that they will have little credibility asking faculty to control costs unless the rising costs of administration and services are attended to first. Also, administrative costs have been the area where the largest expenditure growth has been. So almost universally, cost containment has begun with efforts to put the administrative side of the house in order.

Once credible efforts have been made on the administrative side of things, campus leaders have then turned their attention to the faculty and related academic support areas—the largest expense category in most budgets. Many campuses have already traveled well beyond "across-the-board" measures into the more difficult territory of setting priorities and dealing in various ways with programs that fall outside these priorities. A number of campuses have announced policies of "selective excellence." Some—such as Syracuse, Tulane and a number of campuses in the State University of New York (SUNY) system—have discontinued programs on the margin. Others, such as Portland State, have simplified and streamlined their curricula so that the faculty teaching effort will be directed at the highest priority tasks.

Campuses have mounted still other strategies to address the unit costs of instruction. Unit costs per student are essentially a product of two things: the average salaries of the faculty who do the teaching, and the number and size of classes they teach. By hedging on tenure commitments, introducing early retirement schemes and a variety of other measures, campuses have substituted lower-cost, younger and part-time faculty for more expensive senior faculty. Of the nearly

900,000 faculty employed in higher education in the fall of l992, nearly one-third were part-time—a huge jump from earlier eras. And of the cohort of full-time faculty who had fewer than seven years of teaching experience, fully one-third were not on tenure-track appointments. Both teaching loads and class sizes have increased.

And yet, even with all this, campuses still find that the underlying pressures to increase costs are still very much present. After sharpening priorities, sometimes making tough choices in light of these priorities, and asking everyone—administrators and faculty alike—to work harder, campuses are still groping for ways to wrestle costs under control.

Shifting the Question from Teaching to Learning

All the strategies I mentioned earlier are conventional in that they seek to lower the costs of instruction per student by asking faculty to work harder, not smarter. None of these conventional approaches challenges the fundamental assumption of the current instructional model: that faculty members meeting with groups of students at regularly scheduled times and places is essential in order to achieve effective student learning.

Recently, this challenge has been issued. Three years ago, Antioch chancellor Alan Guskin published a widely quoted article, arguing that asking faculty to teach more courses to more students would never produce the gains in productivity that institutions need to achieve. The real issue, Guskin argued, was not how many courses faculty teach, but how much students learn. Faculty are only one of many resources that are important to student learning. Would it not be possible, Guskin asked, to increase learning while also reducing faculty effort?

At about the same time, former SUNY chancellor Bruce Johnstone initiated an ongoing, informal conversation among a network of colleagues on the topic of "learning productivity." The conventional paradigm for teaching and learning, Johnstone noted, takes students enrolled in courses and classes, defined in terms of blocks of time (terms, quarters and semesters), as the principal generator of costs. Once we make this assumption, the only way to increase productivity is to lower the cost per course or per credit unit. But what if unit costs were measured not in terms of costs per unit of instruction but costs per unit of student learning? From the perspective of learning productivity, "cost" is driven not only by faculty salaries, course loads

and average class size, but also by factors that contribute to or distract from student learning. Thus, strategies to enhance learning productivity include such things as instructional approaches that maximize learning with minimal faculty input, advanced placement and other strategies that reduce redundant teaching, and strategies that reduce aimless drifting and course taking that leads nowhere.

Ideas such as these have now prompted a new round of thinking about what it means to control costs from a learning productivity perspective. The issues are complex, and the conversation is not very far along. But I think it is fair to say that influential leaders in higher education are now asking the right set of questions. Driven by the imperatives of containing costs, leaders in higher education are thinking harder about student learning.

From my own perspective, once the focus shifts from teaching to learning, and from time to results, the conversation is headed in a direction that raises questions about the academic assembly line that came into existence at the birth of the modern university. I noted that, in Chapter I, by introducing the idea of elective courses into the Harvard curriculum, president Charles Eliot transformed Harvard College into Harvard University. But by doing this, he also did something else. He became the Henry Ford of American higher education.

In the colonial college, before Eliot's time, the idea of a "course" referred to a course of study (as in "freshman studies" and "sophomore studies"), not a defined unit of instructional time. But with Eliot's initiative, "course" became a defined unit of instructional time. The Harvard catalogue of l869 (I believe for the first time in history) carried a precise definition of a course:

The term course, *as used throughout this work, means a unit of instruction in which the instructor meets his students for two or three hours a week for a lecture, recitation or discussion; assigns prescribed reading, laboratory or field work, or written work such as essays, reports or theses, or a combination of these; examines them at stated intervals on the subject of the lectures and assigned study; and finally assigns a grade. A full course extends throughout the college year; a half course through one of the two terms. Undergraduates must take not less than four nor more (than) six courses a year (counting two half courses as one course).*

Note the use of the terms *instructional time, hours per week, half year* and *full year* in the definition of courses. In l871, electives became courses with Arabic numerals and were divorced from classes considered freshman and sophomore studies. In l872, Harvard students were informed for the first time who would give the course. Faculty began to assume that they "owned" their own courses. Courses were soon given values called "credits." Going to college became a matter of taking a certain number of courses and accumulating credits that added up to a degree. Managing a university became, in a fundamental sense, the management of courses.

A few decades later, searching for a way to standardize requirements for college admissions, the newly established North Central Accrediting Association insisted that schools submit evidence of student work in terms of courses that met a required number of hours per week and weeks per semester. So the course/credit hour system introduced by Eliot became the fundamental unit of instruction in America's schools as well. Still later, when the Carnegie Foundation for the Advancement of Teaching was casting around for a unit of measurement with which to calculate pensions for college faculty, it landed on the course/credit hour as the best available standard. The "Carnegie unit" has existed as a standard of academic bookkeeping to this day.

This assembly line of courses and credits has served higher education well for over a century. But it is a system rooted in notions of time and place and faculty-student contact that should no longer be assumed as simply given. Which brings me to another development that is challenging our notions of instructional time and place: the impact of new information technologies.

The Uncertain Potential of New Technology

We are now in the midst of what might be called "the second coming" (or third or fourth) of the technology revolution. This is not the first time that technology has been heralded as a revolutionizing force in education. In times past, the trumpets have sounded, but little has actually happened. But this time, almost everyone agrees, things are going to be different. Indeed, they already are. But in what ways? And what role will technology play in the agenda we are discussing here, the effort to contain the per student costs of instruction?

The answer is, "it depends." Almost all the important questions about the impact of information technology have little to do with the technologies themselves. They have to do with what views about learning and teaching will inform and guide the way the technologies will be used.

There is no question that the new technologies can extend access to higher education to new populations of students at lower cost than traditional classroom instruction. Around the world there are now 11 "mega-universities" entirely devoted to technology-based distance teaching, each serving more than 100,000 students actively enrolled in degree-granting courses. Collectively, they enroll more than 2.8 million students at substantially less cost than do traditional institutions. The most prominent of these, the British Open University, is currently serving more than 150,000 students at about half the per-student cost of a traditional university. Such institutions have achieved a double breakthrough: a breakthrough in access, by reaching students in new ways at times and places convenient to the students; and a breakthrough in cost, by doing so at a lower cost than that of traditional instruction.

There is also no question that technology can significantly enhance the quality of student learning. For example, two critical ingredients affecting the quality of student learning are the extent of interaction between students and instructors, and the extent to which students have opportunities to apply concepts they are struggling to learn in a variety of situations and settings. Electronic mail, a relatively simple use of new computer technology, already is having an enormous impact on the interactions between students and faculty and on students' interactions with each other. In addition, in many fields software is becoming available that provides students with stunning capabilities to try out multiple ways of representing and applying ideas. Before computers and computer software, an art history student struggling to appreciate why Leonardo da Vinci's painting of the Mona Lisa is so classic and compelling would simply look at a slide of the painting and talk about it to others. With computers and appropriate software, this same student can play with the composition, design a dozen different versions of Mona Lisa's famous smile, and thus come to a deep understanding of why da Vinci's version is so compelling.

So the real question before us is: Will higher education organize itself in ways that will take advantage of technology's potential to maximize all of its potential benefits—benefits in quality, benefits in access and benefits in cost?

The benefits in quality are happening before our eyes. All around the country, colleges and universities are connecting their campuses to the wonders of the Internet, and faculty and students are discovering exciting new ways of using technology to enhance the process of teaching and learning.

Technology's promise to extend access in new ways is also being exploited, though to a lesser degree. There are several different traditions of distance education. One—the "remote classroom model"—uses technology to provide instruction to groups of students at a fixed time and place (synchronous communication). Another—the "correspondence education" model—offers instruction to individual students who study at times and places of their own choosing (asynchronous communication). Throughout most of the rest of the world, distance education institutions are exploiting the flexibilities and advantages of the correspondence model. But here in America, many university-based continuing education programs have heavy investments in broadcast television facilities that bring professors to students in the tradition of the remote classroom. The newest technology, interactive computing, is a highly personal medium that can be used most flexibly and easily by institutions operating in the correspondence tradition. But many American universities heavily invested in current forms of distance education have been slow to take advantage of these possibilities.

By and large, colleges and universities have not yet even begun to grab hold of technology's promise to reduce the costs of instruction. On the contrary, for most colleges and universities, the new technologies represent a black hole of additional expense as students, parents and faculty alike demand access to each new generation of equipment and software. Most campuses have bolted on the new technology to a fixed plant, a fixed faculty and a fixed notion of classroom instruction. Under these circumstances, technology becomes part of the problem rather than part of the solution of cost containment.

There are, fortunately, some notable exceptions. One of our Pew Leadership Awards last year went to Renasselaer Polytechnic Institute (RPI) for its impressive initiative at curricular re-engineering. As part of this process, RPI redesigned its introductory courses in physics, chemistry and math, creating "studio courses" in which students spend about one-third less time in direct contact with faculty and proportionately more time using computers and working

collaboratively with each other. In these courses, student learning has increased, and costs have decreased. Yet, at present, the story of the studio courses at RPI is one of the only such stories.

Costs + Technology = A New Emphasis on Learning

In sum, thinking about the new technologies takes us back to where we arrived in thinking about the challenges of controlling costs: the need to shift attention from teaching to learning and from time to results. Once learning becomes the central focus, the important question is how best to use all available resources--including faculty time and technology—to achieve certain learning objectives. Few colleges and universities are currently geared to think this way. The Trusts can help them do so.

Chapter IV—The Challenge of Quality

The national press has become increasingly critical of the quality of higher education. But how serious a problem is this? How real and how widespread are the deficiencies? Are we talking about a few things that need fixing in a basically healthy system, or are we talking about deeper and more serious flaws?

Concerned about the drumbeat of negative press stories, the American Council on Education (ACE) in l993 developed two reports for its board of directors on the state of public opinion about higher education. The first summarized the results of more than 30 opinion polls; the second was based on focus group interviews in four cities conducted between March and July l993. The ACE research found that all the negative press about colleges caving in to pressures to adopt politically correct curricula, professors more interested in research than in teaching, colleges padding their indirect cost budgets and the like had yet to register with the average American citizen.

Indeed, the Main Street view of higher education was quite positive. In each of the four focus groups, participants were asked to mention what came to mind when they thought of K-12 education. This question invariably evoked thoughts about poor academic achievement, lack of student discipline, drugs and weapons at school—a generalized sense that the nation's schools are in very bad shape. In contrast, when the focus group members were asked about colleges and

universities, they mentioned images of park-like settings filled with attractive and healthy young people. In the surveys generally, respondents expressed pride in their local universities and noted that students from around the world come to study in America. College professors were seen as hard-working, ethical people; research was popular. What *did* concern the public was that higher education is becoming ever more necessary and ever less affordable. As seen from Main Street, there is only one big problem in higher education: how to get in.

The ACE report went on to point out that opinion *leaders* (such as business leaders, public officials and journalists) were a good deal more critical than the general public; and that higher education was, therefore, politically vulnerable, especially because the general public was not particularly engaged in issues of public policy that affected higher education. But, for our purposes, the fact that opinion leaders are out in front of the general public in their criticisms of higher education is obviously something we need to take into account. So where does this leave us? Should we conclude that quality is not a major issue for higher education? Or is it possible that the *expectations* of the public (and educators as well) are too low? Is it possible that quality *should* be a major problem but is not because we have not held ourselves up to a high enough standard of what college graduates should know and be able to do?

I believe this is precisely the case. Ordinary citizens bring to higher education—and many other arenas—a commonsense capacity to recognize obvious defects. When cars roll off the assembly line with doors that rattle, the public knows something is wrong. When colleges admit students who are obviously not qualified for college-level work, employ teaching assistants whose English is so poor they cannot be understood or promote athletes who cannot write—the public recognizes these situations as evidence that something is not right in the world of higher education. The standard of judgment is a *minimum* standard; quality is the absence of obvious defects.

I submit that there are, however, at least three other standards by which the quality of higher education should be judged. The first is the extent to which students who embark on a course of study actually finish their program and acquire a degree. The second is whether students learn whatever it is they are studying at a level of depth that we can call "understanding." The third is whether students are learning the literacies required for effective work and citizenship in our

changing society. In the remainder of this chapter, I explain these standards and the extent to which they are presently being met.

Quality as Making It through the Pipeline

Policy makers and other influential leaders responsible for tracking returns on the public investment in higher education frequently view education as a pipeline. Students who enter the educational pipeline at one end are supposed to flow through the pipeline and come out the other end with a degree. Leaks in the pipeline are often taken as evidence of potential quality problems.

We have to be careful about the assumptions this pipeline metaphor implies. Many students who register for courses never intend to pursue a program of study all the way to a degree. Traditional-age students are increasingly leading checkered careers as students, dropping in and out of college, and attending several different institutions. Adults who juggle college, family and work responsibilities are even more prone to follow "in-and-out" patterns. And many students return to college for second educational careers. In California some years ago, policy makers were surprised to learn that nearly one-third of the students enrolled in the community college system were adults who already had a bachelor's degree and were returning to college for technical programs related to new employment opportunities. From the perspective of the pipeline metaphor, these students were entering from the wrong end!

Tracking the flow of students through the pipeline is thus a tricky business. Interpreting the data is trickier still. Students leave college for many reasons, and only some of these relate to the quality of their educational experience.

Yet allowing for all these difficulties, educational researchers have concluded that retention figures are valid and telling indicators of educational quality. Retention figures at particular institutions depend heavily on the characteristics of the entering student body. First-generation students enrolling at community colleges do not persist at rates comparable with those of elite students at Ivy League universities. But even when the retention rates of institutions with similar types of student bodies are compared, these rates often vary considerably, suggesting that educational issues controlled by the colleges themselves do influence retention. In fact, an

intensive study of the causes of attrition, Vincent Tinto's "Leaving College: Rethinking the Causes and Cures of Student Attrition," concludes that most of the factors associated with leaving are in the control of the institutions. Tinto found that students' financial problems are a factor, but not a central one, in explaining attrition.

With this background, let's look quickly at the current evidence of how well students are flowing through the pipeline. First, there's the distressing picture of students' academic preparation at the point of entry. Remediation is a fact of life on most college campuses. According to a l995 national survey by the U.S. Department of Education, slightly more than three-quarters of all colleges and universities offer remedial courses. One-third of entering freshmen is enrolled in at least one remedial reading, writing or mathematics course, the highest enrollments being in mathematics. Eighty percent of all student work in mathematics courses in college is remedial.

