DOCUMENT RESUME

ED 372 192 CE 066 722

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TITLE Higher Education and the Changing Nature of the American Workforce--Responses, Challenges, and Opportunities. EQW Working Papers WP21.
INSTITUTION National Center on the Educational Quality of the Workforce, Philadelphia, PA.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE 94
CONTRACT R117Q00011-91
NOTE 19p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Role; Educational Change; Educational Needs; *Education Work Relationship; Emerging Occupations; Employment Patterns; *Higher Education; Job Training; *Labor Force Development; *Labor Market; Paraprofessional Personnel; *Relevance (Education); Skill Development

ABSTRACT

Technology and international competition have transformed business practices and employment patterns. The migration of high-paying jobs from manufacturing to services, the growing importance of small firms in the U.S. economy, and the development of new technical occupations characterized by often sophisticated technologies and the absence of clearly defined career paths and status have increased the importance of the college degree in today's job market. However, college degrees cannot in themselves ensure successful lifelong careers. The biggest challenge facing higher education today is finding ways of meeting the demand for college degrees that confer genuine job skills. Whether higher education will cope with the turbulence created by labor market changes is an open question. The pessimistic scenario holds that failure to respond adequately to labor market changes will eventually weaken higher education's credential monopoly. The optimistic scenario reaffirms the importance of college degrees in an increasingly competitive labor market. Optimists argue that colleges and universities will become more adaptive and more outletlike in their approaches to questions of delivery and overhead. (MN)

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ED 372 192

Higher Education and the Changing Nature of the American Workforce—Responses, Challenges, and Opportunities

by

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"Higher Education and the Changing Nature of the American Workforce—Responses, Challenges, and Opportunities"
by Robert Zemsky and Penny Oedel
EQW Catalog Number: WP21

The work reported herein was partially supported under the Educational Research and Development Center program, agreement number R117Q00011-91, CFDA 84.117Q as administered by the Office of Educational Research and Improvement, U.S. Department of Education. Additional funding was supplied by The Pew Charitable Trusts and the Student Loan Marketing Association (Sallie Mae). The findings and opinions expressed in this report do not reflect the position or policies of the Office Educational Research and Improvement or the U.S. Department of Education, The Pew Charitable Trusts, or the Student Loan Marketing Association.

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Introduction

For U.S. firms and the workers they employ, there is no turning back. Technology and international competition have transformed the business practices and employment patterns most Americans once took for granted. The demise of mass production and advent of customized manufacturing, the downsizing and dismantling of corporate giants, the evolution of new service industries and occupations—these are the trends that are changing the lives of American workers, constraining their ability to move from school to work, to acquire and upgrade skills, to find and keep good jobs. These are also the trends that increasingly will shape post-secondary education in the United States—by making the competition for good jobs tougher, by increasing the value of educational credentials, and by intensifying the vocational cast of higher education. Drawing on research from the National Center on the Educational Quality of the Workforce (EQW), the Pew Higher Education Roundtable, and a special analysis commissioned by the Student Loan Marketing Association (Sallie Mae), this paper summarizes major labor market trends, then explores their likely implications for American higher education.

Labor Market Trends

Three trends in particular are shaping employment opportunities and skill requirements for American workers:

- the migration of high-paying jobs from manufacturing to services;
- the growing importance of small firms; and
- the development of new technical occupations.[1]

The Shift Toward Service-Sector Employment

The broad outlines of the changing American workforce are now clear to employers and policy makers alike. The most obvious, as well as sustained, change is the persistent decline of traditional, high-paying manufacturing jobs held by blue-collar workers with a high school education. Here, the numbers tell the story. The table displayed in Figure 1 reports the number and percentage of all employed respondents by sector (manufacturing, service, wholesale and retail, public administration, infrastructure and other) and by income quartile for 1981. Figure 2 presents the same data for 1991.

