

NEW STUDENTS IN NEW BOTTLES

by

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Like most of my colleagues who frequent the lecture circuit, I have become adept over the years at taking the first minutes of a lecture to show the audience how what I planned to say anyway fits any title that has been assigned by the program committee. But today I have met my match. Perhaps the creator of the title "New students in New Bottles" knew how to get both the new students and the new bottles into the 21st Century without breaking either, but I confess to struggling with the image of students trapped in bottles much like the sailboats in the bottles that one sees on the mantles of sailing enthusiasts. I stand before those works of craftsmanship, never completely sure whether the relevant craft is glass blowing, model boat building, or simply the desire and the patience to attempt the seemingly impossible feat of building a ship within the inflexible confines of a bottle.

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For my purposes today, I would rather think of that bottle as a permeable membrane through which society and students intermingle. Perhaps the title of my remarks should be "The University as Permeable Membrane" since my message is going to be that the distinctive characteristic of the university in the 21st Century is that it will be increasingly difficult to tell where the university ends and the so-called real world begins. Universities are just one part of the learning society that lies ahead, and students will move freely in and out of the universities throughout their lives. Instead of spending four years of full-time study in the glass bottle of the university, students will spend 40 years of part-time study, moving in and out through the permeable membrane. Universities, for their part, will have to get used to thinking of students as a permanent student body. This will be a significant departure from the present image of the university as opening the bottle to admit a new class each year, shaking that class of students well, and pouring them forth into society four years later.

The trends toward lifelong learning and a learning society are already well under way, and they are changing dramatically the role of the university in society--at least in those domains of university function that involve teaching.

There are many ways to define the learning society, but for the purposes of this discussion, I shall define it loosely as a society in which most people are engaged in organized learning throughout their lives and many organizations and corporations, profit as well as non-profit, are engaged in organized

instruction. It is, in short, a society in which teaching and learning have escaped from the confines of designated institutions, times, and personnel to pervade the entire society.

Since I wish to think about education in this broad societal context, I shall not confine my discussion to the role of the university qua university, but to the total concept of postsecondary education and its changing role in society.

I shall divide my paper into two parts. First I should like to touch briefly on the egalitarian pressures for equal educational opportunities that led to the expansion of educational services to broader and more representative segments of the society. Then I shall set forth six propositions that illustrate the current pressures for change in the role of higher education in the society. In both cases, the pressures for change come largely from forces external to the university.

Egalitarian Pressures

Gradually, higher education in the United States has been shifting from a privilege to a right. Most students today are not especially grateful for the opportunity to attend college; they feel that it is their right and that sweeping away the barriers to college attendance is a responsibility of government. Thus, the first historical shift that I wish to illustrate is the shift in the stance of higher education from exclusiveness to inclusiveness.

Gradually at first, and then with increasing momentum, the barriers to college admission have been removed. In the early

days of private colleges, criteria for admission were social and financial. Those excluded were primarily those who lacked money for tuition and expenses. With the advent of public colleges, the meritocratic phase of higher education appeared, and education was offered to those who "merited" it by virtue of their performance in school. Those excluded were those who lacked the high school grades the test scores to suggest academic promise. Ultimately, it became clear that most barriers to higher education were highly interrelated, operating to exclude quite consistently certain groups of people. With that realization, the national picture changed abruptly, and one barrier after another was abolished in rapid succession. The call for equality of educational opportunity brought the establishment of low tuition, open-admission community colleges at the rate of one per week throughout the late 1960s. Then higher education began actively recruiting previously excluded poor people, ethnic minorities, and women. Now colleges are looking for ways to abolish all other exclusionary practices, including discrimination because of age, part-time student status, and geographical isolation.

Most people want to learn, and they want society to provide the opportunities for lifelong learning. In surveys conducted in the 1970s, 75 to 80 percent of the adults between the ages of 18 and 60 said that they were interested in learning more about some subject, and it was found that more than one third are actually engaged in some type of organized instruction each year (Cross, 1981). Although individual colleges may still exclude those

deemed unsuited to their particular educational creed, the national picture is one of almost frantic activity to embrace everyone in the new learning society. In a relatively short span of time, we have moved from a national policy of college for the few to college for the many, or from exclusion to inclusion in college admissions. Higher education in the United States today is largely non-selective; three fourths of all colleges admit more than 70 percent of all who apply (Keller, 1983, p. 17).