Remedial courses are most common at public, two-year institutions and at institutions with high enrollments of minority students. According to the Department of Education survey, remedial courses are offered at 100 percent of public two-year institutions and 94 percent of institutions with high minority enrollments compared with 81 percent of public four-year institutions.

As to progress toward the degree, the best source of evidence is a Department of Education-sponsored longitudinal study that began with the cohort of students who first enrolled in 1989. Among those seeking a bachelor's degree (whether they started at two- or four-year institutions), 46 percent had a bachelor's degree five years later, 5 percent had stopped with an associate degree and 3 percent with a certificate. Another 18 percent were still enrolled. If approximately half of the 18 percent still enrolled finally finished, the result would be that a little more than half of the students who entered the pipeline intending to earn a bachelor's degree actually made it all the way through.

What shall we make of this finding? Clearly, given the remediation figures I cited, many colleges and universities are dealing with students unprepared for college-level work. These schools face a challenging educational task. But allowing for this, the fact that only slightly more than half of those students who start with the expressed intention of earning a bachelor's degree actually end up doing so is a troubling finding. The leakage begins early. In 1995, the proportion of freshman

who persisted into their sophomore year was 83 percent in private universities offering doctorates, 67 percent in public institutions offering bachelor's degrees and 52 percent in public two-year institutions. For too many students, the first year of college turns out to be their last.

Quality as Learning for Understanding

Statistics about the numbers of students who flow through the pipeline tell us nothing about the kind of education these students receive. By what standard should we judge if students have really learned what they need to learn? How are colleges and universities doing when measured against this standard?

Both within and without higher education, discussions about quality typically focus on issues of the curriculum. Faculty argue endlessly about what courses are essential, and these debates are now spilling over into the national press. When Stanford University revised its core course requirements for freshmen a few years ago, substituting readings by African American authors for several classic texts of Western civilization, the *Wall Street Journal* editorialized at length about the triumph of "political correctness" on the Stanford campus.

To be sure, whether or not students study the "right" subjects is an important aspect of the quality of education students experience. And we don't need to resolve the endless debate between the relative value of liberal versus more technical education to ascertain that there are serious problems to ponder regarding the quality of the curriculum students experience. A l992 analysis of college transcripts by the U.S. Department of Education revealed that 26.2 percent of recent bachelor's degree recipients had not taken a single course in history, 30.8 percent took no mathematics, 39.6 percent took no English or American literature, and 58.8 percent took no foreign language. These data should disturb anyone who believes in the importance of a solid grounding in liberal education. And those who believe in the importance of technical training related to the needs of the work force might ponder this: approximately one-third of the students in two-year community colleges are enrolled in "general studies" courses that seem to lead neither to a baccalaureate degree nor to employment opportunities in our increasingly technical economy. One wonders exactly what this course of study is designed to accomplish.

Curriculum matters. But the point I'd like to press is that *what* students learn is not simply a matter of the subjects students study. It is also importantly a matter of *how* these subjects are studied. *What* students learn is affected by *how* students learn. Summarizing 20 years of research on the impact of college on student development, Ernest Pascarella and Patrick Terenzini put it this way:

Perhaps the strongest conclusion that can be made is the least surprising. Simply put, the greater the student's involvement or engagement in academic work or in the academic experience of college, the greater his or her level of knowledge acquisition and general cognitive development.

If the level of involvement were totally determined by individual student motivation, interest, and ability, the above conclusion would be uninteresting as well as unsurprising. However, a substantial amount of evidence indicates that there are instructional and programmatic interventions that not only increase a student's active engagement in learning and academic work but also enhance knowledge acquisition and some dimensions of both cognitive and psychosocial change.

In light of this point, what is even more troubling to me is the *mode* of teaching and learning that prevails in most classrooms today. For a large percentage of undergraduates, taking courses is primarily a matter of reading, doing homework and listening in class to what professors say about their fields. Professors impart knowledge. Students absorb this knowledge. Examinations test whether students can recall what they have learned. In short, teaching is telling; learning is recalling.

Of course, this generalization by no means characterizes every classroom. And it is too simplistic to maintain that any particular teaching technique is either good or bad. Lecturing, properly done, can be a highly engaging form of teaching and learning. And knowing about things is critically important. But the larger point is absorbing knowledge through lectures often is not enough to ensure a good understanding of the material.

Why is it not enough? We know that lecturing is not enough largely because of the results of an interdisciplinary research endeavor that has been proceeding under the banner of "cognitive science." Over the last 25 years, researchers from various fields have shed new light on what is

involved in helping students realize that high bar of intellectual endeavor we call "understanding." Although many educators have long equated understanding with knowledge, cognitive science now offers persuasive evidence that students can comprehend an idea sufficiently well to pass examinations but never really understand the idea well enough to put it to use in other situations. For example, a large portion of high school students studies Algebra I and receives passing grades. But according to the National Assessment of Educational Progress, only 5 percent of American students can perform tasks that require using the knowledge learned in Algebra I.

The problem of knowing something but not really understanding it is not limited to students of poor or average ability. Very intelligent and able students at all levels of our educational system never really understand a great deal of the information and knowledge they acquire. A videotape called "A Private Universe" is now being used in workshops around the country to illustrate this point. In the opening scene, filmed immediately after a Harvard graduation ceremony, a reporter approaches a handful of new Harvard graduates, still clad in caps and gowns, and asks, "Why is it colder in the winter and warmer in the summer?" The graduates reveal their "knowledge" from ninth-grade astronomy that the earth travels around the sun in an elliptical orbit and tilts about 20 degrees on its north-south axis. But none of these grads can use this knowledge to explain why the temperature is warmer in the summer than in the winter. A surprising number say, erroneously, that the difference is explained by the fact that the earth is farther away from the sun in the winter than in the summer.

Harvard psychologist Howard Gardner, summarizing recent research, reports that many successful graduates of courses, programs and institutions leave with only fuzzy understandings of key ideas:

[What] an extensive research literature now documents is that an ordinary degree of understanding is routinely missing in many, perhaps most, students. It is reasonable to expect a college student to be able to apply in new context a law of physics, or a proof in geometry, or the concept in history that she has just demonstrated acceptable mastery in her class. If, when the circumstances of testing are slightly altered, the sought-after competence can no longer be

documented, then understanding—in any reasonable sense of the term—has simply not been achieved.

The discovery that the majority of students, including the very brightest ones, consistently and predictably fail to understand the basic concepts they seemingly "know" has triggered new research on how to teach for understanding rather than simple recall. In a forthcoming book, *Assessing for Excellence*, Grant Wiggins points out that to really understand an idea—be it the law of supply and demand in economics or the law of motion in physics—a student must be able to carry out a variety of performances involving the idea. Understanding is the ability to explain the idea, muster evidence to support it, find examples, apply it to new situations, generalize about it and represent it in new ways. In essence, the kind of learning that leads to understanding is learning by doing. Students know about chemistry by reading and listening to lectures, but to really understand chemistry, students need to engage in the tasks that chemists perform. A saying, attributed to the Lakota Sioux Indians, captures the point nicely:

"Tell me, and I will forget.
Show me, and I will remember.
Involve me, and I will understand."

It follows that assessing whether students truly understand a subject cannot be done through conventional testing. When students dish up answers on multiple-choice tests, they reveal their ability to recall facts and ideas. Genuine understanding can be judged only by assessing a student's ability to use an idea in a variety of ways in a variety of situations. Thus, what is at stake in the debate about standardized testing versus student portfolios and other methods of "authentic" or "performance" assessment is whether we care to evaluate students' understanding of what they study, or whether we will continue to be content to test simply what they know.

Quality as Literacies for a Changing Society

Teaching for understanding, then, is one of the standards by which we might judge how well our colleges and universities are performing. But there is still another standard to be considered. College is preparation for life's varied aspects—work, citizenship and personal fulfillment. As our society changes, the knowledge, abilities and attitudes that people need in order to lead

meaningful lives and be productive workers and effective citizens change as well. What do the sweeping changes now taking place in our society imply for what it is that college graduates should know and be able to do?

Looking first at the changing nature of work in our emerging global economy, I would underscore three big developments. First, of course, is that the decline in the manufacturing sector (from 29 to 15 percent of total employment since WWII) and the changed nature of production work has wiped out thousands of high-wage, low-skill jobs. As a result, to earn a middle-class wage in America now requires what economists Richard Murnane and Frank Levy call "the new basic skills": traditional academic competencies (basic mathematics, reading, writing and problem solving) plus newer, "soft" competencies (the ability to work in teams, effectiveness at oral presentation and the ability to use personal computers). America's current sense of urgency about school reform comes in no small part from the fact that only about half of our high school graduates currently possess these skills.

In the upper professional/managerial tier of the workforce that traditionally requires a college degree, we also find that the new pressures on companies to become "high-performance" organizations are generating demands for new kinds of college-educated talent. In part because the pace of specialization is so swift and relentless, employers are coming to realize that it is impossible to hire or train people for any particular job. Increasingly, employers are looking for individuals with the attitudes and underlying abilities to learn new things and move through a succession of specialities, as well as for individuals who are imaginative, enterprising and capable of working collaboratively with others. In l993, a team from the Harvard Business School visited 23 other business schools to ascertain how they were reading the new environment. The team found that business schools are shifting away from teaching about a body of knowledge and, instead, increasingly emphasizing applied learning that develops managerial skills.

A third new element in the picture, affecting all tiers of the workforce, is the increasingly freelance character of work in our new global economy. In *The Age of Unreason,* British author Charles Handy offers an arresting image of organizations whose workforces are looking more and more like a three-part shamrock leaf. One leaf represents a core professional staff, which is

declining. The second leaf represents an "outsourced" staff that works on contract, which is growing. And the third leaf represents a contingent staff of workers hired and let go depending on changing organizational needs. Reconfiguring the workforce in this pattern has brought a new agility to organizations. But for workers themselves, "shamrock leaf" organizations mean diminishing chances for a stable, long-term job with benefits. Today's graduates are likely to find that reinventing their work life every few years will become the norm.

All in all, the changing requirements for working in the new economy place a new premium on the importance of graduating students who have the ability to take the initiative, be enterprising and take charge of their own careers. Hence, the changing character of work in our new economy reinforces the message that is coming from the cognitive sciences. Listening to lectures is not enough. Students must take charge of their own learning—and learn by doing.

And what of the changing requirements for being a citizen in America? Here we encounter some difficulty. To understand the changing character of the workforce, we turned to the classification schemes and data that the U.S. Department of Labor has been providing since the l930s. But to understand what is happening to the "citizenship force," we have no help. No federal agency has classified "citizenship occupations." There is no monthly drumbeat about "nonparticipation rates" equal to the unemployment rates.

We do, of course, have some things to go on, such as voting statistics and various indicators of social trust. And, happily for me, Paul Light has already given the board the full and disturbing picture of how American citizens are disengaging from traditional forms of civic life. The point I wish to add here is that at the very time that the "supply" of engaged citizens is declining, the "demand" for engaged citizens is increasing. Indeed, four major areas of social change are generating needs for new "literacies" on the part of American citizens.

The accelerating thrust of science and technology is creating needs for new scientific and technological literacies. For example, as our scientists and engineers develop more and more products and procedures with far-reaching public consequences (e.g., fertility therapies, genetic engineering and nuclear power), decisions about their design, location, production and use become public affairs. At the same time, the issues that these technologies raise are increasingly

technical in character and exceedingly complex. Ordinary citizens now confront an agenda of issues arising from scientific and technological processes that only experts fully understand. Although making decisions on these issues requires complex assessments of possibilities, risks and consequences, as a society we cannot afford to turn over these decisions to experts, who represent only a narrow spectrum of public values. If we are to maintain our democracy and retain control over our future, all citizens will have to reach new levels of scientific and technical literacy.

Second, consider the growing complexity and interdependence of American society. In the shift from the agricultural to the industrial era, America was transformed from a collection of small towns into a new, national market, and national organizations emerged to embrace and manage the new relationships. Now we are being pulled into a vast new global market, and international organizations have emerged to manage these relationships. This process is generating the need for another set of literacies, including global awareness, sensitivity to other cultures and facility with foreign languages.

Third, consider our changing demography. As a consequence of both differential birth rates and the l965 immigration reform law, America's minorities are a rapidly growing segment of the total population. By l990, minorities had increased to 20 percent of the total population. In the under-18 age group, this figure was 31 percent. Assuming that the average annual rate of increase in the minority population of children younger than 18 continues at about 0.5 percent a year, soon after 2020, among citizens under age 18, "minorities" will become the majority.

These trends mean that American citizens are confronting new issues of cultural pluralism. Feeling at home in America requires a kind of active engagement with diversity that is new for many Americans. As citizens of an increasingly multicultural nation, we face the increasingly difficult task of appreciating the human concerns and bonds that underlie diverse people's ways. Acquiring a sense of how the world looks when perceived and pondered in another language, and how different ways of living each have their own integrity represent yet another new set of requirements for being an effective American citizen.

Finally, consider the changes taking place in our basic values and culture. Traditional values and loyalties are eroding while new values and forms of community are forming. Traditional families are breaking up while new notions of family are emerging. Neighborhood communities are eroding while workplace and "virtual" communities are emerging. In consequence, we Americans are being forced to reconsider who we are in an increasingly complex society. Some of us suffer from losing familiar roots and references; others are liberated by the new bazaar of choices before us. With fewer and fewer givens in the social structure, more and more of us are struggling to discover and define who we are—through education.

All in all, there is a growing, daunting list of "new literacies" that Americans need to learn to be effective citizens—literacies in science and technology, literacies in global awareness and foreign languages, literacies in dealing with diversity, and giving meaning to the words "us" and "them." Each of these literacies represents a possible yardstick for judging the quality of the education colleges and universities provide. No one institution needs to assume responsibility for graduating students who have all these literacies. But as we look at our total system of higher education, it is fair to ask whether the system is producing a "citizenship workforce" that meets America's needs.

And there is a final critical point. Taken together, these literacies add up to what I think of as the "new civics" of the 21st century. We have already discussed how, given both the new understandings of cognitive science and the new requirements of work, learning about things is not enough. Graduates also need to learn how to do things. Having looked at the new civics, we can further conclude that learning how to do things is also not enough. There is a third dimension of learning that graduates must acquire. They must learn not only how to do things but learn to value doing them as well.

To be a citizen one must not only be informed. One must also care, and be willing to act on one's values and ideas. Crucial to all the new civic literacies is the development of an emotional identification with the larger community and the belief that, in the face of overwhelming complexity, one individual can make a difference.

How do we learn such "habits of the heart," to use Robert Bellah's phrase? The complete answer is complicated, but the quick answer is that students acquire habits of the heart in situations in which they are intensely and emotionally engaged: not just reading a play but acting in it; not just reading about the homeless, but working in a soup kitchen or homeless shelter, and then reflecting on what they have experienced.