In 1981 there were roughly five high-paying jobs in the manufacturing sector for every 3.7 such jobs in the service sector. There were also roughly a million more individuals employed with high-paying jobs related to the nation's infrastructure—transportation, utilities, communications, et. al—than in the service sector. By 1991 each of these relationships had been reversed: the service sector accounted for some 8 million or 37 percent of the best paying jobs; transportation, utilities, and communications accounted for 26 percent (down from 29 percent in 1981) of the best paying jobs; and the manufacturing sector now had nearly 2.4 million fewer high-paying jobs than the service sector. The growth of service-sector jobs, traditionally the domain of better educated workers, means both new and greater opportunities for graduates of colleges and universities.

Small Firms and Labor Market Churning[2]

Less easy to document, but probably related to the growing dominance of the service sector, is the increasing importance of small- and medium-sized firms as sources of employment and places of economic expansion. The most visible effect of the 1990-92 recession has been the willingness of large employers, after more than a decade of delay, to downsize their workforces. Sears, General Motors, IBM, AT&T, American Airlines—these are only a few of the large manufacturing and service organizations that have sought a return to profitability by becoming substantially smaller enterprises.

The full impact of this downsizing on the structure and composition of the workforce has yet to be felt. Historically, large firms have shared responsibility with the nation's colleges and universities for developing well-trained workers. It is the large firm that has pur-

Figure 1

October 1981 Industry and Income Distribution

	Low Income			High Income	Grand Total
Manufacturing	4,494,930	4,439,130	5,402,929	5,083,325	19,420,314
	23%	29%	31%	30%	28%
Service	5,833,104	4,286,669	4,560,818	3,767,528	18,448,119
	30%	28%	26%	22%	27%
Trade	5,383,658	2,366,524	1,970,138	1,718,692	11,439,012
	28%	16%	11%	10%	17%
Public Administration	666,723	932,219	1,425,796	1,449,596	4,474,334
	3%	6%	8%	9%	7%
Infrastructure	3,017,539	3,114,320	3,896,353	4,869,556	14,897,768
& Other	16%	21%	23%	29%	22%
Grand Total	19,395,954	15,138,863	17,256,034	16,888,696	68,679,547
	100%	100%	100%	100%	100%

Source: Current Population Survey, Bureau of the Census, U.S. Department of Commerce, October 1981

Figure 2

October 1991 Industry and Income Distribution

	Low Income			High Income	Grand Total
Manufacturing	3,842,471	4,820,510	3,680,320	5,671,535	18,014,835
	20%	23%	25%	22%	22%
Service	6,650,836	6,265,607	4,432,651	8,019,996	25,369,091
	35%	30%	30%	31%	32%
Trade	5,525,977	3,835,780	2,014,716	2,793,544	14,170,016
	29%	19%	13%	11%	18%
Public Administration	405,081	1,277,031	1,385,209	2,366,557	5,433,878
	2%	6%	9%	9%	7%
Infrastructure	2,786,665	4,467,929	3,493,370	6,673,411	17,421,374
& Other	15%	22%	23%	26%	22%
Grand Total	19,211,029	20,666,857	15,006,266	25,525,043	80,409,195
	100%	100%	100%	100%	100%

Source: Current Population Survey, Bureau of the Census, U.S. Department of Commerce, October 1991

posefully recruited its workforce—often from the ranks of recent college graduates—and then trained its employees in structured programs involving job rotation, classroom instruction, and formal internships. Large firms also have supplied many of the managers and entrepreneurs on which the nation's smaller businesses depend. Smaller firms, by contrast, seldom engage in human-resource planning or offer much in the way of formal training. Most small firms are reluctant to hire first-time or inexperienced workers, benefiting instead from the prospective worker's own investment in a specialized training program or from the training investments of previous employers. The paradox is that the growth in the number and importance of small firms will result in increased demand for work-related education and training, despite the traditional reluctance or inability of such firms to support training programs.

The downsizing of large firms also has tended to increase part-time and intermittent employment. To contain the cost of employee benefits, most firms now seek to avoid an increase in their permanent payrolls. One strategy has been to outsource separable tasks within the firm; another has been to engage temporary and contract workers, often drawing on first-time job seekers, homemakers returning to the workforce, and retirees.