This notion of offering education to every one who wants it has a profound effect upon the design of higher education. Selecting those who are predicted to succeed in the type of college education that we happen to offer is a very different task from educating all who come. Under selective admissions, the emphasis is upon prediction. If a student fails, we look for more accurate measures of predicting success. The questions we ask are these: How can we enter measures of motivation into the prediction equations? Do admissions tests predict performance as well for minorities as for Caucasians? How can we recruit the kind of student who will succeed in college?

In the meritocratic era, we directed our research to improving the accuracy of prediction formulas about who would succeed in college. Today we are directing our attention to improving education for everyone. The big questions in egalitarian higher education are not how can we predict motivation, but how can we create it? Not how well tests predict grades, but how well they diagnose learning strengths and weaknesses. Not how to recruit those who will be successful, but

how to make successful those who come. The new philosophy of higher education affects open admissions colleges directly, of course, but the new national mission of equality of educational opportunity has considerable impact on all higher education as well as on our national conceptualization of educational systems.

The label that I want to apply to this concept is too simple to capture its impact on higher education but for the sake of brevity, I shall call it the trend toward student inclusiveness.

The move toward student inclusiveness was first fueled by the social justice concerns of equal opportunity. Today, however, it is driven more by the demographics of the birth rate and by the desire of colleges to maintain enrollments in the face of the decline in the number of traditionally aged students. In this decade, the number of young adults between the ages of 18 and 24 will decline by 16 percent. In contrast, the number of adults between the ages of 35 and 44 will become the fastest growing age cohort in the nation, increasing their numbers by 30 percent by the end of the decade. While this market for educational services is largely part-time, it is nevertheless an attractive solution for many colleges threatened with extinction if they can not fill the seats left vacant by declining numbers of 18 year olds. Other demographic trends are also reinforcing the earlier social concerns about making higher education more inclusive. The market for ethnic minorities, specifically blacks and Hispanics, will be increasing substantially, both because of the higher fertility rates of these minority populations and because more of these young people are completing high school and thus

becoming eligible for college.

The second trend I want to talk about in connection with the learning society I shall label campus-expansiveness. Geographically, as well as conceptually, colleges are reaching out to include a broader community. Early in the history of higher education, colleges were deliberately located in small towns away from the hustle of the city. Faculty lived around the campus and students lived on the campus, and college was a community unto itself--its geographical isolation a symbol of its removal from the worldly concerns of the masses.

Things are quite different today. Colleges pride themselves on being very much a part of the real world. College professors serve as mayors, and students run for city council; hotels abound with visitors from every corner of the earth, and airports bustle with professors off to consult with business and government about solutions to very practical problems. Not only have colleges moved from campus into town and more broadly into the world, but the new strategy is to take the colleges to the people either by locating them in population centers or by extending them into rural areas. This new geography of college location reflects the change from exclusiveness to inclusiveness, but it reflects something even more fundamental to the learning society. It recognizes that universities no longer serve as the repositories of all knowledge. Great cities are conceded to have some of the finest educational resources available anywhere. Metropolitan libraries, museums, symphonies, trade centers, business offices, and government agencies combine with rich cultural diversity to

provide learning experiences not available on many conventional college campuses.

Where off-campus learning facilities do not exist naturally, they are created through imaginative use of technology. Talk-back television permits isolated learners to join in class discussions conducted hundreds of miles away. Cable television is reaching into a majority of American television homes, and video disks and personal computers, are spreading information more rapidly than we can absorb it.