Toward Pedagogies of Engagement

Held to a standard in which quality is defined as the absence of obvious defects, there are a few trouble spots in higher education, but no deep or serious flaws. Held to a standard of making it through the pipeline, there are troubling issues of quality throughout higher education but especially at institutions with open admissions. Held to a standard of learning for understanding and acquiring the literacies needed for our changing society, there are pervasive issues of quality throughout the entire system.

Throughout the whole enterprise, the core issue, in my view, is the mode of teaching and learning that is practiced. Learning "about" things does not enable students to acquire the abilities and understanding they will need for the 21st century. We need new pedagogies of engagement that will turn out the kinds of resourceful, engaged workers and citizens that America now requires.

To place this issue in its historical context, recall my early description of the colonial college. The fundamental disciplines taught in the colonial college were Latin and Greek. But everyone--students and faculty alike—understood that these subjects were means, not ends. What today we would call the "intended outcomes" of the colonial college were mental discipline and character.

With the birth of the modern university, an increasingly specialized faculty came to the university to discover new knowledge and transmit the fruits of their discoveries to their students. Along the way, however, covering the subject became an end in itself, not a means of preparing students to meet future challenges as workers and citizens. Now, there is vastly more information and knowledge to be learned than can ever be "covered." Colleges and universities need to recover the idea that the subjects are not ends, but means to developing certain basic abilities and habits of the heart. This is a challenge for every institution in the system.

Chapter V—The Challenge of Quality II: Inadequate Incentives

Having argued that the quality of undergraduate education is, indeed, a problem, we come to a further set of questions. What are the sources of this problem? Why does it persist? Part of the responsibility lies with the administrators, faculty and students who make up the college community. But the members of each college community are, in turn, influenced by the incentives embedded in the way things work in the higher education industry at large.

In this chapter, I want to take a brief tour of this surrounding environment. We start with the characteristics of the marketplace in which colleges and universities compete for students and faculty. We move on from there to the way government policies influence college and university life. From there we go to the organizations for self-regulation that higher education itself has established. These include the accrediting agencies that subject entire colleges, as well as programs within them, to processes of peer review. These entities also include the scholarly and professional communities, which peer review the work of individual members of their professional fields.

The purpose of this tour is to find out whether the incentives that are embedded in this surrounding environment encourage members of the college and university community to pay attention to continuous quality improvement. If they do not, then these particular features of the larger system add another dimension to the quality problem we must address. If they do, they are part of the solution. Obviously, if we could ever find a way to strengthen the external incentives for continuous quality improvement, we would be striking a major blow for quality.

Our tour will stop first at the marketplace for students and faculty, drive quickly by government agencies and the accreditation system, and stop once more at the scholarly and professional communities. Every site is relevant to quality concerns, but some of these sites are more fascinating to educators than to those outside higher education.

The Marketplace: The Triumph of Prestige over Quality

Relative to the rest of the world, our colleges and universities enjoy a remarkable degree of freedom from governmental control. Our earliest institutions were founded by private groups, and autonomy from governmental control has remained a strong value ever since. If the market is

not king, it is nearly so. Colleges and universities compete with one another, sometimes fiercely, for just about everything—students, faculty, government funds, private funds and athletes who can bring winning football teams.

As a result, college and university presidents must pay attention to a wide variety of both internal and external constituencies: students, faculty, parents, alumni, local community groups, foundations, corporations, government and the like. And each of these constituencies not only needs attention but tends to want different things. Hence, the famous quip of Clark Kerr, former president of the University of California system, that the job of a university president was to arrange "sex for the students, parking for the faculty, and football tickets for the alumni."

This intense competition clearly has its advantages. Competition among universities for federal research funds, for example, has produced an entrepreneurial-minded, research-oriented faculty that has produced stunning breakthroughs in research. But competition in this market works reasonably well because those who make decisions by the market are reasonably able to judge the quality of the projects being proposed. In the peer review system that operates in research, faculty with acknowledged expertise decide which proposals receive support.

But in the primary marketplace that affects undergraduate education—the marketplace of competition for prospective students—the story is quite different. Prospective students and their parents pick colleges and graduate schools for a variety of reasons. Geography is a potent factor, judging by the large number of students who attend colleges within 50 miles of their homes. Many other factors—price, size, religious traditions, kinds of student bodies, athletic programs, chance encounters with students or official personnel who know the institution—also come into play.

As a consequence, the student marketplace encourages colleges to try to attract students with all sorts of special programs, facilities, activities and services that students seem to want, from housing accommodations and gymnasiums to health services and computer facilities. But the marketplace does not exert any particular pressure on colleges to work continuously to improve their contributions to student learning. Indeed, looking at the way the market has operated in the past 25 years, I think it fair to come to an even harsher conclusion. In the sectors of higher

education where faculty engage in both teaching and research, the market has exerted powerful pressure *against* improving the quality of undergraduate teaching.

As nonprofit organizations, colleges and universities strive not to make annual profits but to achieve the more elusive goal of institutional excellence: to be "the best," whatever that may mean. The problem is, excellence is defined as having the best *resources,* including the most talented students and the most widely recognized faculty. Thus, the higher the SAT scores of the entering freshman class and the more renowned the faculty, the higher the "quality" of an institution is presumed to be. Few people ask whether the institution's resources are being used to produce gains in student learning.

The presence of talented students and faculty with national reputations does, of course, have something to do with quality. Students learn a lot from each other, and the student culture of a campus has an important bearing on such things as the amount of effort students generally put into their studies. Faculty who are actively engaged in research are likely not only to know more about their fields but also to communicate enthusiasm for scholarly inquiry to their students. But the mere *presence* of able students and talented faculty does not guarantee a powerful educational experience. A student at an Ivy League university, surrounded by the finest resources that money can buy, can have a miserable experience. And a student at the shabbiest college in America can be caught up in a thrilling educational experience. It all depends on how resources are being used to enable and produce student learning.

Although the competitive marketplace for students leaves a lot to be desired, the competitive marketplace for faculty actually undermines the quality of undergraduate education. This is so because, at least at present, the faculty members who have national reputations are faculty who do research. In contrast, being an excellent teacher brings local—not national—acclaim. So the national market for faculty talent is really only a market for faculty who do research. We do not find universities engaged in "bidding wars" for faculty members who are excellent teachers.

This in itself might not be so bad if it were not for the fact that teaching is a commodity that can be bargained away. Star faculty are lured to university positions with the promise of reduced teaching loads, which removes them from contact with undergraduates. Faculty members also

are promised the opportunity of offering courses on their specialized research interests, whether or not it makes sense for such courses to be included in the undergraduate curriculum.

All in all, the competitive marketplace in higher education provides incentives to institutions to focus their attention on acquiring prestige and the resources that bring prestige rather than on improving their contributions to student learning. And here is the final rub. This effect is now being given an enormous boost by the decision of mass circulation magazines to publish academic quality rankings based largely on reputational and resource measures of quality.

For years, people have been doing reputational and resource surveys of colleges and universities. But these were typically published in rather obscure journals and read principally by administrators and faculty interested in seeing where they stood among the "best" in their fields. But then in l983, *U.S. News and World Report,* with a circulation of 2.3 million, published its first college-ranking issue. *Business Week,* with a circulation of 900,000, entered the field in l988. This past fall, Newsweek, partnering with Kaplan Testing Service (both owned by The Washington Post Corporation), produced its inaugural guide to choosing a college. *Time,* partnering with *Princeton Review,* recently came out with its inaugural issue. College ranking by mass circulation magazines is now something of an industry in its own right. A recent study by several researchers at the University of California at Los Angeles (UCLA) estimated that the five publishers now in the ratings game are generating nearly $16 million per year in sales with their college issues.

So in recent years, for the first time, large numbers of prospective students and their parents have easy access to rankings of what are considered the "best" colleges. It is important not to exaggerate the influence of these rankings on applicants themselves. One recent study suggested that students who say that the rankings were very important to their decision process tend to be the high-achieving students who are applying to selective colleges—a distinct minority of all college-goers. Yet they are a very influential segment of the population. The more important point is that the rankings affect the behavior of the colleges themselves. To the extent that being "best" is determined by such things as entering students' test scores, the incentive for colleges and universities to focus on recruiting students who can enhance their reputation, rather than on educating the students they have, is strengthened ever more.

Government: Groping for Handles

Our tour now takes us to where the gorillas are kept. The federal government is, of course, a source of powerful incentives to pay attention to research. And through its student-aid programs, the government also puts its financial power on the side of student choice. Twenty-five years ago, debate raged over whether the federal government should finance access to higher education by providing assistance to students or directly to institutions. In choosing to assist students, the federal government strengthened the power of the marketplace.

Various federal agencies offer incentive-grant programs for undergraduate academic improvement, some of which have been important stimuli for quality improvement. And as concern about undergraduate education (especially in math and science) has grown, federal officials have started groping for other means—both sticks and carrots—of weighing in on the side of quality improvement.

I believe it is fair to say, however, that the federal government has yet to find any major new handles that are making campuses sit up and pay attention. Initially, the Clinton administration's proposed tax credit was to be made available only to families of students who earned a B average during their first year in college. But the specter of putting the Internal Revenue Service in the business of reviewing students' grades generated such opposition that this feature of the proposal was dropped.

State governments, of course, have more direct "ownership" responsibilities regarding public institutions and are much more involved in shaping the affairs of the institutions under their control. But the first point to be made is that the dominant thrust of state policies and practices are still rooted in the great expansionist era of the l960s, when the states saw their primary task as one of building capacity. At the time, most states financed public institutions through formulas based on the number of student credit-hours. The state did not ask if students were graduating. In theory, the very same students could mill around in an institution for years, never making any academic progress, and the institution would receive the same amount of funds it would have received if those students had graduated and incoming freshmen had taken their places. Funding formulas based on student enrollment contain no particular incentives for institutions to be concerned with student achievement.

In the mid-l980s, however, things began to change. State officials began thinking about their financial role as an investment that should bring returns, and they began looking into policy levers that would direct their investments toward the states' educational priorities. In all of the familiar categories of state policy making--resource allocation and fiscal policy, the review and approval of individual academic programs, regulation and accountability reporting, and state-wide master planning—states began to experiment with new strategies, a number of which were intended to strengthen incentives for quality improvement.

As a gross generalization, I would say that the first round of efforts during the l980s did not have much positive effect. Many states, for example, required all public institutions to assess student learning and report the results. Campuses reluctantly complied, but they shipped reports back to their state capitals that could not be compared across institutions and were never used by states as a basis for any further decisions. Accountability assessment was a train on its own track, leading nowhere in particular.

In the second round of efforts that began in the early 1990s, things have become a good deal more interesting. States discovered "performance funding," for example. A 1995 survey of state higher education officers found that nine states had adopted policies linking some portion of state funds to the achievement of goals the state cared about. According to a Trusts-supported study of the indicators states are using, more than half of the states have picked out indicators that relate to quality improvement of undergraduate education, for example, retention and graduation rates, faculty teaching loads, test scores of students entering the professions, transfers from two- to four-year institutions, and uses of technology for distance learning.

Self-regulation through Accreditation: Confusion over Purposes

Yet a third potential source of incentives for quality improvement lies with the system of quality assurance we call accreditation. There are six regional accrediting associations, which accredit entire colleges and universities, and some 70 recognized specialized accrediting agencies (such as the American Assembly of Collegiate Schools of Business and the American Bar Association), which accredit particular programs in particular fields. Because this part of the tour gets into somewhat arcane territory, I will simply make a few major observations as we pass quickly by.

The six regional agencies that accredit entire institutions could be a powerful force for quality improvement. At present they are not, and the central reason is that they are trying to serve too many purposes at once. Regional accreditation began at the turn of the century as a vehicle to bring order and uniformity to the process of college admissions. Rather than send teams of their own faculty to inspect the quality of high schools that students were applying from, college and university presidents established a regional agency—the North Central Association—to do this task. In time, the process of having college faculty accredit high schools was extended to include the accreditation of colleges and universities as well. The purpose was to certify that institutions met minimum standards.

In the l930s, accreditation took on a second purpose. The North Central Association pioneered the idea that an institution applying for accreditation should be judged in the light of its own stated mission. This mission-centered approach, in turn, gave rise to the notion that the process of accreditation should entail three stages: an institutional self-study, a visit by external examiners and a report by the examiners to the accreditation agency. Other regional agencies were established, financed by institutional dues, and accreditation evolved into a collegial process aimed not only at certifying minimum standards but at improving quality.

In 1952, with the enactment of the Korean War GI Bill, accreditation took on still a third accountability task—that of certifying to the federal government that institutions were "worthy" of receiving federal funds. Concerned that the Korean War GIs would use government funds to enroll in fly-by-night institutions, the legislation stipulated that the federal government would publish a list of nationally recognized accrediting agencies that, in turn, would certify institutions eligible to receive funds under the Korean War GI Bill. Soon accrediting agencies were in the business of assuring both state and federal governments about the quality of the institutions in which they were investing.

Certifying minimum standards, improving quality and assuring governments that their money is well spent are all laudable purposes. But they do not necessarily fit well together, nor are they best performed through a single, one-size-fits-all process of self-study, visitation and report writing. Not surprisingly, none of the constituencies that accreditation is supposed to serve is terribly pleased with the process. Smaller and more vulnerable institutions that have taken the

process seriously have benefited greatly from the self-study and peer review. But many larger and well-established institutions that have no use for the quality improvement task treat regional accreditation like an annoying fly buzzing about them. Meanwhile, accreditation's governmental constituencies are becoming increasingly restive about the failure of accrediting agencies to assure governments about a growing host of issues that governments care about, such as efficiency in the use of resources, financial integrity in using funds and default rates on student loans.

The big picture here is that regional accreditation does, to some degree, nudge institutions to think about the quality of undergraduate education. Academic leaders who themselves care about quality improvement often use the occasion of accreditation to focus the attention of their institutions on educational improvement agendas. Yet accreditation could be a much more powerful force if the regional accreditors would clarify their purposes and develop methods of institutional review that are specifically related to each of the three distinctive tasks of accreditation.

The specialized agencies that accredit specific programs present another set of issues and opportunities. Unlike the thinly staffed regional agencies, many specialized agencies are well-financed, well-staffed organizations that exert powerful pressure on the programs they accredit. The bad news is that this pressure largely boosts the resource/reputational views of quality instead of focusing attention on student learning. A few specialized agencies, such as the American Assembly of Collegiate Schools of Business, have made serious efforts to insist that the schools they accredit present evidence of their contributions to student learning. Most specialized accrediting agencies, however, are thinly disguised lobbying organizations for the view that colleges and universities should be putting more resources into the particular fields the agencies represent.

Professional Accountability: The Separation of Teaching from Scholarship

Finally, we come to the academic profession itself. "Professional" work, by definition, is expert work that requires assessment by other members of the profession. Arguably, the most relevant and the most helpful source of pressure for continuous quality improvement would be pressure from colleagues in a faculty member's own scholarly field.

Yet here we come up against one of the great ironies of the academic profession. With respect to the work of research, faculty members belong to a genuine community, a community of scholars. The earning of a Ph.D. is, in effect, the rite of passage into a community of ongoing discourse about the advancement of knowledge in one's field. Every scholarly field develops journals, annual meetings and dozens of other ways to facilitate discussion about the findings and breakthroughs in the field. To be a scholar is to assume an obligation to share one's work with one's peers. Published work is subject to elaborate arrangements of peer review. As a result, young scholars entering the field, as the saying goes, can "stand on the shoulders of giants," the great scholars who went before them.