The growth of employment in small firms, along with this increasing reliance on part-time and temporary workers, will likely have three additional effects: an increase in labor market churning, as more workers mix spells of unemployment with periods of employment; a further lengthening of the school-to-work transition for both high school and college graduates; and a further shift of responsibility for training to those least able to afford the costs of specialized courses and training programs. In these respects, the United States is very different from its chief economic rivals, Germany and Japan. For the Germans as well as the Japanese, there has been a clear sense that job turnover is to be avoided—that careers, whenever possible, should be confined to a single firm and that first jobs ought to provide positive introductions to life-long careers. As a result, both countries have relatively low employee-turnover rates and substantial employer investments in the training of first-time workers. Both countries have regulated or quasi-regulated labor markets that allow a firm to recoup the cost of its investments in the training of first-time and mature workers.

In contrast, the American labor market is largely unregulated. Other than OSHA rules and union guidelines, there are few formal mechanisms promoting either job tenure or worker training. As a consequence, the school-to-work transition is much more informal in the United States than in Germany, where youth apprenticeships link employers, employer associations, and schools, or in Japan, where seniority and educational credentials govern promotions and lengthen job tenure.

In America, first-time workers are largely on their own in the struggle to gain enough work experience, often through a series of part-time and temporary jobs, to qualify for steady employment with benefits and promotion. As benefits costs have risen and the demand for new permanent employees has declined, firms have come to stress job-comportment skills (self-discipline, task orientation, self-learning) as well as technical skills when sorting applicants for a permanent position. What most firms have discovered is that age and prior work experience function as the best proxy for both comportment and technical skills. Not surprisingly, recent high school and college graduates now

have to spend between two to six years as intermittent workers before beginning real careers.

The sheer increase in the number of skilled workers and managers who have been made redundant by the downsizing of large firms will likely aggravate both the general churning of the American labor market and the delay in integrating first-time workers. With fewer firms promising life-long employment, experienced workers increasingly will find themselves changing jobs and searching for new careers. Experienced workers cost more to hire, but they require less training and pose fewer risks for employers. The results will likely be a further decrease in average job-tenure, an increase in the time that both experienced and first-time workers spend looking for employment, and an emphasis on job skills acquired without assistance from the employing firm.

The Rise of Technical Crafts

Historically, Americans have described the occupational structure of the labor market as if it were a layered pyramid: manual laborers at the base, followed by a layer of blue-collar craftsmen, a layer of white-collar (largely college-educated) employees, and the nation's professionals and managers at the top. For all its historic accuracy, this image cannot account for the rise of a new class of technicians responsible for building and operating complex technologies. They are the new economy's "white-coat technicians" and "technical craftsmen," terms coined by Stephen Barley of the National Center on the Educational Quality of the Workforce (EQW), who is among the handful of scholars charting the growth of technical work and workers. These scholars argue that the technician is already becoming the backbone of the United States' investment in manufacturing and service technologies. Such workers are prime consumers of training, although not necessarily of college degrees.

The best examples of the rise of technical work can be found in the American military, which has redefined its occupational structure in terms of technologies and technicians.[3] This use of technical specialists has allowed the armed services to reduce troop levels as well as to utilize sophisticated weapons and procedures. Much of the appeal of the armed services as a career for non-commissioned officers lies in the opportunities to pursue technical specialties that confer status, promise personal advancement, and include substantial training. In the civilian economy the role of the technician is less well-defined, although specific examples of the new technical crafts abound: computer programmers, medical technicians, paralegals, and engineering technicians, to name just a few.

In the past, single large firms tended to dominate the markets for particular technologies. Within such a firm, the service representative was an extension of the company itself, the result of years of training and first-hand experience with the firm's products and customers. Xerox, IBM, and AT&T were classic examples of firms whose former service reps populated entire industries with experienced technicians. The status and occupational security accorded these modern craftsmen derived directly from the standing of their firms and the quality of their training programs. A certificate of completion from a technical training course provided by a dominant, high-tech firm was widely accepted as a valuable educational credential in the job market.