The trend is as clear as it is steady. The college campus has burst explosively from its boundaries, and decentralization of learning is a major trend of our times. The demographics of the birth rate combined with the explosion of knowledge in the information age are pressing even thoroughly traditional colleges into looking for new clienteles to serve and new locations of operation. Thus, one of the consequences of the decision to include rather than exclude people from postsecondary learning opportunities is the expanded campus that takes learning to the people. The two movements that I have described as people-inclusive and campus-expansive are fully underway, and they pave the way for the events to which I turn now.

Make this the title, all caps, centered
the Learning
The Changing Role of Higher Education in Society

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Most change in higher education comes from forces external to the institution -- factors such as the demographics of the birth rate, migration patterns, directives from the state board of education, sweeping court decisions, shifts in job markets, and

(Keller, 1983)

the like. ^ These external pressures for change are sufficient now to call for a new lens through which to view the role of higher education in society. That new lens might be likened to a wide-angle lens which includes a great variety of educational providers and an unprecedented diversity of learners of all ages.

Viewing trends that are already visible on the educational horizon, I arrive at six propositions that suggest changes in the 21st Century. ~~For the purposes of our discussion about "The University into the 21st Century," I would like to look at the education industry through the wide-angle lens of the learning society. To do that, let me set forth six propositions. The propositions are derived~~

~~from an analysis of current trends and happenings in the United States and then projected onto my crystal ball of the future.~~

Proposition One. Proposition One is that institutions of higher education no longer enjoy a monopoly on the provision of educational services. In yesteryear when college students were late adolescents whose primary occupation was going to school, if they were engaged in education at all, it was typically as a full-time college student. Colleges sometimes competed with one another for students, but students didn't have a lot of other learning options.

Today, the most rapidly growing population of college students consists of adult part-time learners. The enrollment of part-time students between 25 and 34 years of age increased 27 percent in the past five years; for those over 35 years of age, the increase was 44 percent. More than one third of all college students in the United States are now 25 or older, and 72 percent of these students attend part-time. (Chronicle of Higher Education, May 4, 1981, p. 3). Adults who enroll in college

classes voluntarily choose that option from a large number of possible alternatives, including courses offered by employers, labor unions, professional associations, community organizations, television, and a host of other providers. Higher education today provides a little over a third of the organized learning opportunities for adults; the remaining two-thirds is provided by vast array of schools and non-collegiate providers, many of whom offer everything colleges do and more. They may offer credit, degrees, education leading to promotion, licensure, personal fulfillment, intellectual stimulation, and practical skills. Industry, for example, spends not mere millions but billions of dollars annually on the education and training of employees. Business currently allocates more money for education and training than all fifty states combined allocate for higher education (Lynton, 1982). Aetna, Xerox, IBM, and other corporate giants have built campuses with classrooms and residence halls that rival anything offered in our most exclusive and expensive colleges.

Professional associations, too, are becoming the builders of vast educational networks. The American Management Association conducts 3,200 programs annually, and enrolls 100,000 learners, but even they have no corner on the market for business education. It is estimated that 3,000 different providers, many of them private entrepreneurs, conduct some 40,000 public business seminars each year. Thus Proposition One states that higher education faces unaccustomed competition from other providers of education in the society.

Proposition Two is related to Proposition One. It states that the roles of educational providers, once reasonably distinct, are increasingly blurred. It is no longer clear what courses merit credit, who may offer it, or who needs it. Indeed the distinction that we used to make between the education offered by colleges and the training offered by industry, is difficult to maintain ~~at least~~ when applied to providers. Colleges today are heavily involved in training as well as in education, and the programs of many corporations contain as much emphasis on theory, research, and personal development as those of any college. Consider, for example, this description of IBM's Systems Research Institute:

The Institute's educational philosophy is in many ways that of a university. It stresses fundamental and conceptual education and allows students to choose those courses that will best nurture their own development. The intent is to stimulate and challenge, to teach the theoretical and the practical, to discuss and argue differing viewpoints, to broaden the individual, focusing on his or her special skills (IBM Systems, 1981, p. 6)

Contrast that broad educational philosophy with this course description taken from a college catalogue. The course is called Airline Reservations and carries three academic credits. The description reads as follows:

Prepares students for airline employment opportunities through a familiarization of the procedures involved in airline reservations, the use of official airline guides, and airline route structures.