But with respect to the work of teaching, no such community exists. Teaching is a largely private act, something that takes place behind the closed doors of the classroom. Faculty talk to each other about their teaching in the elevators and gripe about their students over lunch. But they do not really engage each other in reflecting on their teaching practice, the way doctors reflect on their medical practice, for example. So knowledge of good teaching practice rarely gets shared. Most of the various disciplines sponsor some sort of journal about teaching in their field, but few of these have much status or readership. Although research is subject to elaborate systems of peer review, teaching is evaluated principally through student ratings, with faculty playing secondary roles. When it comes to teaching, new faculty do not stand on the shoulders of giants; they start over from scratch.

Treating teaching as though it were primarily "private property" sends a powerful message. It says that teaching is not really considered scholarly work that requires scholarly judgment to help determine whether it is being done well. It says that teaching is easy work that students are qualified to judge, whereas real scholars are engaged in more difficult and important things.

Until teaching is considered community property, worthy of professional peer discourse and peer review, teaching will never have much status in academic life. And faculty will never get better and better at it. So the problem is serious, and it is worth taking another moment to ask why this is so. Why has the academic profession never come to view teaching as an intellectually interesting field, worthy of time and sustained inquiry?

The answer, I believe, lies in the fact that as academic specialities developed in the modern university, a perspective was lost. Disciplines such as biology, mathematics, and English grew up in one part of the university. Over in another corner, departments of education and psychology grew up and organized themselves around the study of teaching and learning *in general.* Teaching came to be associated with technique—how to present a good lecture or lead a good class discussion—regardless of the subject that was being taught. This is like assuming that someone who is a good basketball coach can be a good football coach—as long as he knows about "coaching" in general. The lost perspective is that teaching is also a matter of translating the knowledge of a particular field into terms students can understand. Knowing how to teach is one thing; knowing how to teach Newton's second law of motion to an introductory physics class is another. All faculty who are excellent teachers know this. But by failing to talk about teaching in discipline-specific terms, the academy at large has not honored teaching as a rich, complex activity worthy of scholarly attention.

Toward a Reinforcing System of Quality Assurance

I believe we should conclude from this tour that neither the marketplace, the role of state and federal government in higher education, nor the mechanisms of self-regulation create a consistent set of pressures for quality improvement. But each arena does offer opportunities for constructive interventions. The ranking systems used by the national media can be improved. States can base performance-funding policies on better and more thoughtfully conceived indicators. Accrediting agencies can clarify their purposes and design methods of quality assurance more suitable for each of the tasks they undertake. Professional societies can treat teaching as a scholarly activity that deserves to be peer reviewed.

Another observation emerges from our panoramic overview. None of the various constituencies we visited--neither students, parents, college raters, government officials, accreditors or professional societies--see themselves as part of an overall system of quality assurance. If they did, and if the actors focused on the things they do best, and if they were informed by an understanding of what really counts in determining the quality of undergraduate education, they could reinforce each other's efforts.

Let me end with an example that illustrates this point. Suppose educators could agree on a few simple features that define a meaningful undergraduate education: for example, that students receiving a bachelor's degree should be required to write a great deal in the course of their studies. (Note that I'm not even saying they should write well, simply that they should have lots of practice.) Now suppose that all of the various external constituencies that influence colleges and universities—students, parents, college raters, governments, accrediting agencies and professional societies—asked the same question, "How much writing goes on during the course of the typical undergraduate experience?" If this happened, very soon, I suspect, undergraduates would be doing a lot of writing. At the moment, however, the signals coming in from outside constituencies regarding quality improvement are confusing and conflicting.

Chapter VI—The Challenge of Connection

Finally, we come to the lost connection between higher education and the problems that concern America. In the l960s, American society and higher education were joined in the pursuit of two great tasks—expanding opportunity and winning the cold war. Today, both educators and leaders outside the academy seem less certain about what it is that colleges and universities can do for the nation.

Part of what is at stake in the loss of connection between the missions of colleges and universities and America's vital needs is the political standing of higher education, especially with state-level political and business leaders. If colleges and universities sit on the sidelines of the struggles to address the great issues confronting America, they will have a harder time claiming political support for any of the functions they choose to perform.

Even more important, however, is whether colleges and universities have a larger contribution to make to America's renewal beyond simply responding to the demands of the marketplace. Many colleges and universities can get along fine admitting talented students and helping them along the route to a comfortable life. Universities can get along fine fostering research, without worrying about its importance to the society at large. But most of us, I suspect, think we should expect more from our institutions of higher education.

I am not talking here about the "service" universities perform in the familiar rendition of a university's three-part mission of teaching, research and service. In practice, under this formulation, service has become a residual, catch-all category. It has become a way to acknowledge the contributions faculty make beyond teaching and research: as citizenship within the university, external service to the community and profession-based service rendered at large. Thus defined, service has been trivialized and rewarded as an "extra," somewhat like getting points in the Civil Service for being a veteran.

Rather, I am referring to a conception of the university's social mission in which "serving" America is the wellspring of all the fundamental activities of the institution—the inspiration for decisions about which students shall be admitted, what educational purposes the teaching is aiming to achieve, and what kinds of research and outreach takes place. In a university motivated by a strong sense of social mission, decisions about who should be educated and toward what ends would be made with reference to America's vital needs. And faculty would ask each other hard questions about the social value of proposed research projects.

This is not an argument for shaping the affairs of higher education with reference to a particular political philosophy, liberal or conservative. Rather, it is a point of view that is rooted in the notion that colleges and universities are uniquely suited to serve a *counterweight* function in American society. If society is caught in tradition, colleges and universities can point to the future. If society is racing to the future, colleges and universities can remind it of its past. If the nation is coming unglued, as ours seems to be today under the onslaught of the mass media and commercialism, colleges and universities can—and should—lean hard into the wind and become a force for social renewal.

But how do we translate these lofty aims into concrete activities? I see two possibilities. First, we can encourage educators and political leaders to take higher education's social responsibilities into account when they formulate institutional missions and public policies. Second, we can help colleges and universities become more engaged in the arena of social renewal over which they have most influence: the nation's schools and the quality of the education they provide.

College/University Missions and America's Needs

The first and perhaps most important way that colleges and universities enact a larger social mission is by reaching out to and admitting students whose education is vital to our future. With respect to higher education's continuing role as an instrument of inclusion, there are two enormous challenges before the country.

Economic and social inequality is increasing in America, and this is undermining the role that colleges and universities can play in equalizing opportunity. As the *Washington Post* put it recently, powerful economic forces are dividing America into two different economies: one inhabited by prosperous, optimistic "winners" and the other by struggling, increasingly embittered "losers." In the l960s, the postwar boom lifted all boats. Today, our economy showers its favors disproportionately on those who are already advantaged, especially the educated.

When we consider this trend in light of the specific trends noted in Chapter II—stagnating family incomes for the middle class, declining public resources available for higher education and rising educational costs--the picture that emerges is a distressing one. A recent study for the Educational Testing Service took into account all of the factors adverse to equality in the receipt of postsecondary education degrees, including higher costs, declining student aid and higher dropout rates. The researchers came to the following depressing conclusion: "In l979, a student from the top income quartile was four times more likely to obtain a four-year college degree by age 24 than a student from the bottom quartile; by 1994, he or she was 10 times more likely to get a degree." Our national commitment to equalize opportunity through higher education is eroding.

The second challenge relates to the national effort begun in the early l960s to use education as a means of bringing minorities into full participation in American life. I hardly need say that the stakes here for America are very high, because continuing to make progress on this agenda is key not only to our continued productivity but also to the health of our democracy. Racial and ethnic differences have been among the most enduring sources of human conflict throughout history. Polls show that Americans typically underestimate the seriousness of racial and ethnic conflict as a world problem.

It is all too easy to forget how severe the disparities in educational attainment were in the early 1960s. In l964—the year of landmark civil rights legislation—less than half of blacks aged 25 to 29 had even completed high school. Blacks, Hispanics, and Native Americans were virtually absent from prestigious universities such as Harvard, Princeton and Yale. Even Berkeley, a public institution with a long tradition of inclusiveness, was overwhelmingly white. Judged from the starting point of this low base, the years since then have been years of remarkable progress. But large gaps still remain.

By l989, the proportion of blacks ages 25 to 29 who had completed high school was almost the same as whites: 82 to 86 percent. In this sense, the attainment gap between blacks and whites is now centered in higher education. Also in 1989, the proportions of 25 to 29 year olds who have completed two or more years of college stood at 38 percent for whites and 27 percent for blacks. The proportions completing four or more years of college stood at 24 percent for whites and 12 percent for blacks.

Hispanics experience an attainment gap that is still severer. By 1989, only 61 percent of Hispanics ages 25 to 29 had completed high school. Only 21 percent had completed two or more years of college. And only 10 percent had completed four or more years of college. The attainment gaps are also severe with Native Americans.

It is also critical to understand that simple participation rates gloss over other disparities that are even more striking. For example, when we look more closely at grades, test scores and achievement within particular fields of endeavor, the disparities increase. Black and Hispanic students, for example, are very poorly represented in the highest achievement categories of tests like the Scholastic Aptitude Test (SAT). This is why the prospect of a rollback in affirmative action could be so devastating, especially to enrollments at elite institutions. For example, in 1992 to 1993, only 63 black students nationwide—0.7 percent of all black test takers--scored above 165 (on a scale of 120 to 180) on the Law School Aptitude Test. Based on this performance, Theodore Cross, editor of the *Journal of Blacks in Higher Education,* has estimated that a color-blind policy would reduce the number of blacks admitted to the nation's 20 most prestigious law schools by 80 percent.

The second major way that colleges and universities enact their social mission is to educate in a way that motivates and prepares students to use their talents for the good of the larger society. This question has been "on the screen" of college and university leaders since the early l980s. At that time, Frank Newman, president of the Education Commission of the States, and three university presidents (Donald Kennedy at Stanford, Timothy Healy at Georgetown and Howard Swearer at Brown) founded an organization called Campus Compact, expressly dedicated to mobilizing presidential leadership for student volunteerism, civic engagement, and a more expansive vision of the college and university mission. Campus Compact has grown to include more than 500 college and university campuses and a number of state affiliates, pointing to significant enthusiasm for the idea that colleges and universities can do more to educate students for civic leadership.

A third major way that colleges and universities enact their social mission is to engage in the kind of research and professional outreach that connects with America's most urgent problems. As the nation's attention has shifted from the cold war to other problems, universities have been struggling to adapt—with only partial success. Throughout much of the l980s, the nation was preoccupied with strengthening its ability to compete in the new global economy. Influential university leaders argued that increased basic research was critical to America's competitiveness, but this argument never really caught on. And as Derek Bok finally pointed out to his colleagues, the argument was always overblown. Basic research is just one of a long list of factors that contributes to competitiveness. If universities really wanted to contribute to making America competitive, Bok argued, they would focus on applied fields such as teacher preparation, nursing and social work that are key to improving the quality of the American work-force. Yet these are precisely the fields that university leaders typically neglect, and, as a result, continually struggle for status and resources within the modern university.

The fundamental and underlying tensions between basic and applied work, and between disciplinary and problem-oriented modes of organizing research, are familiar to everyone in higher education. Academicians place the highest value on research that contributes to theory building, not the kind of applied research that contributes to solving practical problems. Academic departments are organized around disciplines, not social problems. Thus, faculty who

do engage in research and outreach that is focused on addressing immediate and practical problems do so at a price: the loss of prestige.

Nonetheless, efforts are under way at many levels of academic life to strengthen connections with the community at large. Universities that are not in the top tier of basic research institutions, especially those in urban areas, are forging new identities around ideas of serving their metropolitan area. Universities are rapidly proliferating new centers, institutes and other internal organizations that organize faculty across disciplinary lines. And within almost every discipline and professional field, scholars are beginning to debate issues concerning the value to be attached to various forms of scholarly work.

The San Diego Dialogue (Dialogue), sponsored by the University of California's La Jolla campus, offers an example of a university that is now providing policy leadership for its surrounding region. What promoted the Dialogue was a growing despair over the fragmented character and uncivil tone of efforts at regional economic and civic development. Community leaders decided that what was lacking was a forum or body capable of transcending parochial interests. Drawing on the prestige of a former chancellor and the entrepreneurial skills of an energetic director of university extension, the university set itself up as a neutral convener of the region's key leaders. One thing led to another and soon university faculty members from a variety of departments were undertaking research that transformed the perceptions of what the cross-border region of San Diego and Tijuana needed and where its future might be. Today, the San Diego Dialogue is a positive force for collaboration and policy development.

The K-12 Connection

Of all the arenas in which colleges and universities might contribute to the rebuilding of American society, none is more important than working with schools. The quality issues in the schools cry out for attention. Colleges and universities have more influence over schools than any other sector in American life. Politically, higher education could generate enormous good will from its work with schools. Especially for institutions such as regional state colleges and universities that cannot connect to the public through high-profile athletic teams or facilities such as medical schools, reaching out to the schools is one of the best avenues available for engaging the larger community.

There is no doubt about where higher education's most important political constituency stands on this matter. In a l995 state survey commissioned by the National Education Association, 58 house and senate education chairs in 49 states were asked to identify their highest priorities for higher education. Teacher preparation was first (88 percent), improving undergraduate instruction and advising followed (86 percent), and improving the critical connections between higher education and the schools was third (82 percent). Research directed at solving social problems came in much lower (44 percent), and basic research came in last (30 percent). The political message is clear. It is also clear that state political leaders are gradually coming to view elementary, secondary and higher education as "all one system."

Partly as a result of these growing pressures, the "K-12 connection" has been picking up momentum as a topic of conversation and action within higher education for nearly a decade. Discussion and action has focused around three specific connections: admissions; teacher preparation; and "service," meaning outreach efforts aimed at K-12 services, teachers and administrators.

Admissions policy making is a textbook-perfect case of power and responsibility. The act of setting standards for college admissions gives colleges and universities enormous power over the academic work that goes on in K-12. To exercise this power responsibly, colleges and universities must take the needs and interests of the K-12 system into account in the setting of these standards. I will have more to say in the next chapter about what this might mean.

Teacher education reform has now been on the national agenda for about a decade. From the l960s to the mid-l980s, colleges and universities looked on their schools and departments of education as undesirable but rich relatives, tolerating education as a field of study only because of the revenues the schools brought in. But in the last decade, administrators and faculty alike have begun treating education more respectfully, and education schools themselves have raised their standards, improved their curriculum and started to work with the K-12 sector in ways that close the gap between academic theory and professional practice. Although teacher education remains a troubled academic field, it is also the case that the last six or eight years of effort have brought real improvement. I also return to this subject in the following chapter.

