

EDUCATION FOR THE YEAR 2000

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The 21st Century is only fifteen years away. For many reasons, not the least of which is the escalating pace of change, we should expect to see dramatic change in how education is delivered, what is delivered, by whom, to whom. It seems clear to me that by the Year 2000, colleges and universities will be playing a different role in society from what they play today.

We are in a period of transition from old concepts of colleges as four years of full-time study for 18 to 24 year olds to a new concept of colleges which will include the option of 40 years of part-time education for 18 to 80 year olds. All of the current trends point in that direction. In 1972 two-thirds of all college students were studying full time, and two-thirds were between the ages of 18 and 24. Today 43 percent of all students are studying part time; 41 percent are 25 or older, and 80 percent are commuters. It is a far cry from the stereotype that many people still have of Joe College and Jane Coed pursuing their education with carefree abandon on

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bookish campuses with ivied walls, fraternity parties, and classes with Mr. Chips--when Chips referred to the kindly professor rather than to microchips.

These changes in ~~the constituency~~ of higher education are the combined result of social change, the demographics of the birth rate, and the technological revolution (Cross, 1981). But most importantly, education is playing a new role in society, attracting new kinds of students, because of the growing dependence of our national economy on education.

"Our nation is at risk, " declared the national report on education....¹¹ America's position in the world ^{they say,} may once have been reasonably secure with only a few exceptionally well-trained men and women. It is no longer....Learning is the indispensable investment for success in the 'information age' we are entering." (National Commission on Excellence in Education, 1983, p. 1-7).

Futurist Alvin Toffler (1980) labels the information age the Third Wave. He uses the metaphor of waves to suggest that change rolls and crests across the planet, with the leading edge of each wave introducing dramatic and rising change, which then steadies and finally subsides as the next wave begins to rise.

The First Wave, according to Toffler, was the Agricultural Revolution. Land became the capital asset in a society that converted from migratory hunting groups to farming. The Industrial Revolution constituted the Second Wave which swept across the Industrialized nations of the world between roughly 1750 and 1950. The capital asset of the Second Wave was money. While many people knew how to build the factories necessary for mass production, not many people had the dollars to build one.

The Third Wave started in the United States around 1955 when white-collar and service workers began to outnumber blue-collar workers. Computers, biotechnology, and telecommunications have become known as "sunrise" industries to distinguish them from the "sunset" or smokestack industries of the Second Wave. The capital asset of the Third Wave is knowledge and the people who know how to generate it and use it.

Steven Jobs, the youthful founder of Apple Computers, is the symbol of Third Wave human capital. Not a member of the landed gentry, and with little in the way of financial backing, he used knowledge, innovation, and entrepreneurship to launch a corporation which saw profits in the first quarter of 1985 zoom to \$46 million. Recent news from the computer industry, however, suggests that an industry built on creativity and innovation will be considerably more volatile than one built on land or steel. Competition, after all, can come very quickly in the form of someone else with a good idea.

Good ideas provide the fuel for the Information Age. Unlike the Industrial Revolution which depended on fossil fuels for its energy, ^{the} Technological Revolution is fueled by knowledge which is a nondepletable, expandable resource. Moreover, it is self-generating; the more people use it the more it expands.

What could possibly be more important to the future of education than the Third Wave? Knowledge and the development of human potential have always been the business of education. Now, because of the economic importance of knowledge, the development of human resources has become everybody's business.

Corporate America has entered into human resource development in a big way. The education and training budgets of some of the larger corporations exceed those of some of our major universities, and Aetna, Xerox, IBM, and other corporate giants have established campuses with classrooms, residence halls, and full-time faculties, in order to increase their productivity in the best way they can today--through the education of workers. Suddenly, people who can think, who are creative and innovative, and most importantly, who are willing and able to become lifelong learners have become the capital asset of an economy that is running on "idea power."

Peters and Waterman (1982), authors of the best-selling book In Search of Excellence, label the new approach to management "productivity through people" and they advise corporations that in the years ahead, productivity will not come from Second Wave approaches of spending money on automation and equipment, but on the education and training of their employees, i.e., on the development of human resources.

This growing dependence on education has implications, of course, for education from grade school through grad school, but the immediate impact is felt most strongly in adult education. The world is changing too fast to wait for new generations of learners to come through the school system. We need workers and citizens who can adapt now to changing conditions in the workplace.