If one were given a blind sample of course descriptions today, it would be hard to tell whether they came from industry, colleges, museums, labor unions, or professional associations.

A related blurring of educational functions occurs in the distinction between credit and non-credit learning. Within higher education the waters have been muddied by some shifting of non-credit, non-funded courses to the credit, funded side of the ledger. Outside of higher education, non-colleges are beginning to offer not only fully legitimate credit courses, but full-scale degree programs. In the Boston area alone there are four new degree-granting programs founded by non-colleges -- a hospital, a bank, a consulting firm, and a computer manufacturer. While the image of Bachelor's and Master's degrees offered by these non-colleges is still mildly sensational, the movement of collegiate institutions into the realm of non-credit instruction is now commonplace. Between 1968 and 1978 more than a thousand colleges introduced non-credit programs on -- or more likely off -- their campuses. Today it is the norm rather than the exception for degree-granting colleges to be involved in non-degree instruction.

But whether a course was originally taken for credit is not especially important today. It is increasingly easy to convert non-credit learning into college degrees. Just a decade ago only about a third of American colleges granted credit if students could demonstrate on standardized examinations that they knew the material; today 84 percent of all colleges grant credit by examination. Ten years ago, only 14 percent of the colleges would consider granting credit for experiential learning; today 41 percent do (Stadtman, 1980).

Historically, colleges have been reasonably generous in

accepting credit from other colleges; today they are increasingly likely to endorse learning regardless of its source. The American Council on Education's Office of Education Credit lists over 2,000 courses offered by more than 180 corporations and government agencies, that appear worthy of college credit to faculty members conducting on-site visits.

Illustrations of the blurring of once distinctive functions for higher education could be extended, but my point is that ~~the education frontier is very large, and higher education is not alone out there.~~ Thus Proposition Two states that the roles of the various educational providers in the learning society are far from clear, and that blurring of functions rather than distinctiveness seems to be the trend.

Proposition Three states that higher education no longer has the full-time commitment of students -- or for that matter of faculty. In the past decade, the proportion of part-time students enrolled for college credit has gone from 32 percent to 42 percent, and 52 percent seems likely before the end of the decade.

While faculty of an earlier era may have complained that students were not giving undivided attention to their studies, traditional students were at least in the college environment twenty-four hours a day. They lived in an unreal "city of youth," and their full-time occupation was with the social and intellectual demands of college. Formal education is now changing from a full-time commitment for four years of a student's life to a part-time commitment for forty years. The

first priority of the adult learner of today is not college, but job, family, and an array of other adult responsibilities that serve as enhancers, detractors, and sometimes inhibitors of education. Thus Proposition Three states that higher education faces unaccustomed competition for the time and attention of students. Education cannot do whatever suits institutional convenience and assume that students can or will go along with it.

Proposition Four states that learning has become a lifelong necessity for almost everyone. There are very few jobs left in this world that are immune from the necessity for retraining and constant upgrading of skills and knowledge. The development of human capital is now recognized as a fundamental and necessary component of progress in this era of technological change and labor-intensive services. In today's climate, the widening gap between the skills available in the work force and the skills needed for social welfare and economic productivity is nothing short of alarming. There is a growing gap between the supply and demand for educated workers.

Lifelong education for jobs is the most visible symptom of social change. But in that change, from full-time education for a few years to part-time education for a lifetime, lie changes for curriculum, instruction, delivery systems, and lifestyles. So far in the history of industrialized nations, there has been a pronounced tendency to increase the separation between education, work, and leisure. The result has been termed the "linear lifeplan" in which education is for the young, work for the

middle-aged, and leisure for the elderly. But a study of the progression and influence of the linear lifeplan in the United States warns that "There can be little doubt that many of our most serious and persistent problems stem from the ways in which education, work, and leisure are distributed throughout lifetimes" (Best and Stern, 1976, p. 24). The major social problem is unemployment. ~~Although that problem is especially critical right now, it is not new.~~ For the past fifty years, society has been unable to provide jobs during peacetime for everyone willing and able to work. A blended lifeplan (Cross, 1981) in which education, work, and leisure are concurrent throughout the lifespan can address not only the urgent demands for lifelong education for the workforce, but it can also address personal and societal problems that are arising for youth, the elderly, two-career families, and mid-career executives. There are increasing demands from a variety of people for greater balance in their lives -- more job-sharing, more part-time educational arrangements, more leisure (Cross, 1981).