As to the service arena, school/college partnerships have proliferated, expanding into many academic departments and programs across the entire university, and reaching into earlier and earlier grades in the schools. A typical university now sponsors partnerships aimed at providing special services to students (for example, bringing eighth-graders to campus for summer enrichment programs in mathematics), partnerships aimed at curricular improvement (such as summer institutes for science teachers), and partnerships to advance the ongoing professional development of teachers and administrators (professional development schools sponsored by schools of education). And in recent years, consortia of colleges and universities and various community organizations have developed comprehensive, multipurpose compacts such as the Trusts-supported Community Compacts for Student Success, which embrace several of these aims at once.

With all of this activity one might expect colleges and universities to be enjoying applause from politicians, business leaders and school leaders deeply engaged in school reform. Instead, policy makers tend to be critical, even angry, about the role they perceive colleges and universities to be playing in school reform. Many either say that colleges and universities are not "players" in K-12 reform, or worse still, that they are obstacles to the reform movement.

How can this be? How can colleges and universities be so involved and yet be perceived as either uninvolved or a source of impediments? I believe there are three explanations.

The first is that the many and varied grassroots engagements that connect colleges and universities to schools have not been part of a visible, public leadership strategy on the part of higher education. The contrast with the role of business in school reform is striking. Years ago, when the leadership of the business community decided to make school reform a leading issue, mass circulation magazines like *Business Week* and *Fortune* were filled with calls to arms from chief executive officers such as David Kearns at Xerox. Business leaders also institutionalized their interest through organizations like the Business Roundtable and the Committee for Economic Development. Despite the public visibility, however, there remains a great slippage between the business community's public leadership on the one hand and on-the-ground involvement, corporation by corporation, on the other. The business community has set an

agenda but has yet to deliver fully on it. In contrast, colleges and universities are engaged in myriad ways, but higher education's leaders have yet to set forth a visible agenda.

A second explanation lies in the mismatch of scale. There are approximately 3,600 accredited colleges and universities in America, some 16,000 school districts and about 110,000 schools. Every college and university in the country could have a major project underway in three neighboring schools, and there would still be 100,000 schools left untouched. The scale of the need in the K-12 sector is simply enormous.

There is still a third explanation for the little credit colleges and universities are receiving for their work with schools, one that is especially relevant to what the Trusts might do in the future. Colleges and universities are no longer providing help that is completely in tune with the strategies that school reformers are now pursuing.

Since the publication of *A Nation at Risk* nearly 15 years ago, school reformers have traveled a remarkable journey. Reformers initially thought that such changes as longer school days and more discipline would solve the problem, whereas today's reform leaders agree that far deeper and more fundamental changes in the basic structure and culture of schools are necessary. Yet the reform community is divided on the best routes to get from here to there. One school of thought, which the Trusts have strongly supported, champions systemic reforms organized around new standards of what students should know and be able to do. Another branch of the reform effort, illustrated by the Coalition of Essential Schools, founded by Theodore Sizer, favors local community efforts to implement new design concepts. A third branch favors market-driven approaches such as vouchers and charter schools. What all of these schools of thought have in common is their belief that the traditional "factory model" of schooling, in which teachers labor like blue-collar workers, following rules tightly prescribed by others, has got to go.

These new visions of the fundamental reforms that schools must undertake are now sources of new tensions with colleges and universities. In many cases, the contributions that universities are making to school improvement no longer reflect the leading edge of thinking among school reformers. For example:

- University-based "early intervention" programs are wonderful for the students who are lucky enough to be touched by these supplementary enrichment efforts. But the add-on services that universities provide do not do much to change the regular classrooms where the children still spend most of their time.
- Summer institutes and other one-time outreach programs for teachers are helpful, but even more than these one-shot programs, teachers need professional development opportunities that are closely connected to the ongoing daily work they do in schools.
- Efforts to upgrade the status and quality of schools of education are commendable. But students preparing to become teachers acquire their ideas about how to teach, not only from professors in schools of education, but from the professors of history, chemistry, mathematics and all the other academic subjects they study in college. Thus, the preparation of effective teachers requires more than "teacher education." It requires the "education of teachers" by the entire university.

For colleges and universities, working in the K-12 sector is unlike working in any other larger social arena. When colleges and universities engage the health care sector, the criminal justice system or the environmental arena, their influence is exercised through the quality of the people they train for these sectors, the quality of the research they do and the quality of other services they provide to these sectors. But in the case of the K-12 system, colleges and universities also model what education is all about. Everyone who is involved in Little League baseball, from the kids to the coaches to the parents, absorbs ideas about how the game should be played from the way it is played in the big leagues. Similarly, everyone engaged in elementary and secondary education—students, parents, teachers and everyone else—gets their ideas about what education should be from the way colleges and universities "play" higher education.

Being a resource to the schools is, therefore, only a part of how colleges and universities can help with the task of school reform. The work also involves something more fundamental: making decisions about matters "internal" to colleges and universities with an eye toward their external effects on the schools. I will return to this theme when I discuss the role I think the Trusts can play in helping colleges and universities work with schools to achieve high standards.

Reviving Connections

In sum, underlying the erosion in public financing for higher education there is a deeper issue, an issue of reformulating the public purposes that colleges and universities can perform in the 21st century. The Trusts cannot address the challenge of connection in its entirety. But we can encourage colleges and universities to work in new ways on one of the most critical challenges to America's social renewal—improving the quality of education provided in the schools. And we can help design public policies that will strengthen the role colleges and universities can play in meeting America's vital needs.

Chapter VII—A Higher Education Agenda for PCT

America's colleges and universities are not in crisis. But the problems we have identified in the previous chapters are serious challenges. In the face of rising costs and declining revenues, colleges and universities cannot continue to conduct business as usual. As educating institutions, they are not nearly as powerful as they could be—and need to be—to meet America's emerging challenges. And to reclaim their status as a worthy public investment, they need to more actively engage in the problems that are now on the nation's agenda.

What confronts America's higher education enterprise, in brief, is not a crisis but something that may be even more debilitating to its long-term health and role in our national life: low expectations. Both America's expectations for higher education and higher education's expectations for itself are simply too low. The danger is that those who lead higher education, as well as the public that supports it, will settle for a level of performance that is much less than it could be.

The Trusts, accordingly, should call upon higher education and the larger public to meet higher aspirations. We should commit our resources and our prestige to the proposition that higher education can be much better than it now is. Although there are many versions of what being better entails, several themes emerge from our preceding analysis.

Being better means not just offering courses and providing instruction, but taking responsibility to produce student learning. This, in turn, entails thinking harder about the kinds of learning that students and society need in the 21st century. Simply getting more students through the pipeline

is not good enough. All constituencies relevant to higher education must aspire to help students achieve new levels of learning--learning that entails real understanding, and learning that includes the literacies now required for our changing society, especially the literacies related to leading a life of engaged citizenship.

Being better means working harder at providing higher education that is more affordable and efficient for all concerned. The key here, again, is to think first in terms of student learning, and then re-engineer the way academic work gets done from this perspective. Using technologies not only to enhance learning but also to reduce costs, and breaking down artificial barriers between schools and colleges, are both means to accomplish this purpose.

Being better means becoming more deeply engaged in helping America solve its pressing social problems. First and foremost, I believe this should involve taking part in the national endeavor in which higher education has the most potential leverage: the reform of schools.

So how can the Trusts help raise the aspirations of the entire higher education enterprise? The preceding analysis points to an ambitious agenda for the Trusts—an agenda that aims to achieve three ambitious goals.

First, I propose that we take on the task of forging new aspirations for undergraduate education as an explicit and primary goal. As I argue subsequently, I believe there are several routes to this end. Partly, it is a matter of encouraging institutions to see their educational task in a new light; partly, it is a matter of fostering approaches to pedagogy and ways of working that set standards for the industry at large; and partly, it is a matter of strengthening the incentives for continuous quality improvement. By whatever the route, our goal should be clear: we stand for higher aspirations for undergraduate learning.

Second, I propose that we encourage colleges and universities to become more strategically engaged with their schools and their communities. As I argued earlier, colleges and universities are involved with the K-12 system in many ways, but they are not strategically engaged. In the drama of school reform, colleges and universities are still the missing actors. The Trusts can foster new kinds of engagements that will reinforce the goals of school reform we are pursuing directly through our work with the K-12 system.

Finally, we need to recognize that the faculty holds the keys to progress on every item on the preceding agenda. Accordingly, as a third, explicit goal, I propose that we take on the task of fostering a set of professional ideals and policies that will shape a new professorate—a professorate for the 21st century. We will measure our progress toward the first two goals in terms of changes we can observe in colleges, universities and schools, whereas we will measure our progress on this third goal by looking at changes in the academic profession itself.

This is an ambitious agenda, so allow me a word in its defense. First, each of these goals and the cluster of specific objectives I outline subsequently is mutually reinforcing. To push forward on one front, such as encouraging colleges and universities to take responsibility for student learning, reinforces the work on another front, such as becoming more deeply engaged with the schools. Both goals one and two will be enormously aided if we can reward our faculty for this kind of work. In this sense, the grantmaking strategy I am proposing is a bit like acupuncture--finding a number of pressure points that will change the energy flow of the whole system.

Second, not all of the nine particular objectives that I set forth as a way to enact the three goals imply a whole program of grantmaking. In the case of developing new incentives for quality improvement, for example, I can imagine that after a year of thinking and planning we might come up with only two or three strategic projects. These projects would be major strategic initiatives, but they would not imply an ongoing commitment of resources.

Third, I do not propose to pursue all nine objectives with equal intensity over time. In pursuing an objective such as "pedagogies for engaged learning," we may find that a modest push from the Trusts is enough to give momentum to a new movement—and that this itself is all the Trusts should seek to achieve. We could then declare a victory and move on to other things. By contrast, in pursuing an objective such as the redefinition of the Ph.D., we may find that no amount of resources will move this particular mountain, that the field itself is not yet ready for a major investment. My point is that, until we try out some of these ideas, it is difficult to know how to prioritize this agenda. The agenda proposed here is an "opening" agenda. In the three-year work plan that will be presented to the board a year from now, the priorities will be a good deal clearer.

GOAL I:

New Aspirations For Undergraduate Education

To forge new aspirations for undergraduate education, I believe we need to work toward a future state of affairs in which four things are true: (l) increasing numbers of colleges and universities take responsibility, not just for providing teaching but for producing student learning; (2) increasing numbers of faculty members employ pedagogies that truly engage students; (3) there are a variety of good, nationally known examples of uses of technology, especially in high-enrollment introductory courses, which both enhance learning and reduce costs; and (4) strengthened incentives for continuous quality improvement are operating in the larger system.

Objective 1: Taking Learning Seriously

I propose, first of all, that we encourage colleges and universities to extend their teaching missions beyond that of providing instruction to that of producing learning; and that we support selected activities of institutions trying to do this, especially the activities of assessing student learning and awarding degrees based on clear criteria of student performance.

Since the beginning of the industrial era, colleges and universities have conceived of their missions in terms of teaching, that is, providing instruction. The principle vehicle for doing so has been an academic assembly line of courses and credit hours that eventually lead to a degree. Yet this is like saying that the business of General Motors is to operate an assembly line, and the purpose of medical care is to fill hospital beds. Teaching is a critical activity, but it is not an end in itself. To contain costs and to enhance the quality of higher education, colleges and universities must now extend their mission to include an explicit commitment to, and responsibility for, student learning.

How can we tell when an institution is moving down this path? First, institutions embracing this extended mission would assume responsibility, not just to provide good and ethical teaching, but to enable their students to achieve demonstrable gains in learning. Obviously, there are limits to how far this point can be taken. Students must assume responsibility for their own learning. But institutions embracing this extended mission commit to sharing this responsibility with students. Institutions that commit to producing student learning would accept the obligation to modify their behavior and try new approaches if things are not going well.

Second, institutions that embrace this extended mission would be clear at every point about their standards--standards for admission; standards for learning in each course; and, especially, standards for graduation and the awarding of degrees.

Third, institutions embracing this extended mission would necessarily have to establish and make effective use of an infrastructure of assessment information about how students are doing. Both tasks—acquiring the information and using the information to inform decisions for improvement—are critical. I am not calling here for a new wave of testing. Much of the student learning that is important to assess can be evaluated by faculty members serving as expert judges—much like gymnastics and skating competitions are judged by panels of experts who combine their votes into a single score. Were the faculty members to ask even such relatively simple questions as, "How much do our students write during the course of their student careers?" it would yield highly revealing information.

Fourth, institutions embracing this extended mission would continuously re-examine their structures and policies in light of the findings from these assessments. The assumption that instruction needs to take place within the confines of courses that meet at set times, each taught by individual members of the faculty, would no longer be sacred. Institutions would think about productivity, not in terms of the costs per hour of providing instruction but in terms of the costs per unit of student learning.

Although there are various ways the Education program might encourage institutions to travel this path, our first core activity will be to create an ongoing summer institute. We would invite to the institute colleges and universities with a clear vision of their educational missions and the desire to restructure their organizations around specified goals for student learning. During the institute experience, campus teams would develop plans that they would enact during the academic year, returning for a second summer to share their work and plan the next steps. All participating institutions would become part of an ongoing network of institutions pioneering the path toward taking responsibility for student learning. Through a related set of grants, we would develop the intellectual capital of ideas and materials that would nourish the deliberations of those who attend the institute.

Objective 2: Pedagogies for Engaged Learning

Earlier in this paper, I characterized the dominant mode of teaching and learning in higher education as "teaching as telling; learning as recall." As we have seen, this mode of instruction fails to help students acquire two kinds of learning that are now crucial to their individual success and critically needed by our society at large. The first is real understanding. The second is "habits of the heart" that motivate students to be caring citizens. Both of these qualities are acquired through pedagogies that elicit intense engagement.

Fortunately, issues of pedagogy are finally surfacing as a topic for discussion and action. The most recent example is a l996 report, "Shaping the Future," issued by an advisory committee to the National Science Foundation. Culminating a long process of study and discussion by leading luminaries, this report comes down foursquare on the need for *all* students to learn the subjects of science, mathematics, engineering and technology through direct experience with methods and processes of inquiry. Active learning, hands-on science, workshop physics and other modes of learning by doing are now central items on the reform agenda for undergraduate education.

Beyond the fields of science, mathematics and engineering education, there are four separate conversations--four strands of pedagogical reform—that are moving in the same broad direction. Each is organized around a particular pedagogical idea, and each is capturing the imagination of a particular group of faculty in different fields.

One is *problem-based learning,* premised on the idea that powerful learning best occurs when students are working to solve concrete problems rather than studying blocks of classified knowledge. In 1966, the founders of the faculty of medicine at McMaster University in Ontario, Canada, committed themselves to this concept and enacted the first, full-blown vision of problem-based learning into practice. Instead of taking the traditional two years of basic science courses before beginning a clinical program, students at McMaster now are confronted with real patient problems, starting the very first day. Students work in collaborative teams and on self-directed projects, and the faculty members play a variety of innovative instructional roles as resource persons, unit planners, advisors, disciplinary consultants and assessors. Other medical schools have now adopted the McMaster model. A parallel movement is taking place in engineering education. And in a somewhat different version, problem-based learning is catching

on in business schools, where case-method teaching and other close-to-practice pedagogies have long been in vogue.