No wonder adult education has become the fastest growing segment of American education. The majority of these new adult learners are women. Women now out-number men in the rate of their

participation in ~~adult~~ education in every age group from college through retirement. Much of this is attributable to the womens' movement and the catch-up phenomenon that makes education ever more important to women.

Three distinctive groups of women symbolize both the changes in higher education and the changes in womens' roles. First is the traditional but expanding group of young women just out of high school who are preparing for a new range of careers including medicine, law, business and other careers previously reserved for men. Second are the displaced homemakers and re-entry women, who often come to college with a sense of urgency for the vocational skills and credentials that will provide access to better jobs to support themselves and quite frequently children. Third, and just as significant, are full-time homemakers and older women who are finding pleasure and satisfaction in expanding their personal, cultural and intellectual horizons in the new range of non-credit courses that are available through extension and community education programs.

Our society has legitimately become known as the Learning Society for two reasons: first, because so many people are involved in education either as providers or consumers of educational services. Many organizations whose primary business is not education are conducting courses, institutes, training sessions, and other forms of what the National Center for Education Statistics calls "organized learning activities." It is estimated that between one-third and one-half of all adults in this country participate in educational activities offered by an incredible array of people and organizations

including employers, churches, community agencies, museums and libraries, labor unions, professional associations, television, and a new breed of independent entrepreneurs who set up institutes or clinics on such popular topics as "Managing Your Money," "Knowing Your Wines," or "Improving Your Backhand."

One group of college students in New York City went into the streets around their college and found more than 100 resources for learning within a five-block radius, including dance and music studios, social action organizations, church programs, artists, etc. (Gross, 1977, p.90). In fact, there are so many opportunities for learning now that a California legislative study concluded that the greatest problem ^{lies} ~~is~~, not in the provision of more educational opportunities, but in getting adults who are seeking learning opportunities in touch with providers who are offering them (Hefferlin, Peterson, and Roelfs, 1975). To meet that need, some 500 educational brokering services have appeared across the country to tackle the job of working with adults to identify their learning needs and locating the organizations that can satisfy those needs (Kordalewski, 1982).

But our society is also known as the Learning Society because of the products of learning. We are in the midst of a knowledge explosion that has educators, wherever they work, running just to keep in place. The statistics describing the information society are themselves a product of the computers that are cranking out more information than we can possibly absorb or use. Between 6,000 and 7,000 scientific articles are written each day, and scientific and technical information doubles every five and

one-half years (Naisbitt, 1982, p.24). One way of dealing with this huge surplus of information is to shoot it out in short, modular blips--the ninety-second newsclip intercut with the thirty second commercial, a headline here, a cartoon there, a professional newsletter of short, disconnected items of information. Trivial Pursuit is aptly named and a symbol of our times--huge files of disconnected facts that defy organization and can be expanded at will.

The skill that is rising in importance as knowledge explodes about us is the intellectual skill of synthesis. Many people know bits and pieces of information that are easily available to more people than ever before in history. Not many people know how to separate the wheat from the chaff or how to put this flood of information together to make it useful. "Running out of (information) is not a problem," says John Naisbitt (1982, p.24), "but drowning in it is."

How do we prepare people to live in the kind of world I have just described? It is a world in which change is the constant. Children are learning lessons their parents never knew. Generation gaps are appearing between recent and older employees. Lifelong learning is a convenient label that is in danger of becoming trivialized by its very familiarity. But lifelong learning means more today than just keeping alert to new developments. It means more emphasis on formal learning. It means sitting down with books and/or computers to teach yourself. It means attending workshops and institutes to keep up with changes in your field. Adult education has become compulsory in some professions, but by and large, participation in formal

learning activities will probably remain voluntary for most adults. Students graduating from college today can join the learning society and, in Rosabeth Kanter's catchy words become "movers" or they can choose not to join and become "stuck" in deadend jobs and in a life that seems frustratingly out of touch with the pace of change.

No education, no matter how brilliantly designed and delivered, will last a lifetime in a world in which entire industries are created and wiped out in a single decade. Any student who graduates from college without the cognitive skills and the attitudes and values to pursue continuous learning must be considered a failure of the educational system. Mortimer Adler (1982,p.6) puts it this way: "Schooling, basic or advanced, that does not prepare the individual for further learning has failed, no matter what else it succeeds in doing."