states that young people must be educated for their futures as lifelong learners.
~~Proposition Five is almost proposition 4 1/2, but the distinction between lifelong learning and adult education deserves its own space.~~ In the United States, we tend to equate lifelong learning with adult education. In Europe, and especially in the publications of UNESCO, they make quite clear that lifelong learning begins at birth and ends at death. The official UNESCO definition is that,

The term 'lifelong education and learning' denotes an overall scheme aimed both at restructuring the existing education system and at developing the entire educational potential outside the education system; in such a scheme men and women are the agents of their own education. (UNESCO, 1976)

That definition contains, among other things, a basic challenge to schools and colleges to develop the educational methods that will prepare young people for their futures as lifelong learners. TedSizer (1984), in discussing the needed reforms in high school programs in the United States, claims that "A self-propelled learner is the goal of a school, and teachers should insist that students habitually learn on their own" (p. 216). That becomes especially important as we envision a future in which millions of adults are added to the ranks of learners. Schools and colleges need to develop self-directed learners who are motivated and capable of establishing learning goals and selecting from the many options available those which best meet their needs. The learning society will require sophisticated consumers of educational services.

Most traditional education, however, is still geared to the notion of teachers as experts and students as empty vessels to be filled. Alvin Toffler, futurist author of The Third Wave, claims that "the reasons schools are in deep trouble today is that they no longer simulate the future, they simulate the past" (Toffler, 1981). Schools devised for the factory world emphasized virtues such as obedience, punctuality, and the willingness to do rote work because those were the demands of the Second Wave workforce. Despite the arrival of the Third Wave, dominated by electronics, telecommunications, and the information society, schools still

simulate the standardized work patterns of the factory. Everyone arrives for class and departs at a common time; students move on to the next lesson en masse, whether they have learned the material or not, and there is still an emphasis on absorbing information, despite the futility of that mode of education in the era of the knowledge explosion.

New knowledge is created faster than it can be learned or taught. Between 6,000 and 7,000 scientific articles are written each day, and information doubles every 5.5 years. The problem for the future is not the supply of information, but the selection. People need to know how to select appropriate information from an overwhelming array available, and they need to know how to use it in conceptual thinking. We're talking about something far more basic to education than technical and scientific training. We're talking about the need for broadly educated people with the skills that will serve as the foundation for a lifetime of learning. That calls for fewer information-laden lectures and more active analysis, synthesis, and application of knowledge on the part of students. Teachers who see their role as providers of information can and will be replaced by machines. Teachers who nurture, inspire, and assist in cognitive growth and intellectual development cannot be replaced by machines. They are our greatest resource in the development of human capital.

Proposition Six ~~comes full circle.~~ It concludes that education will play new roles in the society of the future. There is widespread agreement now that we are facing a major

revolution in society. It has been called The Third Wave, the Information Society, and the Technological Revolution. Whatever its nomenclature, the direction seems clear. Jobs, the economy, and lifestyles will be based on the creation and distribution of information. In 1950, only 17 percent of the jobs in the United States involved the processing of information; today more than 60 percent of all workers are creating, processing, or distributing information. ^{(Naisbitt, 1982).} Taking note of such changes, the Office of Technology Assessment of the United States Congress concluded that "The so-called information revolution, driven by rapid advances in communications and computer technology, is profoundly affecting American education. It is changing the nature of what needs to be learned, who needs to learn it, who will provide it, and how it will be provided and paid for" (OTA, 1982, p. iii).