A second strand of reform, *collaborative learning,* is premised on the idea that powerful kinds of learning are more likely to take place when people work together than when individuals study in isolation. In recent years, the benefits of collaborative and cooperative learning and the power of peer groups in the learning process have become familiar topics of discussion and experimentation by faculty in the arts and sciences as well as the professional schools. And there is plenty of research evidence to document the claims. In a study of medical students at the University of London, for example, M. L. J. Abercrombie found that medical students developed diagnostic judgment—the key element in medical practice—more quickly and accurately when working collaboratively in small groups than when working individually. In the l980s at the University of California at Berkeley, Uri Treisman developed convincing evidence that collaborative learning was the key to the successful retention of minority students in calculus and other difficult mathematics courses.

A third strand of reform, *service learning,* sees service to the community as an integral part of the teaching and learning process. The kinds of service students engage in may take a variety of forms: for example, providing assistance to individuals in need, providing tutoring and other types of educational outreach in schools and undertaking field-based studies such as documenting the existence of toxic wastes in a given area. The key idea is that experiential learning through community service can be a powerful component of academic study if the two are brought together in structured reflection. Recent evaluations by two Vanderbilt professors and a RAND study led by UCLA professors Alexander and Helen Astin testify to the power of service learning in promoting skills development and attitudes of social responsibility.

A fourth strand of reform, *undergraduate research,* is premised on the notion that the kinds of apprenticeship relationships forged between graduate students and faculty that characterize the best of graduate education can and should be extended to undergraduate students as well. Pioneered by Massachusetts Institute of Technology professor Margaret MacVicar in the l970s, the idea of engaging undergraduate students in faculty research projects has now spread to many

institutions. Many universities now advertise research opportunities available to undergraduates, and many give undergraduates credit for independent study.

All these efforts represent streams of reform that are moving in the right direction, yet all remain marginalized pedagogies that operate on the sidelines of the dominant mode of lecture-based, didactic instruction. I propose that the Trusts' Education program seek to give new status and legitimacy to all of these movements and help these individual strands of reform unite in a powerful movement for pedagogical reform. Three strategies can make this happen.

The first is to enable individual institutions, or significant units within them, to achieve breakthroughs that lift pedagogies for engaged learning to the status of a distinctive and predominant pedagogy. With this strategy, we would be looking for institutions ready and willing to make pedagogy part of their overall institutional identity (as law schools have with case method teaching for example).

The only undergraduate institution I know of that has made a substantial, institution-wide commitment to problem-based learning is Aalborg University in Denmark. When Aalborg was established in 1974, the founding faculty decided that project-organized, problem-based learning would be the school's distinctive approach. Now approximately half of the curriculum—across all fields—is project and problem based. All 10,000 undergraduates work in small groups on a major project each semester. The extent to which this type of engaged learning influences other aspects of a university is apparent as soon as one steps on campus. Instead of the usual array of auditoriums and lecture halls, Aalborg boasts of more than 1,000 small offices that student teams use as bases of operations for their projects.

For institutions just beginning to use the new pedagogies, modest grants targeted on introductory courses in high-enrollment fields can have far-reaching and lasting effects—especially when the individual schools are linked in networks. Our second strategy, therefore, will be to create infrastructures through which the individual strands of reform can scale up to become more serious, and respected, movements. In every case, and especially the case of service learning, it will be important to document and present results and benefits within the context of each specific discipline. We cannot just tout the virtues of service learning, however. We must initiate projects

that address what service learning might mean in chemistry, physics, history and so on. In a number of the scholarly fields, the professional organizations representing the field are eager to work on this agenda.

Third, we can bring together the leading thinkers and practitioners of these various strands of reform; encourage them to explore their common intellectual roots; and, therefore, prompt a deeper and richer cross-disciplinary and cross-pedagogical discussion of how pedagogies for engaged learning can become a more coherent and powerful alternative to the reigning instructional paradigm.

As to our grantmaking technique, I believe this objective can best be pursued through an ongoing, open-grant competition in which the grant competition itself—the call for proposals, the review process, the grant announcements and the networks of grantees that will be created--reinforces our overall objective. The way the Trusts announces its interest, selects grantees and works with grantees can give visibility and status to the new pedagogies for engaged learning.

Objective 3: Using Technology to Enhance Learning and Reduce Costs

New technologies are now impacting campuses in several ways: driving up costs, enhancing teaching and learning, and intensifying competition among educational institutions by bringing new competitors into the marketplace. New technologies are a source of both new nightmares and new dreams for American higher education. In this context, I see two strategic roles that we can play.

The first role is to help frame the issues, persistently placing the national discussions about technology in the context of student learning and ways to organize academic work to achieve this learning cost-effectively. Many constituencies bring self-interested agendas to discussions about technology: administrators worry about competitors, faculty worry about jobs, vendors want to sell particular hardware and software, and so on. The Trusts can serve the larger good by mounting initiatives that produce thoughtful analysis and discussion from a public-interest perspective. One model comes from the early years of the Pew Roundtable on Higher Education, which sponsored policy papers that framed a national conversation about educational restructuring.

In addition, there may be some focused investments we could make to evaluate particular developments or strengthen the general capacities for evaluation and quality assurance of technology-based initiatives. For example, hundreds of new courses are coming on-line, without peer review or other mechanisms in place to help consumers judge their quality. Many institutions are going into distance learning, outstripping the capacities of state agencies, accrediting agencies, and others to monitor their quality. The wild west of technology-based learning needs some sheriffs, and I believe the Trusts can play a role in putting them in place.

A second strategic role for the Trusts is to foster some good efforts to use technology to both enhance learning and reduce costs. We need not, and should not, use our scarce resources simply to prompt more experimentation designed only to enhance learning. The introduction of computers and Internet access to campuses is already prompting a renaissance of faculty interest in issues of teaching and learning. Nor, but in exceptional circumstances, should we underwrite the development costs of new software. The marketplace can take care of that. What we can and should do is encourage colleges and universities to redesign their instructional approaches to achieve cost savings as well as quality enhancements, so we can point to several dozen schools like Renessalear Polytechnic Institute that have broken out of t

In many institutions, students are highly concentrated in a relatively limited number of introductory courses. For example, at the Maricopa Community College District in Phoenix, which enrolls approximately 90,000 students, 44 percent of these students are concentrated in multiple sections of just 25 courses. Put another way, just 1 percent of Maricopa's courses generates nearly half of its total enrollment. These are also the courses where large numbers of minority students tend to be concentrated. Putting even one of these high-enrollment courses, such as English or basic mathematics, on a more cost-effective basis could, therefore, yield significant gains in quality, productivity and equity. If a consortium of similar institutions decided to develop the right software, retrain their faculty for new instructional roles and re-engineer the way these courses are taught, the gains could be even more substantial. I propose to explore this, especially with open-admissions institutions.

Objective 4: Strengthening Incentives for Quality Improvement

Colleges and universities operate within a field of pressures and forces that provide incentives

for recruiting students with high test scores, building attractive facilities and hiring faculty with national reputations. These pressures do not provide consistent incentives for quality improvement. The question is: Can anything be done?

One reason for optimism is that there are college and university leaders—primarily representing institutions with aspirations and accomplishments that are not recognized by the traditional definitions and criteria of excellence—who are exercised about these issues and willing to work to improve things. The presidents of urban and regional universities serving large populations of adult commuting students, for example, have long suffered under accountability frameworks that are based on such measures as SAT scores and graduation rates. Leaders such as these are ready to participate in endeavors that would produce measures more in keeping with their unique missions.

A second reason for cautious optimism is that most of the external entities that need to be involved are well aware of the issues and readily acknowledge the need for reform. The editors at *U.S. News and World Report,* the state officials responsible for selecting indicators for performance funding, the staffs of accrediting agencies—all these folks are aware of the limitations of the present criteria and processes they use. Most are willing, and some are eager, to take part in initiatives to improve the quality incentives in higher education.

Given this readiness, I propose to encourage lead institutions to take part in pilot projects that aim to identify the characteristics of excellence appropriate to their kinds of institutions and collect and share evidence of their own performance with respect to these characteristics. Efforts to develop new definitions and performance measures could be used voluntarily by institutions to improve their own performance. Or they could be built into the processes of accountability used by external agencies. Ultimately, to improve the incentives for quality, we will need to improve the criteria and processes that are built into the systems of quality assurance enforced by external agencies. But influencing the institutional-level process is a critical step in getting from here to there, for if colleges and universities do not believe the information has value, they will be unwilling to collect and report it.

I further propose to encourage a few, carefully developed projects that are designed to improve the ways that relevant external agencies go about the business of providing incentives for quality. One possible line of work might focus on improving the published college ratings. A second possible line of work might focus on performance funding and other means by which state governments provide incentives for quality improvement. A third might explore alternative methods of institutional accreditation in which institutions develop institutional portfolios instead of engaging in traditional self-studies and in which external reviews audit the quality of these portfolios rather than conduct traditional external visits. To mount an effort that will make a difference in any of these areas will be a complex undertaking; however, if successful, the Trusts could make a real difference.

To generate leadership and creative energy for approaching quality assurance in new ways, I am also intrigued with the possibilities of what we can learn from other countries. Over the last decade, countries like England, The Netherlands and Australia have developed approaches to academic quality assurance that American educators would do well to consider. Accordingly, I would like to create a mechanism whereby key leaders in American higher education could learn from their colleagues abroad.

GOAL II:

The Community-Minded Campus: Working with Schools toward High Standards

As a second major goal, I propose that we undertake two lines of work designed to encourage colleges and universities to connect more fully with America's vital needs. As our first and major concern, I propose that we bring more depth and strategic focus to the engagements between higher education and the schools. I also propose that we invest selectively in efforts to shape policies that reinforce our larger agenda of connecting colleges and universities to America's vital needs.

Objective 1: Reinforcing School Reform

Colleges and universities exert an enormous influence on schools, not only as resources to the K-12 sector but as models that signal the way the game should be played. To engage the task of school reform in meaningful ways, college and university leaders must see themselves as leaders of the entire educational enterprise.

A century ago, this was the case. In the early 1900s, a group of university presidents literally created the basic rules by which schools now operate. Concerned about how to evaluate the applications for admission of students from high schools they did not know, they created the regional accrediting agencies, which, in turn, specified the subjects high school students should be required to study and the course/credit-hour formats for this study. Then, unwilling to rely solely on the strategy of requiring courses, they created the College Entrance Examination Board to develop national examinations for college entrance. Now we should call on our higher education leaders to take on the challenge of setting a new agenda for a new century.

The first area that is ripe for our attention is that of college admissions, especially the task of setting and communicating standards for admission that move beyond course requirements. The strategy of requiring specific courses for college admission had an enormous impact on the schools. What goes on inside these courses still varies enormously, however, and course-taking requirements still keep students locked into the seat time-based system of accumulating credit hours. Several states, most notably Oregon, Wisconsin and Maryland, are now piloting new policies in which student progress is measured in terms of demonstrated mastery of defined levels of knowledge and abilities. Oregon's 1991 school reform legislation, for example, requires all Oregon secondary schools to provide students with performance-based certificates of initial mastery and certificates of advanced mastery. The Oregon State System of Higher Education is now trying to align its admissions procedures with this performance-based system. This effort illustrates the kind of initiative that the Trusts can support.

In doing so, we have a particularly important role to play in championing the kinds of standards and assessment methods that measure deep understanding rather than the simple recall of knowledge. Restructured schools that use engaged pedagogies to teach for understanding are increasingly turning to portfolios and other creative assessment methods to measure student progress. College admissions officers, accustomed to receiving straightforward SAT and American College Test scores do not know what to do with these new kinds of evidence. Thus, one of our priorities should be to develop a new currency for representing student achievement.

Shifting from course/credit-hour standards to performance standards, in turn, opens up a wider strategy we can pursue—breaking the lockstep in the transition to college. For years, the College

Board's Advanced Placement program has allowed high school students to get a jump start on college by enabling them to get college credit for taking advanced-level courses during high school. And, recently, schools and colleges have collaborated in developing other arrangements that make it easier for students to make the transition to college. The middle college high school at LaGuardia Community College, for example, accelerates the achievement of at-risk high school students by putting them in a powerful teaching environment on its own campus. Project Advance, developed by the faculty at Syracuse University, enables students in high school to participate in college-level courses taught by high school teachers with special training from the Syracuse faculty.

To enable more effective student learning opportunities, and to reduce costs, the Trusts should encourage a new round of bold innovation in this arena. We do not have the resources to fund much actual experimentation, but we can help map the terrain and draw attention to the opportunities and benefits, which are substantial. To take a simple example: the California Higher Education Policy Center recently estimated that if 70 percent of the entering freshman at the University of California began college with at least one semester's worth of college credit, the university would save $47 million that could be invested elsewhere.

A second major arena in which colleges and universities have enormous influence on schools is the "teacher connection"—both the task of educating for the profession of teaching, and the task of working with the ongoing professional development of teachers. The first point to be made here is that nearly everything we do under the aegis of our first goal will also improve the preparation of teachers. Students preparing to be teachers acquire their ideas about how to teach not only from what professors in departments and schools of education say they should do. They also acquire their ideas about how to teach from an "apprenticeship of observation," that is, by how they were taught by faculty in the arts and sciences. Here, again, we encounter the "modeling" effect of higher education. Improving teacher education and improving the quality of undergraduate education are one and the same thing.

Beyond this spillover effect from our efforts under Goal I, the Trusts, I believe, have an important role to play in advancing teacher professionalism. But because this agenda is itself

complex, and so closely tied to our work in K-12, I will postpone discussion of this agenda until I present our "mini-white paper" on our continuing work in K-12.

Objective 2: Reviving Connections through Policy Studies

In discussing "the challenge of connections," I took note of trends that are making our work with schools more difficult. Growing social inequalities are undermining America's historic commitment to equalize opportunity. Differential access to the new technologies threatens to widen the gaps between haves and have nots still further. At the level of campus policy, the way that missions are formulated into teaching, research and service trivializes the role service should play in guiding and inspiring the kind of teaching and research that needs to be done.

The Trusts have developed a reputation for bringing thoughtful and factual analysis to bear on many areas of social policy. The issues that I identified in discussing "the challenge of connections" call for just such an approach. I do not propose here to lay out a proactive program of grantmaking in this area, but rather to undertake a few major initiatives and then to stay alert to investment opportunities as they arise. Three examples may illustrate what I have in mind.

- Public financing of higher education—at both the state and federal levels—has drifted away from the principle of helping first those who need help the most. President Clinton's new proposal to add massive new resources through the tax system will exacerbate this trend. The Trusts can underwrite studies of who benefits and who pays for higher education, and confront policy makers and the broader public with the need to make intentional choices about these fundamental issues.
- In the current debate about affirmative action, proponents of affirmative action claim that there are important educational benefits to attending a college with diverse student bodies--but cite little evidence that would back this claim. Opponents press their case--without reference to evidence about how the abolition of affirmative action will impact minority enrollments in selective institutions. As it has in other controversial areas of social policy, the Trusts can underwrite investigations that will enlighten these and other issues that are critical to thoughtful public judgment.
- Student aid is awarded to students largely for two reasons: economic need and academic merit. But there is a third rationale that also merits attention: service to the larger society.