With the proliferation of products and producers has come change. Price, rather than service or access to a scarce technology, defines the competition. Greater market share has come to depend on "turn-key" and "off-the-shelf" products that are easy to deliver through

a wide variety of suppliers. Since the key to higher profits lies in lower overhead and less contact with the purchaser of the technology, there is simply no advantage to being the firm that provides the market with ready-made service technicians.

The irony, of course, is that the demand for technicians increases proportionally with the diffusion of the technology. Even as the demand for service technicians has increased, their standing and status has become muddied. As the once dominant high-tech firms abandon service and training as company hallmarks, there has grown in their place a catch-as-catch-can market of training courses and programs. A few are offered by major companies at substantial cost to the trainee. Novel, for example, offers a range of courses in the installation, supervision, and maintenance of the firm's local-area networks. The cost is borne by the trainee with no guarantee of a job. For the most part, however, technician training is offered by low-cost vendors—community colleges, proprietary schools, and a few vocational-education programs—whose certificates and credentials remain of uncertain value.

Medical technicians face many of the same problems. The increased reliance on technology to perform procedures and deliver treatment has spawned a host of specialties ranging from laboratory technician to radiation therapist. Despite their growth in numbers, these technicians have little room for advancement; their status, training, and credentials are defined by a hierarchy that limits professional standing to physicians and registered nurses.

In general, what the new technical occupations have most in common, in addition to their utilization of often sophisticated technologies, is the absence of clearly defined career paths and status, particularly in relation to traditional white-collar employees. If technical jobs require high skills, they are nonetheless narrowly defined in terms of the specific tasks they entail. Technicians, both present and future, represent the largest single pool of non-college-trained workers likely to seek additional post-secondary education.

Implications for Higher Education

Shifting employment patterns, increased competition for high-paying jobs, growth in part-time and intermittent employment, rising demand for technical skills training, declining opportunities for employer-sponsored job training—how will these changes in the U.S. labor market affect the nation's institutions of higher education?[4]

Putting this question in perspective requires a better understanding of just how much the quest for good jobs has already transformed the market for post-secondary education. There was a time when colleges and universities drew almost exclusively on "rite-of-passage" students—high school graduates seeking full-time enrollment in academic programs leading to traditional baccalaureate degrees. Today, the presence of higher education's "new majority"—older, often returning students seeking to combine work and learning—is well recognized.

Often overlooked, however, are important differences among students in the "nontraditional" pool. For some, the goal is to acquire specific skills training and/or certification, often at employer expense. Many worker-students, however, seek traditional college degrees as a means to improve their overall employment potential. In fact, the pursuit of post-secondary education by nontraditional students has done nothing to lessen either the continuing value of, or the market for, traditional college degrees. The decline of high-skilled, high-wage employment opportunities for high school graduates, in combination with the increased churning of the youth labor market, is adding substantially to the economic importance of the college degree. The prospect is for a steady increase in college-participation rates over the balance of this decade.

For individual colleges and universities, the question is how best to structure academic programs to serve targeted enrollment markets. Rite-of-passage students, adult degree-seekers, adults seeking skills training—each group poses different challenges and opportunities. The following discussion first weighs the relative claims of degree programs and job-related skills training, then describes how two institutions—a small, liberal arts college and a major research university—have attempted to balance those claims.