The colleges and universities that are at the forefront of these changes tend to be those that are by the nature of their curriculum or mission closest to the changes taking place. The Department of Electrical Engineering and Computer Science at M.I.T., on the occasion of their hundredth anniversary, issued a report called Lifelong Cooperative Education (M.I.T., 1982). The title is significant; it suggests that the future of engineering education should be continuous throughout the working life of the engineer and that it will be provided by industry and education working in partnership. The report rejects the notion that a few years of formal education can provide an adequate foundation for half a century of professional work. They note that in engineering it is more than a question of keeping up with new

developments. Recent technological developments have not even been based on the same scientific and mathematical knowledge that provided the foundation for earlier models. Thus engineers who have been out of school for more than a few years face the probability that the very foundations of their knowledge are obsolete. Professor Louis Smullin of M.I.T. was quoted in Time Magazine (October 18, 1982, p. 100) saying that engineers "are washed-up by the time they are thirty-five or forty, and new ones are recruited from the universities." But as the M.I.T. report observes, the demand of the 1980s cannot be met by replacing "obsolescent" engineers with new graduates, even if that were a humanly acceptable plan. Thus they conclude that, "The only apparent alternative is better utilization of the presently available engineering workforce through continuing education at the workplace, with the active encouragement and support of employers" (M.I.T., 1982, p. 6). To the Centennial Study Committee, lifelong cooperative education is essential for three reasons:

1. Universities acting alone have neither the human nor the financial resources to carry out a lifelong educational program on the scale required. . . .
2. Engineering faculties cannot by themselves keep up with the knowledge explosion. Close collaboration between engineering faculties and their industrial colleagues is essential if new knowledge is to be distilled from the literature and widely disseminated at the rate at which it is being generated.
3. Engineers in industry and their university colleagues need a supportive environment in which they can teach and learn from another. A concerted effort will be required to bridge the many gaps -- organizational, social, and temporal -- that now separate 'work' and 'study' (M.I.T., 1982, p. 6-7).

Although ~~these recommendations for radical change in education come from an educationally conservative engineering school,~~ they are a precursor of things to come across the wide variety of educational institutions. Thus Proposition Six asserts that the providers, the organization, and the role of education in the society is changing.

These six propositions taken together will, I believe, affect higher education profoundly. They raise questions about how higher education should respond to extensive societal and technological change. ~~I have contended in this paper that~~ Educators should be thinking about more than new ways to deliver the standard curriculum, about more than convenient schedules and locations for new populations of learners, about more than increasing the accessibility of lifelong learning opportunities. Rather, it seems to me that the task is to reconceptualize the role of postsecondary education in the learning society.

That is not a task for the remaining few pages of this paper, but by way of conclusion, let me illustrate how reconceptualization might affect one part of the university ~~in the 21st Century,~~ namely relationships between the university and its students.

The learning society calls for thinking about students as permanent members of an extended academic community. The concept of a continuing educational relationship with students is far more exciting than the old alumni relationships that depended heavily on loyalty and money. Yet many colleges have been slow

to capitalize on this potentially powerful turn of events. How can the university serve a permanent student body?

In the first place, students are going to be looking for on-going relationships with teachers and with the academic community. The adjective, "academic" will come to refer to "the quest for knowledge" rather than to the university (MIT, 1982, p. 44). Indeed, as the MIT Report points out, the extended academic community will have teachers and students in the workplace as well as on campus, and "the same individual may be both a student and a teacher, at different times or even simultaneously" (MIT, 1982, p. 44). With the emergence of computer networks and telecommunications, it will be possible to participate in an academic community that extends around the world. Practitioners, researchers, and theoreticians will join forces in continuous learning.

Methods of classroom teaching will also change under the combined impact of lifelong learning, the information society, and the technological revolution. Classroom teaching has remained unchanged for centuries. The formula is simple. Professors tell students what they know. For many reasons, that formula is no longer adequate. In the first place, professors cannot keep up with the information explosion themselves. One estimate contends that a compulsive psychologist would have to read 30 to 40 articles and books each day just to keep abreast of the current literature. Professors as well as students will have to become experts in the selection and retrieval of information rather than its organization and storage in the human brain. A

second change for classroom teachers has been known for some years; we just haven't done much about it. That is the fact that telling students about something is a very low-power learning device when far more powerful interactive methods are coming into existence via technology, but also via teaching techniques.