Given the Trusts' overall interest in promoting civic engagement, and the Education program's interest in promoting modes of teaching and learning that emphasize engagement and the development of civic responsibility, we should look for opportunities to underwrite studies and public forums that explore the idea of aiding students for their service to the larger community.

GOAL III: Scholar-Professors For The 21st Century

In the final analysis, the faculty will determine whether any of the agendas outlined in this paper will be accomplished. If colleges and universities are to control costs and increase productivity, faculty members must work in more flexible ways. If the quality of undergraduate education is to be improved, faculty must allocate more time to undergraduate education and adopt new instructional roles. And if colleges and universities are to respond more effectively to the needs of the larger community, the faculty must engage in new kinds of public scholarship and outreach activities. The faculty are key to everything.

Popular books such as *Profscam* blame the faculty for neglecting teaching and new forms of public service. But a more thoughtful way to state the problem is to recognize that faculty members themselves are caught up in a system of professional ideals, rewards and incentives that no longer serve their needs. As we have seen, in the l960s the ideal of professional life and academic excellence embodied in the research university came to be regarded as the only mode of scholarly life that deserved legitimacy and prestige. Times have now changed. Our challenge is to create new expectations—to open up for faculty a larger, more generous and multidimensional view of what faculty life can be. In doing so, we should never denigrate the vital importance of basic research. Yet basic research is only one of many forms of valuable professional accomplishment.

Our strategies for changing the professional culture must also recognize that faculty members have dual loyalties and lead dual careers. During their graduate training, faculty members come to see themselves as mathematicians, chemists, historians and experts in other particular fields. Earning a Ph.D. is a rite of passage into membership in a particular community of scholars. Membership in this community is independent of the university. A chemist is a chemist whether he or she works at Dupont, the National Institutes of Health or the University of Pennsylvania. If

a scholar accepts an appointment at a college or university, he or she then joins a second community, the community of professors who teach at colleges and universities. A professor is a professor only when employed by a college or university.

If we are to legitimate a larger ideal of faculty life, these overlapping communities of scholars and professors must participate in this undertaking. Mathematicians, chemists, historians and the rest must rethink the values they attach to various forms of scholarly work. And the academic profession, working with the university administrations that employ faculty, must redefine what academic careers are possible within the university, what kinds of professional accomplishments are valued, and how these are judged and rewarded.

How might the Trusts participate in this rather daunting undertaking? We can help generate and disseminate new visions of what scholars and professors can be and do. We can work with universities and relevant scholarly and professional organizations to enact these visions into practice at two different points in the professional career: during the making of scholars and professors in graduate school, and during the critical points of evaluation and judgment all along the scholarly/professional career. Finally, we can encourage faculty to consider teaching as a form of scholarly work, worthy of inquiry and peer review.

The path of reform must be illuminated by new visions of both the scholarly and professional careers. But these visions need not be created from scratch. The task here is, in part, to reclaim legacies that have been lost. From the colonial colleges, we inherited a tradition of the faculty member as a scholar-teacher who considers teaching less a job than a calling. From the land grant universities and the first professional schools we inherited a tradition of the faculty member as a specialist with hands-on expertise in an applied field, closely connected to the world of practice, perhaps even working in both worlds at the same time. The problem is not that we have lacked alternative models. The problem is that the German university ideal of the faculty as researcher—fueled by the massive federal investment in research after WWII—came to be viewed in many quarters as the only legitimate ideal worth pursuing.

The task of re-envisioning the scholarly dimension of the faculty career has already begun. In 1992, the Carnegie Foundation for the Advancement of Teaching released a seminal report, aptly

titled "Scholarship Reconsidered." This report recast the tiresome debate over teaching versus research—the competing obligations of faculty members in their role as professors—by arguing that all faculty members should see themselves as scholars, and that all scholars have a fourfold responsibility for advancing knowledge through research; integrating and synthesizing knowledge through, for example, writing textbooks or writing for larger publics; applying knowledge to improve practice through consulting, for example; and representing their knowledge through teaching. "Scholarship Reconsidered" quickly became the best-selling special report ever issued by the Carnegie Foundation. It struck a chord with faculty across the nation and has stirred a national movement to rewrite guidelines for promotion and tenure to reflect this broadened vision of scholarly work.

The task of re-envisioning the professorial dimension of the faculty career is not as far along. For a decade, universities have been trying to do a better job of preparing teaching assistants (TAs) for their roles in undergraduate classrooms. A few universities have developed sophisticated programs of TA training based on developmental conceptions of learning to teach. In a few universities, courses have sprung up that are aimed at introducing graduate students to their roles and responsibilities as members of the professorate. With support from the Trusts, one major project is under way in which graduate students are serving as apprentice teachers in institutions that are not research universities. But there is little deeper thinking going on about what the professorate of the 21st century should look like or what the organizational underpinnings of a faculty career in which teaching is taken seriously might be. For example, in major universities, decisions about moving up the traditional ladders of academic rank, from assistant to associate to full professor, turn largely on criteria of scholarly achievement. I know of only a few cases where progress in rank is tied to a developmental conception of faculty performance as a teacher and responsible member of the academic profession.

The Trusts can seed and stimulate more and deeper thinking about these issues and about what activities they might generate in particular settings. We can also give new voice to organizations and constituencies, such as graduate students and new professors, that are interested in promoting the educational responsibilities of the academic profession, as against focusing primarily on employment security issues.

Objective 1: The New American Scholar: Redefining the Ph.D.

To reshape the academic profession, it makes obvious sense to begin at the beginning—with the making of scholar-professors. But the history of efforts to reform graduate education is not encouraging. I don't believe that add-on activities, such as training graduate students for roles as teachers, will really take hold unless they are part of a more inclusive vision of what the Ph.D. is intended to certify. The heart of the matter, as I see it, is to redefine the Ph.D. and the performances required to receive it, so that the degree itself encompasses a vision of scholarly work close to that put forward in "Scholarship Reconsidered."

This is a battle that began a century ago. At the birth of the modern university, Johns Hopkins tried to establish the master's degree as the degree of choice for college teachers, reserving the Ph.D. for those who would make first-rate contributions to original research. But by this time, the master's degree was becoming standardized as the badge of the secondary school teacher, and those planning to become college teachers wanted to differentiate themselves from this group. Hopkins lost, and the Ph.D. became the standard for getting the "better" jobs in college teaching. But the dissertation, the critical final performance required for earning of the Ph.D., is only indirectly and imperfectly related to the task of teaching. (There is a growing body of feeling that it is unrelated to the task of contemporary research as well).

I believe we should seek opportunities to launch re-envisionings of the meaning of the Ph.D. Because changes in practice often precede and pave the way for changes in theory, we should also seek opportunities to support experiments that build assessments of broader aspects of scholarly performance into Ph.D. programs. Some graduate schools, for example, are now helping their graduate students develop teaching portfolios that document and represent their capabilities as teachers. These might be integrated into a larger conception of a doctoral portfolio that would, along with the dissertation and other performances, represent a conception of the new Ph.D.

The second strategy we should pursue is to organize the market to demand a different kind of product from the graduate schools. In the context of a Trusts-funded project sponsored by the American Association for Higher Education, pilot academic departments at various universities are requiring candidates for new appointments to engage in a "pedagogical colloquium"--

conceived as the missing counterpart to the job talk that candidates typically give about their research interests when interviewing for an academic appointment. Another example: the Commonwealth Partnership, a consortium of 12 selective Pennsylvania liberal arts colleges, has recently issued "An Open Letter to New Ph.D.'s" about the kinds of competencies they are looking for. Both of these initiatives are deceptively simple undertakings, yet they are beginning to have far-reaching effects. They suggest that this is a ripe moment to initiate a larger program of research and advocacy aimed at stimulating demand for a new kind of graduate education. Such a program would gather data about hiring practices, graduate student placement and the experience of new scholar-professors during their early teaching years. Strategic use of the media to call attention to the idea of the new Ph.D., and the encouragement and dissemination of effective practices like the pedagogical colloquium would also be important tasks of such a program.

Objective 2: Professors to Match Our Missions

Once scholars become faculty members of a particular college or university, their lives and priorities are shaped by the policies and cultures of their employing institutions. Here, the opportunities for investing in constructive change are greater than they are in graduate education because colleges and universities themselves are under growing external pressures to do things differently.

Since the early l990s, two waves of external pressure have raised two different sets of issues and opportunities for change. The first wave, arising from dissatisfaction over faculty neglect of undergraduates at large research universities, prompted a re-examination of the priorities of the professorate. This wave has created opportunities for investing in efforts to change the criteria for faculty advancement and tenure, especially the balance between teaching and research. At most universities, efforts to respond to these pressures for rebalancing attention to teaching and research have been under way for at least five to eight years.

The second, more recent wave of pressure, arising from concerns about rising costs and the effective allocation of resources, has focused on the kinds of appointments faculty hold and the kinds of commitments that faculties and universities should make to each other. The first wave of pressures raised issues about the criteria for awarding tenure, whereas the second wave has

raised more basic questions about the concept of tenure itself. As we saw in Chapter III, boards in more than a dozen states recently have wrestled with issues of tenure. In Arizona, California and Florida, new campuses are being established on the condition that tenure will not be an option. Twenty-eight states are now either discussing or implementing new procedures for post-tenure review. More and more institutions are moving toward long-term, nontenure-track appointments and more flexible conceptions of probationary status for tenure.

These two waves create somewhat different opportunities for constructive grantmaking. The current contentious and polarizing debate about tenure cries out for the kinds of interventions that a foundation is classically able to offer—analysis and convenings that set the record straight, efforts to frame the issues in useful ways, and efforts to help constituencies with diverse points of view work through problems and adapt to new realities. As in the case of health care, while spirited arguments fly back and forth about what should be done, the realities of faculty employment are changing rapidly. The Trusts can bring these realities into the debate.

As to point of view, I believe we will be on firm ground if we stress the need for options that achieve better matches between faculty with increasingly diverse lives and interests and institutions with increasingly diverse missions. The idea that the only legitimate faculty career is one that progresses from a research doctorate to a position on a three-rung, tenure-track career path no longer fits the needs of either individual faculty, colleges and universities, or the larger society. We need to blaze new trails.

The useful work we can do in restructuring faculty careers, however, is only part of our larger task. More legitimate career tracks, more flexible options and clearer policies on matters such as post-tenure review are all matters that affect the outer shell of faculty life. They are not the work itself. To comply with new state mandates for post-tenure review, hundreds of faculty over the next five years will be reviewing each other's work. Will these be pro forma, ritualistic exercises, undertaken in the spirit of compliance? Or will these be occasions for genuine interchange over matters of substance, informed by the ideas that teaching is a form of scholarly work and that the "complete" scholar should make contributions to all dimensions of scholarly work?

To address this larger, all-important task, we must look for opportunities to connect the generative work that we will be encouraging on matters such as the scholarship of teaching to the activities—such as mandated post-tenure review—that are being pressed on institutions from the outside. As with the external pressures for assessing student learning that arose a decade ago, the new external pressures to assess faculty performance are a useful stick. But to prompt real improvement, these pressures must be converted into occasions for faculty to realize their own collective aspirations.

Objective 3: Treating Teaching as Scholarly Work

As I argued in Chapter V, until teaching is viewed as a scholarly activity and peer reviewed, the academic profession itself has not really assumed responsibility for the quality of its own work. If we can dignify teaching as scholarly work and make teaching the community property of the various scholarly societies, we will unleash a dynamic that will make teaching a subject of continuous improvement.

Creating a national marketplace for excellence in teaching similar to the national marketplace that already exists for faculty members who are excellent in research is not a vision that can be fully realized. Reputations for excellence in teaching will never have the cachet and currency of research. Nonetheless, this vision focuses attention on the right task: making excellence in teaching the property of the entire scholarly community. To get there from here, we need three things.

First, the scholarly work of teaching must be put in a form that can be shared with others. We need to encourage faculty to view the teaching of a course as a scholarly project, a project that begins with certain intentions, unfolds in certain ways and results in certain kinds of student learning. At present, faculty members are not in the habit of documenting and displaying their "teaching experiments" in the same way they write up and share their research experiments with colleagues. With support from the Trusts, we can enable faculty to invent ways of doing this.

Second, this scholarly work of teaching needs to be subjected to peer judgment. There are hundreds of faculty members with national reputations for research whose work has never been read by anyone outside their fields. Their work has been judged as significant by their

disciplinary colleagues, and their reputations have spread as a result. Teaching can be similarly judged. Nor is there any reason why the peers rendering such judgments need be from the same campus as the teacher being judged. With proper care and documentation, the portfolio of a chemistry teacher at Berkeley, for example, could be reviewed by a chemistry professor at Cornell.

Third, new forms of public recognition of teaching will need to be established. Scholars who do excellent research have dozens of ways to achieve public recognition for their work. They get grants, awards, invitations to become members of prestigious societies and so on, and all of these indicators of status show up on their resumes. Why not the same for teaching?

Actually, that will be the easy part. Once teaching performance becomes visible, portable and subject to peer judgment, new vehicles for recognizing good performance will naturally follow. Models are everywhere. The National Board for Professional Teaching Standards offers an example of an organization that confers professional recognition based on individual certification. And there are plenty of examples of honorary societies, such as Phi Beta Kappa, in which local chapters induct outstanding individuals into membership under established guidelines. Already, at several major universities, faculty members have created organizations called Teaching Academies, which induct faculty who are outstanding teachers into membership and capitalize on their talents to improve teaching throughout the university.

GRANTMAKING:

Getting from Here to There

These are ambitious goals and objectives. To design projects and programs that will realize them raises future questions. How will we make known our interest to the field? Will we sponsor open competitions or solicit proposals principally by invitation? Once grants are made, what will be our relationship to our grantees? Besides writing checks, what role should the Trusts' Education program play in the change process—for example, in convening grantees and evaluating and disseminating information about our projects?

There is generic, cross-program wisdom within the Trusts on these issues. But each field of endeavor in which we work—the environment, health care and so on—is also a unique and

special terrain with particular features to take into account. What is most remarkable about American higher education, especially when seen through the eyes of the rest of the world, is how autonomous our institutions are from governmental control, how diverse they are, how decentralized power and authority is within institutions, and how intense the competition is among our institutions. All these characteristics have important implications for the change strategies we can employ.

First, because power and authority are so broadly dispersed, both across and within institutions, there are many sources of initiative for new ideas and experimentation. For any given educational problem, you can be sure that somewhere out there, creative people are working on solving it. And thanks to the massive federal funding for research since WWII, a culture of entrepreneurship has been created within higher education for writing proposals and seeking grants to solve problems, including problems of improving teaching and learning. The Department of Education's Fund for the Improvement of Postsecondary Education, for example, receives more than 2,000 proposals each year but annually awards only about 125 grants. Despite these odds, colleges and universities send in proposals year after year.

Accordingly, I believe that we would be well advised to consider conducting open competitions as a technique for achieving some of our goals and objectives. Open competitions are likely to elicit a range of creative proposals. In addition, the activity of openly soliciting proposals in response to targeted guidelines can have impact far beyond the actual selection of grantees because the guidelines themselves become a catalyst for stimulating activity and directing attention to an area of interest to the Trusts.