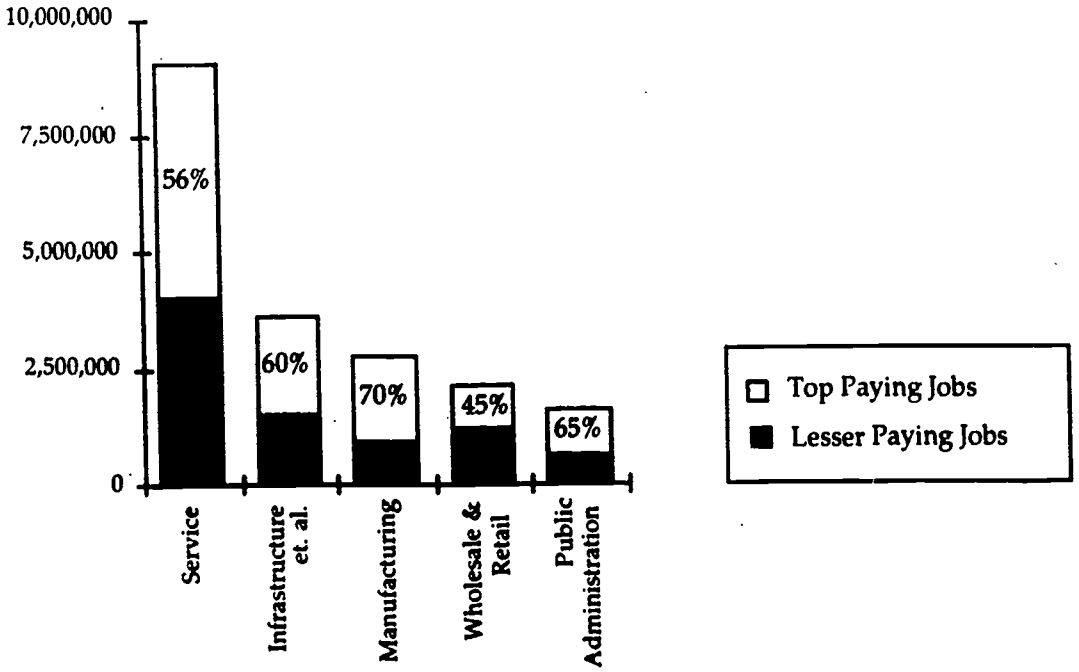
The Importance of the College Credential

The underlying force driving structural changes in post-secondary education is the rise in the importance of the college degree in today's job market. Drawing on data from the Current Population Survey (CPS) conducted by the Bureau of the Census, Figures 3 and 4 show how educational attainment relates to high-wage employment in different sectors of the economy. Figure 3 details 1991 employment patterns specifically for college graduates, while Figure 4 compares data from 1981 and 1991 for workers with various levels of edu-

cational attainment. These data document the increasing importance of obtaining a college education, particularly as high-wage employment has shifted to the service sector. In fact, during 1981 and 1991 college graduates held a larger number of high-paying jobs in every sector, but the differences for the service sector alone are dramatic: in 1981, 2.6 million workers with high-wage jobs in the service sector were college graduates, and nearly 600,000 were workers with some college experience; in 1991, 5 million workers with high-wage jobs in the service sector were college graduates, and almost 1.5 million possessed some college experience.

Though necessary, a college degree in itself is now not—and for the foreseeable future will not be—sufficient to ensure successful lifelong careers. College graduates who seek not only to obtain, but also to sustain, high-paying employment throughout their working lives will need continuing opportunities to acquire and upgrade job skills. For the traditional rite-of-passage student, as well as for the worker who returns to college, the degree from a reputable college or university should function as a screening device, a signal to potential employers that this individual possesses both the basic problem-solving abilities and the behavioral skills necessary for reliable performance. To progress,

Figure 3
Where College Graduates Work: 1991



Source: Current Population Survey, Bureau of the Census, U.S. Department of Commerce, October 1991

Figure 4

High-Paying Jobs in 1981 and 1991 by Sector and Level of Education

	Service Sector	Manufacturing	Wholesale/Retail	Public Admin.	Infrastructure
High-Paying Jobs: 1981					
No High School Degree	110,020	472,168	133,082	76,172	695,489
High School Degree Only	388,871	1,530,475	552,876	264,047	1,486,256
Some College	582,803	1,477,928	477,755	348,780	1,284,428
Bachelor's Degree or More	2,685,834	1,602,753	554,978	760,596	1,403,382
Total	3,767,528	5,083,325	1,718,692	1,449,596	4,869,556
				Total across all industries:	16,888,696
High-Paying Jobs: 1991					
No High School Degree	745,117	550,067	139,076	226,992	615,231
High School Degree Only	715,171	1,617,758	746,812	395,533	2,011,820
Some College	1,489,095	1,550,636	950,178	684,066	1,871,620
Bachelor's Degree or More	5,070,613	1,953,074	957,478	1,059,966	2,174,740
Total	8,019,996	5,671,535	2,793,544	2,366,557	6,673,411
				Total across all industries:	25,525,043

Source: Current Population Survey, Bureau of the Census, U.S. Department of Commerce, October 1981 and October 1991

however, beyond entry-level jobs and compete for relatively scarce high-paying positions—particularly those in the new technical fields—many Americans will need continuing access to job-related skills training.