People will have to become adept, not at learning facts and figures, which can be better handled by computers, but at the application of information and knowledge. This requires a different form of education than most educators have emphasized, and it requires a direction that I am not sure I see in the present rush to educational excellence. Children are certainly going to need a good grounding in the basic skills. These are the tools for lifelong learning, and children can profit from each successive year of schooling ^{only} to the extent that they possess the necessary learning skills. But the major emphasis of much of the current school reform movement is on the acquisition of facts and information--the type of information that can be measured by

academic achievement tests. Some tests strive to measure the acquisition of higher level cognitive skills, such as analysis, synthesis, and problem solving, but 95 percent of test questions call for little more than the accumulation of quickly out-dated facts (Bloom, 1984, p.14). As Alfred North Whitehead (1929) remarked ~~a quarter of~~ ^{half} a century ago, "A merely well-informed man is the most useless bore on God's earth."

I would add that we are rapidly reaching the point where teaching only for--or even primarily for--the mastery of quickly outdated subject matter is the most useless education on God's earth. Unless students can use the information, make it their own, and put it together in new ways in order to apply it to constantly changing conditions, they will not be prepared for life in the 21st Century.

It occurs to me that the high interest in physical fitness today has an analogy in learning fitness for tomorrow. Today's passion for sports and physical fitness can be seen as a response to the industrial revolution. As machines replaced muscles on the job, people found ways to keep physical exercise and exertion in the picture--even if somewhat artificially by doing non-productive work. Jogging, aerobics, exercises, and the like have replaced physical labor on the job, and they are improvements over the old work demands which over-worked some muscles and under-exercised others. Today's concept of physical fitness is far more sophisticated and balanced than the old work demands. It results in a higher level of physical fitness and development.

Perhaps the corollary is that as computers begin to do more

and more of the repetitive work of the mind, people will begin to reach for a higher level of cognitive development. Memory, recall, recognition and other mental tasks that are now handled more efficiently by computers may give way to the desire for more balanced and effective cognitive development.

Taking our cue from the success of the physical fitness campaign, perhaps the task of educators should be to develop a learning fitness program for the nation. To do that, we must first recognize that we cannot give students a good education any more than we can give people physical fitness, but there is much in the physical fitness analogy that is directly applicable to the concept of learning fitness.

1. The dissemination of research on physical fitness has been helpful, and the general public proved fairly easy to reach and to teach. Smoking has declined, jogging has increased, knowledge about the cardiovascular system has spread, and many people know the difference between exercising to develop muscle strength and exercising to develop heart and lung capacity. If learning fitness came to be perceived as important as physical fitness, would not people be eager for more knowledge about how to attain it?

2. Fitness is developmental. It is clearly understood that no one--not Nautilus, not Adidas, not Jane Fonda, and not the national and local park and recreation system--can give people physical fitness. People understand that it takes time and requires their own personal investment. Experts can diagnose, prescribe, and offer feedback, but in the final analysis, fitness

is something people must attain for themselves. The best we can do is provide the environment, the equipment, and the support system to enable people to develop themselves.

3. We cannot modify the rules of physical fitness to take account of the life circumstances of the aspirant. We can't, for example, suggest that adults invest less time in the process because they have job and family responsibilities--although we can certainly make jogging tracks available, put exercise rooms and swimming pools in hotels, make the hours of Nautilus consistent with adult schedules, deliver inspiration, information, and yes, even images of fellow fitness buffs dancing to the beat of aerobic music on television.

4. We can't make everyone equal in physical fitness. Everyone can improve, and everyone can do something--even if from a wheelchair or in homes for the elderly. But the challenge must be consistent with the ability and condition of the learner. Today's concept of physical fitness is basically non-competitive. Sure, there are a few super stars who win the Boston Marathon, but for most people the companionship of running together and the feeling that they are doing something good for themselves is enough.

5. Fitness must have some payoff; it has to work. People need the reinforcing feedback of feeling better, looking better, and in general taking pride in their accomplishment. One of the interesting things about physical fitness is that people are willing to wait for long-term results. Joggers do have to see improvement, but it does not need to be today or tomorrow. Indeed, the current advice seems to be that intermittent exercise

is better than constant pushing and that muscles need time to recover and time to grow and develop.

6. Fitness is never finished. We cannot participate in a rigorous well-balanced program as young people and hope to remain fit for the rest of our lives. We will all slip out of shape from time to time, but we should learn what being in shape feels like and we should know how to get in shape.