A third reality of the future for classroom teachers is that teaching and learning will have to be geared to the escalating pace of change. When change is extremely rapid, it does little good to teach facts or skills which are quickly outdated. Content learning will be useful and necessary at any given time, but it cannot be the foundation of a college education. A foundation built on rapidly and constantly changing content will crumble under the demands of lifelong learning. Learning how to learn, which means gaining the cognitive skills and attitudes that characterize the lifelong learner is will be the task of students when they are "in residence" at the university.

Advising, career planning, and placement also take on new dimensions when viewed through the wide-angle lens of the learning society. None of these activities are ever "over and done with." Career planning is a lifelong challenge that changes with the life stage of the planner. Planning for an entry-level position with a 20-year old is a very different activity from planning a career change with a 50-year old. The professional knowledge and skill required of counselors and advisors escalate sharply with the need for increased understanding of the stages of adult growth and development. These examples of changing relationships between the university and its students just begin

to scratch the surface of the changes that lie ahead.

Professionals in education, whether teachers, administrators, counselors, or researchers, will do their jobs differently under the impact of a student body that encompasses all ages and that comes from the workplace as well as prepares for it. Students of the future will be, in many cases, older and wiser in the ways of the world and their jobs than those who teach and counsel them. Their interest in the institution will be based on this year's or last year's experience with it, not on what they remember from 20 years ago, which tends to be charitable in obliterating the petty annoyances and failure of educators to address their needs.

The learning society will be an exciting challenge to all of us who work in education. We will make many mistakes as we try to keep up with it, but the greatest mistake would be not to accept the challenge, not to respond to new times and new kinds of students, not to join with others in making the learning society all that it can be.

Despite the gloom and doubt that prevail in higher education today, the learning society represents an exciting challenge. The literature that is making so much impact on the business world today (e.g. Peters and Waterman, 1982, Kanter, 1983) is advocating the development of our human resources. That, it would appear, is the primary business of education.

REFERENCES

- ✓ Best, F. and Stern, B. Lifetime Distribution of Education, Work, and Leisure. Washington, D.C.: Institute for Educational Leadership, Postsecondary Convening Authority, 1976.
- ✓ Cross, K. Patricia. Adults as Learners. San Francisco: Jossey-Bass, 1981.
- ✓ IBM Systems Research Institute Bulletin. New York: IBM Systems Research Institute, 1981.
- Kanter, Rosabeth Moss. The Change Masters. New York: Simon and Schuster, 1983.*
- ✓ Keller, George. Academic Strategy. Baltimore: The Johns Hopkins University Press, 1983.
- ✓ Lynton, Ernest. The Role of Colleges and Universities in Corporate Education and Training. Discussion Paper prepared for the Ford Foundation. University of Massachusetts, Boston: 1982.
- ✓ MIT Centennial Study Committee. Lifelong Cooperative Education. Cambridge, MA: Massachusetts Institute of Technology, Department of Electrical Engineering and Computer Science, October 2, 1982.
- ✓ Naisbitt, John. Megatrends. New York: Warner Books, 1982.
- ✓ Office of Technology Assessment. Informational Technology and its Impact on American Education. Washington, D.C.: Congress of the United States, 1982.
- ✓ Sizer, Theodore. Horace's Compromise: The Dilemma of the American High School Today. Boston: Houghton-Mifflin, 1984.
- ✓ Stadtman, Verne A. Academic Adaptations. San Francisco: Jossey-Bass, 1980.
- ✓ Toffler, Alvin. The Third Wave. New York: Bantam Books, 1981.
- ✓ UNESCO. Recommendation on the Development of Adult Education. Recommendation adopted at General Conference, Nairobi, Kenya, October-November, 1976. Paris: UNESCO, 1976.
- Peters, Thomas J. and Waterman, Robert H. Jr. In Search of Excellence. New York: Harper and Row, 1982.*