The real question is whether American colleges and universities will find ways to meet the demand for college degrees that confer genuine job skills. Many observers are convinced that the nation's colleges and universities do not know how to respond to the workforce's new need for task-specific as well as general training—that most institutions of higher education do not understand how the market for work-connected education is likely to change the market for all education, even education directed at the rite-of-passage student. Before accepting this discounting of higher education, however, it would be well to recall the tenacity colleges and universities have traditionally shown whenever they perceive that their economic well-being is fundamentally threatened.

In the 1970s, when demographers began charting the likely effects of the "baby bust" on future enrollments, higher education frightened itself into believing that the demand for a college education would decline by as much as 35 percent over the ensuing two decades. The specter of empty classrooms and campus closings was easily evoked, given the presumption that known declines in the number of eighteen-year-olds would translate directly and proportionally into reduced numbers of high school graduates and thence into diminished college enrollments.

Almost alone among the experts who fed higher education's mania, Carol Francis of the American Council

on Education argued the contrary. Her point was a simple one: institutions don't close, and they certainly don't fade away; instead, they find alternate markets. And so they did. Much of the market for adult education that has come increasingly to challenge higher education was created by the aggressive marketing of courses and degrees to adults who became convinced they needed them.

Job-Related Skills Training

Among those responsible for labor and education policies in the United States, the primary focus currently is on job-related skills training as a critical addition to traditional secondary and post-secondary education. One target of their concern is young people who seek full-time employment immediately upon graduation from high school. Convinced that improving the nation's public schools depends as much on making them truly work-related as it does on making them academically stronger, policy makers are expressing an eagerness to recast vocational education, to make the content of work an integral part of the academic curriculum, and to draw on the students' own experiences as workers.

One vehicle for translating these ideas into action has been the proposal for a national system of youth apprenticeships based loosely on the German model.[5] Apprenticeships would begin in the 11th grade and continue through two years of post-secondary education at a community college. School and work schedules would be fully integrated. Work assignments would include a wide variety of technical tasks. Each apprentice would have both a "coach" for individual assignments and a mentor to provide general guidance. The employing firm would be expected to evaluate the apprentice's progress and to help provide the organizational link between school and work.

Whether fully implemented or not, the youth apprenticeship proposal highlights two increasingly important aspects of the linking of labor and educational initiatives: the explicit integration of school and work settings, and the need to provide greater post-secondary opportunities for non-college-bound youth. The proposal also has focused renewed attention on the nation's community colleges as suppliers of work-related education and skills training. The short training courses offered by community colleges, frequently under contract to employers, are often cited as exemplars of the kinds of technical education that increasingly will be required—courses that present useful information in convenient packages.

In the debate over job-related skills training, new-majority students—the nation's older, mostly intermittent learners seeking either baccalaureate degrees or job-specific skills—are coming to provide a second focus for the linking of educational and labor policies. Rite-of-passage students, and the faculty who specialize in teaching them, increasingly find themselves in competition with this new majority of non-traditional learners and the institutions that aggressively seek to enroll them. Two-year and technical institutions, in particular, can expect enlarged missions and enhanced funding as they meet the growing demand for work-connected postsecondary education.

Among baccalaureate institutions, it is the multi-campus public university system that will likely prove to be the best positioned to serve the new majority. As the rise of the technical crafts promotes delayed and part-time enrollments, working learners will seek access to low-cost educational outlets that allow the ready transfer of credits from one branch to another. Such students will want to combine distance-learning credits, workplace credits, and credit by examination with

the credits they earn on traditional college campuses. Major employers, perhaps even groups of small employers, will want both to take advantage of available public subsidies and to make bulk purchases of educational services for their employees—an educational version of health care's managed competition. The likely appetite of state governments for capital projects that create jobs and offer the promise of economic development, despite reductions in operating subsidies for higher education, will mean continued capital for public systems to invest in distance-learning networks as well as the "on-site learning centers" to serve the work-connected learner. To the extent that a public system of higher education is perceived as a multi-site educational outlet—providing an integrated, fully transferable set of educational opportunities—it will enjoy substantial advantage in this market.