7. Fitness is for amateurs. There is no mystique about it, and experts do not intimidate. Although body builders and marathon athletes may know everything there is to know and do everything there is to do in developing their own expertise, they do not deter the rest of us from knowing what works for us.

8. Fitness does not require large expenditures of money. Wearing the right shoes will surely help, but stylish jogging outfits and fancy equipment are incidental, and lack of funds is rarely heard as an excuse for doing nothing.

9. Fitness is active. No one ever became fit by watching someone else or listening to descriptions of fitness. People who are models of fitness can inspire; experts can demonstrate exercises and skills; and reading assignments can inform and develop appreciations; but in the final analysis, the only way to develop fitness is to engage actively in the activities that are known or thought to lead to that goal.

Although higher education has not labeled its efforts to attract and serve adult learners a campaign for learning fitness, it seems to me that higher education, and especially adult education ^{is} ~~are~~ moving in that direction. Let me recount for you

some of the ways in which colleges are making it easier for adults to become fit learners.

First, there are new opportunities to demonstrate college-level proficiencies without taking a course in something you already know. Just as there are ways to demonstrate physical fitness, there are ways to demonstrate learning fitness.

Many parents are familiar with advanced placement tests that permit young people to "test out" of certain courses. Fewer are aware of the CLEP (College Level Examination Program) exams that permit adults to gain college credit through demonstrating their proficiency on nationwide examinations, offered on more than 1000 college campuses as well as at locations overseas. ~~Hundreds of~~ ^Thousands of adults have received college credit through examinations, and the CLEP exams and others like them offer adults an opportunity to gain credit in more than fifty subject matter fields. Colleges, of course, retain the right to say what subjects and what test scores are acceptable for college credit, but at latest count, more than 1500 colleges were accepting CLEP tests as demonstrations of certain kinds of fitness at the college level.

Colleges have been pushed in part by the military services who operate the largest educational system in the world, and who were among the first to devise tests to obtain college credit for people pursuing education in far-flung posts all over the world. Military personnel moved too often to put courses taken on the base, at varying¹⁰⁰⁵ nearby colleges, and through correspondence study together to add up to a college degree. Credit-by-examination met these needs.

In some states, the notion of getting college credit for what you know rather than where or when you learned it has become state policy. New York, for example, offers the Regents External Degree, which is a college degree available to anyone in the world via the route of examinations. I had the honor of attending a graduation ceremony in the New York state capital this past spring where adults had come from as far away as Thailand to receive their degrees and where one of the highlights of the graduation ceremony was the granting of bachelors degrees to a retired couple in their seventies who walked across the stage hand in hand, fulfilling an ambition that had escaped them earlier.

While New York has become a highly visible advocate for adult learning, other states and many colleges offer external degrees where it is possible to earn a college degree through a variety of off-campus learning experiences. In fact, there are more than 200 external degree programs in the United States, and more than 58,000 adults have earned college degrees in this way (Sosdian and Sharp, 1978).

Just as there are many routes to physical fitness, there are many routes to learning fitness. Both have measureable outcomes, and it is not necessary to perform the daily and weekly exercises in a given place at a specified time--although some people may still prefer organized group learning to do-it-yourself projects. For younger people without the self-knowledge or self-discipline to undertake a self-directed program of fitness, on-campus study in classrooms with reinforcing teachers and fellow students may be the best route, but higher education is increasingly making

alternate options available.

Another option that is becoming increasingly common is to grant credit for experiences which are equivalent to the learning offered in college courses. An adult carrying out a project for a volunteer agency, for example, might earn credits in sociology if it could be shown that the learning was comparable to that learned through college study. Increasingly, adults are putting together "portfolios" of their learning products and experiences to have them assessed for college credit.

Earning credit for courses taken on the job is ^{yet} another route to college degrees. The American Council on Education (ACE) publishes a catalogue in which they list more than 2000 courses offered by industry, government, and other non-colleges that have been determined by faculty members visiting the learning site to be college-level courses. The ACE makes recommendations to colleges about how much and what kind of credit seems appropriate.

The most recent, and to some educators, most alarming development in the rush to serve adult learners has been the entrance of fully accredited corporate colleges on the scene. There were, at latest count, eighteen corporations including Xerox, Aetna, IBM, Massachusetts General Hospital and others that had established their own colleges with state authority to grant bachelors, masters, and even doctoral degrees (Eurich, 1985). Many of these corporate colleges have developed beautiful campuses with residence halls, technologically advanced classrooms, and dining halls that rival anything offered in our most exclusive and expensive colleges.