But the dispersion of power and authority has another implication as well: the same conditions that stimulate experimentation also inhibit the diffusion and adoption of ideas. In an enterprise in which no one is in charge, no one can tell others what to do. Thus, creative ideas and solutions developed in one setting do not necessarily find "takers" in other settings. The classic conundrum of grantmaking—how to spread successful projects to other settings—is a major problem within the field of higher education.

We are responding to this situation, in part, by selecting goals and objectives that themselves aim to change the incentives—that is, create the demand for improvement. The degree of attention we would give to changing the ways in which the market operates; governments allocate funds; accrediting agencies work; and, especially, the way faculty conceives of teaching are all in one sense "scale-up" strategies—strategies designed to foster a culture of continuous improvement.

But, in addition, I believe we need to pay special attention to the creation of infrastructures (conferencing mechanisms, publications, clearinghouses, etc.) that stimulate and facilitate cross-institutional interchange. Indeed, in most cases it would be foolish to finance pilot projects unless there were infrastructures in place to ensure that their work would not proceed in isolation. I do not only mean infrastructures for dissemination in the classic linear sense of doing an experiment and then communicating the results to others. Rather, I mean to include infrastructures that facilitate the doing of projects in a collaborative and public fashion, so that a number of institutions learn together as they go along.

This point leads to a third. As I have noted earlier, colleges and universities are intensely competitive. Competition creates incentives for institutions to be different and distinctive. But it also breeds a notable reluctance to get too far ahead of the pack. Colleges and universities are forever looking over their shoulders at what peer institutions and competitors are doing. To encourage colleges and universities to take a risky path, it is usually necessary to arrange for them to be in good company. In the past, the Education program has tended to favor grants in which a cluster of lead institutions worked in parallel toward a common goal. I propose to continue this approach.

Autonomy and decentralization also mean that the ability of external constituencies to engineer change from outside is limited. In the K-12 sector, parents, school boards, state agency officials and others are involved in the affairs of schools in a way that is unthinkable in higher education. In higher education, administrators—and especially the faculty members—are much more in charge.

In discussing our third goal earlier, I noted that faculty members owe allegiance not only to their colleges and universities, but to their scholarly communities as well. Faculty members' loyalties

to their specialized guilds varies considerably across the sectors. Within community colleges, only a small portion of the faculty, for example, participate in the annual meetings of the scholarly and professional societies. But within research universities, the ties to the relevant scholarly community are often stronger than the ties to the university.

This means that our strategies for change must include the scholarly/professional communities as well as the colleges and universities. In the health field, the medical profession grew up outside the institutions we call hospitals, and thus we appreciate the difference between changing hospitals and changing the medical profession. But in higher education, the academic profession grew up inside the university. We think too quickly sometimes about changing universities, forgetting that the faculty members are not only employees of the university, but are mathematicians, geologists and economists as well. We need to pursue both institution- and profession-based strategies of change. In practical terms, this points to the importance of working at the departmental level. The twin paths of the faculty member as scholar and professor come together at the crossroads of the academic department. Thus, in a number of our projects, particular academic departments will be engaged in leading the way.

Finally, the relative autonomy and power of the faculty mean that in addition to paying attention to changing incentives from the outside, we must also appeal to the intrinsic desires of the faculty to do good work. We typically think and talk about change in managerial language, as if changing organizational structures and incentives is all there is to it. But change also comes about through cultural movements powered by new feelings and fresh ideas. When courageous individuals take stands and find that others believe as they do, new movements are born. The growing number of faculty who are becoming interested in issues of teaching and student learning as scholarly work, for example, represents a budding movement in higher education.

These, then, are the characteristics of higher education that we will have in mind as we ponder how to translate our three main goals into precise grantmaking strategies. Over the next six months, I will be working with Education program staff on this task of translation. Let me say a word about how this process will unfold.

I believe that this white paper can itself become a useful vehicle for testing the merits of the proposed agenda and for strategizing about how to enact it into practice. So I propose to conduct several seminars around the paper. Several colleagues—prominent leaders in higher education—have also volunteered to host discussions on our behalf.

I propose to tackle each of the objectives of Goal I roughly in the order I have presented them. I am already working on the merits and feasibility of establishing a summer institute around the agenda of taking responsibility for student learning. This fall, I propose to put together a working group that can explore how best to promote pedagogies of engaged learning. If the idea of designing an open grant competition holds up, then I will ask this working group to help develop guidelines for this competition. Also this fall, I propose to convene a working group around the issues of learning and technology that I have identified.

I propose to tackle the objective of strengthening incentives in the larger system with a different approach. Here the task is to design individual projects that promise to make a significant difference. I assume that the design process itself for a single project might take six to nine months. I have already taken steps to enlist the services of an outside consultant to work with staff on this task.

As to Goal II, the horses are already off and running. At its June meeting, the board approved a grant to the University of Maryland, part of which will underwrite planning by system chancellors and their K-12 counterparts about how to align university admissions policies with the school reform agenda. This project, which builds on a number of the Trusts' prior initiatives, augmented by several other planning contracts we intend to initiate, is already laying the groundwork for a next-generation set of projects.

As to Goal III, scholar-professors for the 21st century, I see our three lines of work unfolding on different schedules. The first objective, redefining the Ph.D., is by far the most difficult to achieve. The faculty members who are key to change are as entrenched as a constituency can be, and the character of the Ph.D. is not even yet an "issue." On the other hand, I am heartened by the fact that Lee Shulman, the new president of the Carnegie Foundation for the Advancement of Teaching, intends to take this issue on as one of his first major initiatives. The Carnegie

Foundation, working with the National Academy of Sciences and other groups, may create openings for us to play a role. In short, how we proceed will depend on whether we can form a partnership with important allies.

The objective of encouraging faculty career pathways and reward systems that match the diverse missions of our institutions, and the objective of treating teaching as scholarly work are a different matter. Issues such as tenure and post-tenure review, and elevation of the status of teaching are front-burner concerns at many institutions. I'm personally familiar with much of the thinking, experimentation and prototype development that has been going on in both areas and see significant opportunities for scaling up this work to a new level of importance. Accordingly, I propose to bring major projects in these areas to the attention of the board quite soon.

Appendix I:
Summary of Goals and Objectives in 1997 White Paper

Goal I:	**New Aspirations for Undergraduate Education**
Objective 1:	To extend the teaching mission of colleges and universities from providing instruction to taking responsibility for producing student learning; and to help institutions to carry out this vision, especially in the area of awarding degrees for performance rather than the accumulation of credit hours.
Objective 2:	To enhance effectiveness by encouraging the thoughtful adoption of pedagogies of

	engagement such as problem-based and service learning.
Objective 3:	To encourage uses of technology that both enhance learning and reduce instructional costs.
Objective 4:	To strengthen the incentives for continuous quality improvement by making contributions to student learning a more central factor in the marketplace for students and faculty, the policies of government and the mechanisms for self-regulation.
Goal II:	**The Community-Minded Campus: Working with Schools toward High Standards**
Objective 1:	To deepen the engagement of colleges and universities in the reform of America's schools.
Objective 2:	To encourage policies that renew the connections between higher education and America's vital needs.
Goal III:	**Scholar-Professors for the 21st Century**
Objective 1:	To prepare faculty with a broader view of their roles and responsibilities as scholars and professors by redefining the criteria and assessments required

	for a Ph.D. degree.
Objective 2:	To encourage and design career paths, employment arrangements and criteria for promotion and advancement for faculty that will match the professional lives of faculty to the diverse missions of colleges and universities in the 21st century.
Objective 3:	To encourage the faculty to regard teaching as a form of scholarly work, worthy of serious inquiry and peer review, and thereby foster a national marketplace for excellence in teaching.

Appendix II: Notes on Sources

Chapter I—A Three-Minute History of Higher Education

The colonial college story comes from Frederick Rudolph, *The American College and University,* New York: Vintage Books, 1962. The story of the university movement draws on John S. Brubacher and Willis Rudy, *Higher Education in Transition,* New York: Harper and Row, l958; and Laurence R. Veysey, *The Emergence of the American University,* Chicago: University of Chicago Press, l965. The direct Veysey quote is from pp. 339-340. The direct Peter Drucker quote is from the March 10, l997, issue of *Forbes.*

Chapter II—The Fall from the Pedestal

The national enrollment projections are from the U.S. Department of Education, "A Back to School Special Report: The Baby Boom Echo," August 1996. The California projections are from the California Higher Education Policy Center, *Tidal Wave II,* Technical Report #95-6, San Jose, California, September l995. Daniel Yankelovich cited the statistics on public attitudes on college costs in an interview in the *AAHE Bulletin,* June l993. The data on family income, tuition increases and financial aid spending, and on comparative earnings of high school and college graduates are from Lawrence E. Gladieux, *College Opportunities and the Poor,* The Center for the Study of Opportunity in Higher Education and The College Board, 1996. The state spending data are from S. Gold and S. Ritchie, *State Spending Patterns in the l990s,* Albany: Center for the Study of the States, 1995.

Chapter III—The Challenge of Costs

The Elfin editorial is in the September 19, l996, issue of *U.S. News and World Report.* The *Time* story is in the March 1997 issue. Terry Hartle's response on behalf of the American Council on Education (ACE) and the focus group data on public beliefs about college costs is from the Association of Governing Board publication *Trusteeship,* July/August l996. The various college and university responses cited are from an American Council on Education publication, *ACE Issue Briefs,* May l996.

Alan Guskin's challenge appears as a two-part story in the July/August and September/October l994, issues of *Change.* Bruce Johnstone's thinking appears in a number of informal papers issued under the auspices of the "The Learning Productivity Network," Graduate School of Education, University of Buffalo. The evolution of the course into a precise unit of instruction and the Harvard catalogue citation comes from Martin Haberman, "The Origin of the University Course," *Journal of Teacher Education,* July/August l984.

For an astute analysis of the mega-universities around the world, see John S. Daniel, *Mega-Universities and Knowledge Media,* London: Kogan Page Limited, l996. The potential of various technologies to enhance learning is explored in Diana Laurillard, *Rethinking University Teaching: A Framework for the Effective Use of Educational Technology,* London: Routledge, 1993. The cost issues are explored in A. W. Bates, *Technology, Open Learning and Distance*

Education, London: Routledge, 1995; and Carol Twigg, *Academic Productivity: The Case for Instructional Software,* Washington, D.C.: Educom, l996.

Chapter IV—The Challenge of Quality

The ACE reports on public attitudes comes from a trilogy of reports prepared by James Harvey and Associates and published by ACE in 1995. The reference to the causes of attrition comes from Vincent Tinto, *Leaving College: Rethinking the Causes and Cures of Student Attrition,* Chicago: University of Chicago Press, 1987. The data on remedial education are from U.S. Department of Education, National Center for Educational Statistics, *Remedial Education at Higher Education Institutions in Fall 1995.* The data on persistence are from "Towards Inequality," a paper prepared by Paul Barton scheduled for forthcoming publication by the Policy Information Center, Educational Testing Service, Princeton, New Jersey.

The summary statement about 20 years of research is from Ernest Pascarella and Patrick Terenzini, *How College Affects Students,* San Francisco: Jossey-Bass, 1991, p. 616. The quote from Howard Gardner is from his book entitled, *The Unschooled Mind,* cited in Grant Wiggins, "Assessing for Excellence," forthcoming from Jossey-Bass. The discussion of assessing for understanding draws heavily from chapter five of Wiggins's book.

In the section on the new literacies, the reference to the new basic skills is from Richard Murnane and Frank Levy, *Teaching the New Basic Skills,* New York: The Free Press, 1996. The Harvard Business School study was conducted by the External Comparisons Project Team and copyrighted in l993 by the Harvard Business School. The demographic projections that around 2020 minorities will become the majority of those under 18 are from Scott Miller, *An American Imperative,* New Haven: Yale University Press, 1995, p. 23.

Chapter V—The Challenge of Quality II: Inadequate Incentives

The architecture of this chapter and the analysis of a market driven by prestige draws heavily on Derek Bok's annual report to the Harvard Board of Overseers, "Quality of Teaching," reprinted in the *Harvard Gazette,* March l986. It is also informed by an article in the September/October l994 issue of *Change* by Gordon Winston titled, "Teaching's Decline." The data on the college

ratings is from Patricia McDonough et al., "College Ratings: Who Uses Them and with What Impact," a paper presented at the March l997 meeting of the American Educational Research Association.

My observations on the changing role of state governments draw heavily on the writings of Peter Ewell, especially "Achieving Academic High Performance: The Policy Dimension," National Center for Higher Education Management Systems, l996. My comments on accreditation were informed by a paper titled, "Reinventing Accreditation," presented by Ralph Wolff to the American Association of Higher Education's (AAHE's) l993 National Conference on Higher Education, March 15, l993. My comments on the separation of teaching from scholarship draw on the writings and many speeches of Lee Shulman, starting with "Knowledge and Teaching: Foundations of the New Reform," *Harvard Educational Review,* February l987.

Chapter VI—The Challenge of Connection

The *Washington Post* article cited on the two economies appears in the October 14, l996, edition. The Educational Testing Service study of inequality is from Barton, op. cit. The minority attainment data are from Miller, Scott, op. cit., chapter two. The Theodore Cross projection of loss of black attendance from law schools is from the spring 1994 issue of *Journal of Blacks in Higher Education.*

The views of state legislative chairs of education committees is cited in Sandra Rupert, *The Politics of Remedy: State Legislative Views on Higher Education,* National Education Association, January l966.

Chapter VII—A Higher Education Agenda for PCT

My comments on taking learning seriously were informed by Robert Barr and John Tagg, "From Teaching to Learning," Change, November/December l995.

My discussion of problem-based learning at McMaster University draws on Victor Neufeld and Howard Barrows, "The 'McMaster Philosophy': An Approach to Medical Education," *Journal of Medical Education,* November l974. The Abercrombie study of collaborative learning is

discussed in M. L. J. Abercrombie, *The Anatomy of Judgement: An Investigation into the Processes of Perception and Reasoning.* London: Hutchinson, 1960. The RAND study is described in an unpublished report entitled "How Undergraduates Are Affected by Service Participation," Higher Education Research Institute, UCLA, 1996.

My discussion of uses of technology that both enhance learning and reduce costs, and the concentration of student enrollments at Maricopa Community College draws on Carol Twigg, op. cit.

The leadership university presidents gave to schools at the turn of the century is described by Brubacher and Rudy, op. cit. Student aid for service is explored in Frank Newman, *Higher Education and the American Resurgence,* Princeton: Carnegie Foundation for the Advancement of Teaching, 1985.

My comments and proposals relating to reshaping the professorate draw heavily on unpublished work of Eugene R. Rice, currently director of AAHE's Forum on Faculty Roles and Rewards. A published version of Rice's formulation of scholarly work appears in Ernest Boyer, *Scholarship Reconsidered,* Princeton: Carnegie Foundation for the Advancement of Teaching, 1993.

My comments and proposals on teaching as a scholarly activity are based on the writings of Lee Shulman and Patricia Hutchings, published by AAHE under the aegis of the AAHE Teaching Initiative.