To the extent that private institutions are unable to offer sufficiently standardized products to allow the ready transfer of credits, they will be at a competitive disadvantage. Their prices to the consuming public will be necessarily higher, while their geographic range often will be limited by single-campus traditions and lack of capital to invest in the technologies of distance-learning. The principal advantage of the nation's smaller private colleges, particularly those that successfully diversified their programs and student bodies in the 1980s, will be their willingness to tailor programs to fit specific markets. One intriguing possibility is the creation of a geographically distributed network of institutions that band together to become a "private system" of cooperating educational outlets.

Higher Education's Balancing Act

The experiences of two institutions—a small liberal arts college and a major multi-campus research university—illustrate the opportunities and obstacles inherent in this process of adapting to changing labor markets and enrollment pools. Consider the case of Immaculata College, a small liberal arts institution located outside of Philadelphia. In the 1970s, Immaculata was known simply as a good Catholic girls' school. It was also something of an athletic powerhouse. For three years running, the Mighty Macs won the NCAA women's basketball championship and became one of the first teams to signal the new interest in women's athletics.

Today the Mighty Macs struggle to remain competitive as a Division III school. What they have lost on the basketball floor, however, they have more than compensated for on the balance sheet. In the 1970s, Immaculata was struggling just to stay in business. It appeared then to be a likely victim of the demographically induced downsizing of higher education. Today Immaculata enjoys a balanced budget, substantial reserves, and increasing enrollments. In the 1970s, more than 70 percent of the college's revenues came from its full-time undergraduate program. Today, that traditional market supplies less than 20 percent of the college's revenues. While still as tuition-dependent as ever, the college collects new dollars from a host of programs—for graduate students, for returning learners, and for men as well as women outside the traditional undergraduate curriculum. In Carol Francis' terms, Immaculata did what it had to do to survive—and in the process came to flourish.

For large, complex institutions, the shift to new enrollment markets can be even more problematic. Indiana University encompasses a single, classic rite-of-passage campus and seven other campuses whose undergraduates are, for the most part, non-traditional learners. Three years ago, IU set out to learn why so

few of its new-majority students were persisting to a degree.[6] The results of the analysis were both helpful and discomforting—helpful because it told IU what it must do better; discomforting because it called attention to the magnitude of change required.

IU discovered that more than 80 percent of new-majority students who began their college education by taking just one or two courses were no longer enrolled at any IU campus two years later. Even more troubling was the finding that new-majority students who identified themselves as workers first and students second were even less likely to re-enroll than new-majority students who saw themselves as students first. Apparently, workers who wanted degrees and technical skills, as opposed to workers who wanted to become students in the more traditional sense, had not found what they needed.

IU has begun asking the tough questions. Why is the educational product we offer worker-students not sustaining their interest beyond initial enrollment? If we pursue the growing, and financially important, market for work-connected learning, must we abandon our commitment to the traditional forms of higher education, including liberal learning and general education? What IU is coming to see is that its dominant educational products, those that bear the true stamp of the institution and its faculty, depend on a philosophy of "first things first"—courses of study that begin with a series of general introductory courses principally designed to satisfy distributional and general education requirements. It is a design that still presumes most learners are full-time students who can complete general requirements in two years or less. For the part-time and intermittent learner, however, getting these basics out of the way takes three or four years—too long, apparently, for the working learner to take on faith that, in the end, there will be a tangible link between work and learning.

What the IU analysis seems to be saying is that new products cannot be cast in old molds: meeting the demand for job-connected education means reconfiguring many of higher education's traditional offerings. Such a transformation cannot be undertaken lightly. In the end, each institution will have to establish its own sense of balance, finding the equilibrium between traditional education and job-connected training, between the needs of rite-of-passage students and the demands of intermittent adult learners.