National Technological University (NTU) takes the Learning Society one step further in establishing the latest word in a non-campus university that delivers courses via satellite to corporate classrooms throughout the country. It is a cooperative effort of some major engineering universities and a group of high-tech industries such as Hewlett-Packard, Digital, NCR, RCA, and others. They are prepared to offer masters degrees to students who may study at places and at times most convenient for them.

Although, as I suggested earlier, I think the major impetus for the learning society comes from the increasing importance of education to the economy, not all adult education is vocational or career oriented. Elderhostel is an exciting program for adults 60 or older whose goal is the enrichment of life. Elderhostel started in four New Hampshire colleges that wanted to use their dormitories and faculties in the summer to offer courses to people who came to spend a week learning about their world and the people in it. Today Elderhostel involves more than 700 colleges in the United States and abroad and some 70,000 people in in a liberal education program for adults.

The point of these examples is to demonstrate with concrete evidence how much of the Learning Society is already in place. There is a new vision rising, only some of it led by the educational establishment. It is taking us into the Learning Society almost faster than some people are prepared to move, and it is profoundly changing the role of higher education in our society.

There are questions, understandably, about whether these

changes will not undermine the worth of the college degree, will not change education from liberal arts to vocational education, will not subvert the meaning of education from education for self-development to education for material gain.

The non-traditional colleges that I have described are moving toward what many believe to be an education more in tune with the demands and realities of the 21st Century. They are also moving away from what many college alumnae will remember as some of the richest learning experiences of their lives, a period in which lifelong friendships were made and considerable growing up was accomplished.

For better or for worse, colleges of tomorrow will be quite different from the colleges most of us remember. They will be serving a far wider spectrum of the population on every dimension--more women, more ethnic minorities, more people from low income brackets, more part-time students, more commuting students, more older students, more underprepared students. The character of colleges has already changed from relatively homogeneous collegial communities to diverse, specialized, largely impersonal commuter institutions. The overwhelming majority of all college students today are commuting, putting in an appearance at classes and then, for the most part, disappearing via subway, auto, and bus, back into the lives from which they came. It is not unlike the move from small towns, with all their advantages and disadvantages, to large cities, with their infinitely greater variety of people and resources, but also their more anonymous, impersonal environments.

Do colleges worry about this, and are the changes truly

adaptive to the educational demands of the 21st Century? The answers are "yes" and "probably yes."

Colleges worry--or should worry a lot-- about these trends because research is fairly clear now that student learning is directly related to the amount of involvement students put into their college experience. Commuters are more likely to drop out of college than campus residents; part-timers are more likely to leave than full-timers, and to no one's surprise, students devoting four years of full-time study to get an education show more growth on a variety of personal characteristics than students for whom education is a part-time activity (Astin, 1985).

The question for collegiate educators is how can we educate more people to higher levels than any other nation in the history of the world and still give the individualized, personalized attention that is known to make a difference.

Personal attention may be easier in a small residential college, but there are many small colleges that do not give it and many large colleges that do. It depends very much on the leadership of the college and the extent to which it conveys to every teacher, counselor, adviser, receptionist, and anyone else working directly or indirectly with students that the mission of the college is to serve students.

The major message of most colleges is conveyed by faculty in their classrooms. As the report issued by the American Association of colleges put it, "Central to the trouble and to the solution are the professors..." An evening class of mature students can become a highly personal, very valuable learning experience with important interactions between faculty and

fellow students, or it can become an impersonal experience that might be better and more efficiently accomplished by television. The case for live professors must now be made on the basis of their human qualities. The 21st Century is bringing far more efficient learning methods into existence, but so far, there is nothing that adds more to the learning experience than people who are knowledgeable and who also care about the experience and growth of students as individuals.

What is exciting about the Learning Society is the opening up to all segments of society the opportunities for lifelong learning. What we hope to maintain is multiple ~~options~~ options--full-time study in the residential collegial atmosphere of the liberal arts college ^{as well as} ~~plus~~ part-time study at the local commuter community college. The return to the single option of small residential colleges, with all their advantages, is no more likely than the return to small town America.

If we do it right, colleges will serve all of society in the 21st Century. The education of the 40 or 75 year old will be just as important as the education of the 18 year old, and it will demand all of the expertise, commitment, and support that we can give it. Higher education, like the rest of the world, is changing. We hope for the better.

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