Conclusion

When push comes to shove, how will higher education cope with the turbulence created by changes in the workforce? The evidence is frankly contradictory, suggesting that higher education's glass is neither half-full nor half-empty, but simply half a glass. One school of thought says that colleges and universities are being marginalized, that they now count for less because their products have not satisfied the demand for work-related skills training. The last recession demonstrated just how easy it can be to cut appropriations for public universities and colleges without fear of political retribution. Most legislators, like most of their constituents, have come to believe that institutions of higher education cost too much, that they spend their money in pursuit of their own—rather than the public's—interest. Despite their promises, colleges and universities are no longer widely seen either as engines of economic development or as effective social agencies.

One measure of the diminished political importance of colleges and universities is the limited role they are being asked to play in efforts to revitalize the American workforce. Indeed, traditional baccalaureate institutions currently play no role at all, except for supplying individual academics to act as advisors, consultants, and advocates. American colleges and universities are often portrayed not as part of the solution but as part of the problem—supplying teachers who can't teach, managers who can't manage, and graduates who are insufficiently literate and numerate.

The pessimistic scenario holds that the rising demand for college degrees will persuade colleges and universities that they in fact have to change very little—become a little more efficient maybe, a little more "customer friendly," but basically count on their monopolistic power to confer qualifying credentials. Given that the demand for skills training and vocational learning would likely remain unsatisfied, the inevitable result would be an all-out assault on higher education's credential monopoly. In such a regulatory battle, a recalcitrant and diminished higher education would not likely win.

The optimistic scenario reaffirms the importance of a college degree in an increasingly competitive labor market and points to the tenacity colleges and universities exhibit when securing their own economic survival. Rising to the challenge, colleges and universities could become more like other American enterprises—seeking out new markets, developing new products, and satisfying the new demand for technical skills and work-connected learning. This vision maintains that higher education will do for the rising class of technical craftsmen what it has so often done for new vocations in the past—convey status and standing by providing new credentials and degrees. Taking the long view, the optimist argues that colleges and universities will learn from the travails of other enterprises to become more adaptive, less dependent on central staffs and bureaucracies, and more outlet-like in their approaches to questions of delivery and overhead.

Footnotes

[1] A good example of the prevailing "common wisdom" concerning the conditions of the American labor market can be found in the May 17, 1993, *Fortune* magazine article, "How We Will Work in the Year 2000" by Walter Kiechel III. The article also features the EQW-sponsored work of Cornell University's Stephen Barley on the growth of the technical workforce.

[2] The term "labor market churning" is borrowed from *Turbulence in the American Workplace*, edited by Peter Doeringer (New York: Oxford University Press, 1991).

[3] Stephen Barley, "Will Military Reductions Create Shortages of Trained Personnel and Harm the Career Prospects of American Youth?" (Philadelphia: National Center on the Educational Quality of the Workforce, Octboer 1993).

[4] This discussion of higher education is based on the work of the Pew Higher Education Roundtable—a project run under the auspices of the Institute for Research on Higher Education—whose findings are regularly reported in the publication, *Policy Perspectives*.

[5] EQW-sponsored research on the youth apprenticeship initiative includes: "Youth Apprenticeship and School-to-Work Transition: Current Knowledge and Legislative Strategy" by Paul Osterman and Maria Iannozzi (Philadelphia: National Center on the Educational Quality of the Workforce, WP14, 1993); "Youth Apprenticeships: Can They Work in America?" by Susan Tifft (Philadelphia: National Center on the Educational Quality of the Workforce, *EQW ISSUES* #3, 1992); "What Employers Want: Youth Apprenticeships and the Development of Effective Policies for Improving the Educational Quality of the Workforce" by Robert Zemsky (Philadelphia: National Center on the Educational Quality of the Workforce, 1993); and "What Can the United States *Really* Learn from the German Experience with Labor Market Initiatives?" a presentation summary of the EQW Washington Public Policy Seminar given by Peter Harf on September 10, 1993.

[6] The Institute for Research on Higher Education, "The Landscape: The Changing Faces of the American College Campus," *Change*, September-October 1993, pp. 57-60.

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